Universal Design:

by Michele Keith

Improving More Lives Than Ever Before

The Modern at the Museum of Modern Art, NYC.

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The concept of universal design has broadened so extensively since its inception in the 1970s that it is now also called inclusive design, design for all and life-span design. Instead of being directed solely toward people with disabilities, today it considers as many people as possible without ignoring those with disabilities. Simply put, says Rosemarie Rossetti, Ph.D, a popular speaker about UD, "UD levels the playing field so that everyone is accommodated."

Why This is Important

According to Marian Vessels, director of the Mid-Atlantic ADA Center, "In 2010, the latest record we have, the U.S. Census Bureau reported that 56.7 million people in the United States had one or more disabilities, one in five. This number continues to grow as a larger percentage of our population acquires disabilities often as a result of aging, accidents or combat, as is the case of returning veterans." And with the spending capacity of people with disabilities in the U.S. estimated to be $220 billion, it's not only a question of helping as many people as possible to enjoy full lives, it's pure economics.

How We Can Understand

Unless we or someone near and dear to us is incapacitated in some way, which could be short- or long-term and anything from a broken leg to macular degeneration, it's difficult to truly understand the challenges millions of people face every day, sometimes for their entire lives.

One company trying to remedy this is TOTO. Not only do many of its products undergo an extensive evaluation process at its Universal Design Research Center in Japan to verify UD principles are incorporated, but it utilizes "aging suits" to help its engineers better understand people's divergent needs. These empathy suits feature fogged, tinted goggles and earmuffs to simulate sight and hearing restrictions; stiffened leggings, vests and armbands that restrain movement and the ability to turn or bend; and webbed gloves with padded fingers to emulate impediments to touch, reaching and the manipulation of buttons and knobs. Once worn, the sensation is rarely forgotten.

Hotels and Restaurants

Be it a hotel or restaurant, one never knows who might come through the door. When planned with UD in mind, that's not an issue; the environment is welcoming to everyone. Most important, when done correctly, nothing screams "designed for the disabled."

"All of our hospitality projects incorporate many principles of universal design," says Bentel & Bentel partner Carol Bentel, "because all establishments open to the public in the U.S. must conform to the standards and regulations set forth in the Americans with Disabilities Act." Moreover, she says, "In many ways, being more gracious with space, minimizing floor-level changes and designing lightweight, movable furniture – just three examples – serve the dual purposes of meeting accessibility codes and creating a more pleasing design, and with it, a better experience for the end user, whoever they might be."

With such diverse Bentel & Bentel projects as the public areas at the Grand Hyatt Hotel, NYC and any number of Danny Meyer's New York hot spots. including North End Grill and The Modern at MoMA, the Locust Valley, New York-based designer knows of what she speaks.

Of great importance, she says is the attention paid to comfort

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Ramsey Public Library in Ramsey, New Jersey, designed by Lothrop Associates, White Plains, NY.

EIGHT GOALS OF UNIVERSAL DESIGN

1. Body fit
2. Comfort
3. Awareness
4. Understanding
5. Wellness
6. Social integration
7. Personalization
8. Cultural appropriateness

and making sure people of all shapes and sizes are considered. This can mean tables are different heights or have fewer legs, chairs might have arms or not, and tables, bars and counters are the correct height in correlation to the seating. This is verified by making actual-size mock-ups of the furniture and bringing in samples to test.

"One trend in UD," says Bentel, "is to allow people to function more on their own rather than depending on signage." It's called "wayfinding," the techniques people use to orient themselves and navigate from place to place. Methods include colored tiles to help a person reach his destination, or textured vs. non-textured tiles to signal a change in the floor level.

"We use as many natural materials as possible," she adds, saying, "We think they make people feel better. In addition, they usually endure better than synthetic, faddish materials and don't date a project." Last, because "There are some gray areas with regard to UD and ADA," Bentel & Bentel often suggests their clients hire an accessibility consulting service such as the United Spinal Association to review specifics.

Schools and Libraries

Similar to hotels and restaurants in hosting a variety of people with diverse needs that must be met, schools, too, must incorporate UD in their construction if they are to turn out young people not only accomplished in academic skills, but with the means to live rewarding, happy lives. Many studies have shown this to be true.

One of the most recent, the Holistic Evidence and Design Project, took place at the University of Salford in the United Kingdom where researchers studied 3,766 students and 153 classrooms in 27 primary schools across the country. Their paper, published on February 25, 2015, reveals how differences in the physical characteristics of classrooms, such as air quality, color and

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light, can together increase the learning progress of primary school pupils by as much as 16 percent in a single year. Natural lighting had a larger effect than any other factor.

One spectacular example of an American school incorporating the study's findings, including the prodigious use of light, is Avenues: The World School in Manhattan, situated alongside the High Line park.

As Enrico Bonetti, co-partner of New York-based Bonetti/Kozerski Studio, recalls, his directive was to "convert a 1928 landmarked building last used as a warehouse into a state-of-the-art, pre-K to 12th grade school." A great achievement, the project was a collaboration of all the involved parties, including the headmasters and a team of experts ranging from the school's founders to the architect to the school's psychologist.

"Each classroom has an average of three, four-foot by eight-foot windows," Bonetti says. Clutter is eliminated with hidden storage; such classic materials as white marble and quarter-sawn white oak and exposure to the old building balance tradition and innovation; furniture configurations evolve from floor to floor reflecting the different ages and needs of the students, from communal tables to individual study carrels; the predominantly white environment filled with natural materials grounds such colors as the restrooms' lilac resin floors, light blue seating cubes and reflective dark tiles in the cafeteria; there are outdoor seating areas; and from every level and almost every corner one sees the wonders of the neighborhood.

Faced with many of the same issues, Lothrop Associates in White Plains specializes in designing libraries, for schools, communities and private individuals. "One size no longer fits all," says Judy Girod, FASID, director of interior design. "We use lots of custom design to make sure we address the specific challenges of each project." Among the solutions they've created are bookshelf mazes for toddlers with small-scale furnishings and their own private entrance to special technology centers for retirees and the growing number of people who use libraries as their private office.

"Good design can be beautiful, convenient, efficient, safe and comfortable for all," adds Girod. It's an opinion that's gaining ground every day, and it couldn't be happening at a better time.

The 7 Principles of Universal Design

1. **Equitable Design**
   The design is useful and marketable to people with diverse abilities.
2. **Flexibility in Use**
   The design accommodates a wide range of individual preferences and abilities.
3. **Simple and Intuitive**
   Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills or current concentration level.
4. **Perceptible Information**
   The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.
5. **Tolerance for Error**
   The design minimizes hazards and the adverse consequences of accidental or unintended actions.
6. **Low Physical Effort**
   The design can be used efficiently and comfortably and with a minimum of fatigue.
7. **Size and Space for Approach and Use**
   Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.