UNIVERSAL DESIGN:
Opening
Every Door

BY RACHEL ADELSON

photographs by Ed Kashi

The automatic door at the Berkeley Public Library assists everyone: patrons carrying piles of books, parents hanging onto small kids, and Thad Smith, who gets about on wheels. Mr. Smith has been living with MS for 19 years.

Universal Design enables everybody—not just people with disabilities—to navigate, manipulate, and appreciate our world. Non-slip flooring: It's safer for all sorts of feet. Curb cuts make things easier whether you're pushing a stroller or a wheelchair. Think of a grab bar in the shower. It's seen by many as a "disabled" thing, but who **wouldn't** want one when their eyes are full of shampoo?

Universal Design makes products, communications, and the built environment not only aesthetically pleasing but also more usable by more people—at little or no extra cost. There's just one little problem: Universal Design is not exactly universal. Not yet. If it were, many special accommodations for people with disabilities would disappear. They wouldn't be needed.

Thankfully, product and space designers, heeding the needs of people with disabilities as well as a population with an increasing number of older people, are slowly beginning to solve problems using the principles of Universal Design. New technologies augment their efforts. Examples slowly entering the marketplace include adjustable kitchen sinks and vehicles with more power assistance.

Universal Design and MS: New solutions

It's easy to see how Universal Design aids people with MS by citing specific designs that uphold the philosophy's seven principles.

1. **Equitable Use** … for people with diverse abilities. Curb cuts are an obvious example, as everyone crosses the street.

2. **Flexibility in Use** … for a wide range of preferences and abilities. Sensor-activated faucets have hands-free operation. Sliding cabinet doors are good for lefties or righties.

3. **Simple and Intuitive Use** … The Cuisinart's large, high-contrast "on/off" lever requires no training and has only to be pressed.

4. **Perceptible Information** … Telephones and remotes with big, clearly

An approachable useable ATM.

marked buttons are easier on the eyes and the fingers.

5. **Tolerance for Error** … Low-sheen hard floors reduce distracting glare and are less slippery.

6. **Low Physical Effort** … Fat, cushioned pen barrels are easier to grip. Sensor-activated doors eliminate hassle for everyone.

7. **Size and Space for Approach and Use** … a standard width for doorways and bathroom stalls that admits walkers or wheelchairs.

Encouraging innovation

In practice, Universal Design remains easier to say than do, at least for existing installations. Award-winning Universal Design advocate Bruce Hannah, who chaired the industrial design department at New York's Pratt Institute, put it this way: "It's still an uphill battle, but it's taken very seriously in the public sector for new schools, public buildings, and transportation. The Americans with Disabilities Act forced them to do it." But, according to Hannah, the private sector still works around the ADA by "grandfathering" older structures.

As a case in point, the National MS Society's chief meeting planner, Leslie DiLeo, books only hotels that are accessible by ADA standards. She goes beyond ADA and looks for ease of mobility. But the available choices are not always perfect settings. "Distances and other issues make things not so easy sometimes."

She says, "An abundance of roll-in showers is always good to see. A hotel that has conference space on floors one above the other rather than spread out is easier for everyone to negotiate. And accessible restrooms spaced in several

Universal Design has wider application than specialized assistive technologies. These innovations may be expensive as well as ingenious. Specialized technologies will be featured this fall in a PBS documentary, "Freedom Machines: Bodies, Technology, and the Spirit of Independent Living." Check the local listing of your PBS affiliate.

A washroom for all.

locations on every conference floor is ideal." For the Society's annual conference, which may draw 20 or 30 hotel guests who rely on wheelchairs, hotels have made alterations, primarily by installing lower peepholes in room doors, insulating pipes under bathroom sinks, and attaching grab bars to bathroom walls.

But sometimes these improvements are transient, and frustrations remain. DiLeo recalled, "One hotel was willing to build an elaborate ramp for us, but at the last minute, the city refused to approve the plans."

She noted, "We'd like to encourage permanent change, but the reality is that once we end our conference, another group is lining up to check in. To make permanent changes for people with special needs, we can't rely on ADA compliance alone."

Universal Design, by becoming the norm, could eliminate many problems. Architects and planners can truly ensure built environments that serve a diverse population if they begin thinking UD in the planning stage of construction or full

renovation. Retrofitting is rarely as good a solution.

Change may be slow, but it is coming, Hannah said. "Universal Design has been taught in design and architectural schools just in the past 10 years. Today, my students come prepared to learn about it, and UD changes the way they look at the world. That's how it will get into the mainstream."

Smaller products tend to lead the way. "The big stuff is harder because of embedded conventions," Hannah said. "But in products and appliances, innovations at the high end, such as refrigerators with pull-out drawers, trickle down quickly as it becomes obvious that these are good solutions." Industrial designers must involve people with a variety of disabilities and have them test new products, Hannah stressed. "There's no substitute. A tester can't pretend to have a disability."

Universal Design meets assistive technology

At the other end of the spectrum, technologies such as keyless computer keyboards are designed for specific niche populations. But it turns out that niche may go universal. Keyless keyboards, with head-mounted cursors, help people with disabilities—and people who need their hands free to multitask.

To encourage innovation, the National MS Society sponsors the annual daVinci Awards, which honor inventors and companies nationwide for developing products, services, or facilities that "empower all people, regardless of physical ability." Spearheaded by the Michigan Chapter of the Society and judged by the Engineering Society of Detroit, the program has honored major corporations, including GM, Walt Disney World, and IBM, along with inventors housed in those proverbial garages.

Designs reflecting UD principles are proving to be good for business. Ask OXO International, Inc., of New York. With the guidance of Smart Design LLC of New York, OXO makes Good Grips kitchen tools. Originally envisioned for arthritic hands, twist and push-pull tools such as knives and peelers come with plump, resilient handles; squeeze tools such as can openers have hard handles. Good Grips has succeeded in the general marketplace, according to Hannah, because, "if Baby Boomers can get ease, comfort, and safety with good design, they'll buy it."

As another example, many minivans and SUVs are now equipped with a 2002 daVinci Award–winning Power Liftgate, designed by the Delphi Corporation. It allows drivers to open the rear door by

Elevator buttons for people with diverse abilities.

pushing a button. Intended to aid people with wheelchairs, it also makes life easier for anyone else who finds it hard to open the high rear doors of these large vehicles.

Disability-rights lawyer George A. Covington, co-author of the UD product bible, **Access by Design** (see below), has written, "Some severely disabled individuals will need specific modifications for use. With Universal Design, however, fewer and less-costly modifications will be needed."

Once Universal Design is in place, no one complains, Hannah concluded. "If accessibility is there, we don't notice it. A door opens easily, period." Thanks to the philosophy's broad appeal, people with MS seeking Universal Design in products or structures should feel great about their quest: They're actually doing everyone a favor. ■

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Resources

Affiliated with the North Carolina State University in Raleigh, the Center for Universal Design evaluates, develops, and promotes Universal Design in housing, public and commercial facilities, and related products. Its toll-free Info-Line is **800-647-6777**. The center posts scores of links to useful organizations online at **www.design.ncsu.edu/cud**.

The Center for Inclusive Design and Environmental Access (IDEA) at the University at Buffalo's School of Architecture and Planning is at **www.ap.buffalo.edu/idea**. Its many resources include "Bright Ideas", a gallery of useful products.

Access by Design, by disability-rights lawyer George A. Covington and designer Bruce Hannah (John Wiley & Sons, 1996), is a comprehensive photographic compendium of Universal Design products and approaches.

The Web site **www.smarthome.com** sells home automation products, including voice-activated lighting and appliance controls. It includes a directory of local installers.

General Motors (GM) is creating an online community of up to 300 people to shape transportation solutions for people with limited mobility, including people with disabilities and their caregivers. Community members can discuss new technologies, react to questions posed by GM, provide insight into their lives, and assess how new features might help. GM will present periodic gifts and rewards in exchange for participation. If you are interested in being chosen for this community, go to **http://websurveyor.net/wsb.dll/13201/gmcom2.htm?wsb116=NML**

Ford's Mobility Motoring program can be viewed at **www.mobilitymotoringprogram.com/home.asp**