



Do you see what I see?

Coming to terms with comparable lines of sight

Standards making bodies as well as those involved in owning, designing, building and potentially using assembly areas are struggling to develop technical criteria that will result in wheelchair seating that has “lines of sight comparable to those of the general public,” as required in the Americans with Disabilities Act Accessibility Guidelines (ADAAG).



Defining “comparable line of sight has proved difficult in stadium-style movie theaters

With no agreement on the definition of a comparable line of sight, the effort to develop technical criteria has proved elusive. The American National Standards Institute (ANSI) A117.1 Committee is currently updating its standard. At its four-day meeting in December 2001, sightlines dominated the discussion. As a result, the committee completed only one-third of its agenda, addressing the balance of the items at a special follow up week-long meeting in February.

Early On

An early attempt to define comparable lines of sight came in the case of the Olympic venues built for the 1996 Summer Olympics in Atlanta. A settlement agreement between the Department of Justice and Olympic organizers was formulated that equated comparable lines of sight with unobstructed lines of sight. It called for virtually all the stadium’s wheelchair seats to have unobstructed lines of sight to the playing surface even when spectators in front of them stood up during the event. One percent of seats were set aside for people who use wheelchairs. These seats were dispersed throughout the stadium, including in suites and on the Club Level. Also, each wheelchair space would have a companion seat.

See Sightlines, page 14

Innovative Continuing Ed Course Features Universal Kitchen

Where can an aging baby boomer or person with a disability who wants to be as self-sufficient as possible learn first-hand about universal design features in a kitchen? Now people with functional limitations, as well as the average consumer, have an innovative education option for learning more about designing a universal kitchen: a two-day continuing education course at Virginia Polytechnic Institute & State University (Virginia Tech), which features a model universal kitchen as part of the hands-on class.

Created in 1998, Virginia Tech’s Center for Real Life Kitchen Design at its Blacksburg, Va., campus is the first of its kind in the nation. Besides the universal kitchen model, the center features four other kitchen “vignettes”: a gourmet kitchen, starter kitchen, contemporary kitchen and family kitchen. These models show a range of products, features and price points.

See Universal Design Kitchen, page 12

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Discord Harmony

It is with great sadness that I must report we will not see harmonized accessibility design standards anytime in the near future.

For more than 25 years I have watched the leap-frogging and misalignment of federal and private accessibility requirements. Then in 1994, a golden

opportunity arose. The stage was set for the simultaneous revision of the ANSI A117.1 Standard and Americans with Disabilities Act Accessibility Guidelines (ADAAG) when many of the same people were on both review bodies and agreed to try to harmonize the two standards. The ANSI A117.1 Standard is used as the basis of accessible design in model building codes across the US. The ADAAG (also known as the ADA Standards for Accessible Design) are used as the basis for enforcement of Title III of the Americans with Disabilities Act (ADA) by the US Department of Justice.

The problems associated with dual standards have been especially clear since the ADA went into effect in the early 1990s. Since that time there has been ongoing confusion and difficulty in the design and construction industry because the building codes and the ADA do not always require the same things. The ANSI A117.1 Standards are widely used by local and state building officials in reviewing construction documents and inspecting work to insure that buildings are built

in accordance with the building codes. Building officials use the A117.1 Standard to help identify problems and develop compliant solutions. Building officials do not issue occupancy permits until code violations are resolved.

There is, however, no comparable review and inspection process for the ADA. To make the situation even more confusing, it is the building owner, not the designer or contractor who is held responsible for compliance with the ADA. This confusion has led to hundreds of lawsuits and millions of dollars in unplanned costs.

Many people in the design community (including this author) had hoped that an ANSI A117.1

Standard would someday be adopted, by reference, to replace the technical criteria portion of the ADA Accessibility Guidelines (ADAAG) and subsequently become the enforceable ADA Standards for Accessible Design.

The ANSI A117 Committee and the ADAAG Review Federal Advisory Committee succeeded in reasonably harmonizing the two documents in 1996. The ANSI committee published its harmonized standard in 1998. Five years later, the Access Board has failed to publish what was expected to be its harmonized version of ADAAG. In late 1999 the Access Board published a proposed revised ADAAG, but it contained significant departures from the harmonized recommendations. Recent statements by the US Access Board have indicated that there can be differences in the two standards and they can still be considered "harmonized." This is like saying that you can be partially pregnant.

As part of its required five-year review cycle, the recent ANSI A117 Committee meetings seem to have pounded the final nails in the coffin of harmonization. The ANSI committee gave preliminary approval to many technical changes to the next version of the A117.1 Standard that cannot be included in the new ADAAG due to the lengthy federal review and public comment process.

As a result, the opportunity for harmonization has passed us by and the likelihood is very low of ever again encountering similar alignment in the review processes and review committee members. I am concerned that we will continue to be faced with many years of continued confusion as these two sets of accessibility standards continue to play this game of leap frog.

jsalmen@UniversalDesign.com

Read about first-hand experiences of designing and building a true universally designed home in the new
"Home for the Next 50 Years"
column on page 15.

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Court Says Unobstructed Sightlines Requirement Doesn't Include Viewing Angles

The Americans with Disabilities Accessibility Guidelines (ADAAG) requirement for "lines of sight comparable to those of the general public" in stadium-style movie theaters does not encompass comparable viewing angles, according to another federal court.

In the case of *United States of America v. Cinemark USA Inc.*, a judge in the US District Court for the Northern District of Ohio, Eastern Division became the third federal court to reject arguments that ADAAG requires that viewing angles be comparable to that offered to most members of the general public or that wheelchair spaces be included in the stadium-style seats.

In his opinion denying the government's request for summary judgment, the Hon. Donald C. Nugent agreed with the reasoning in another case -- *Lara, et al. v. Cinemark USA Inc.*

Nugent noted that "the government has not persuaded the court that either the [Department of Justice] or the [US Architectural & Transportation Barriers Compliance Board (Access Board)] intended Section 4.33.3 [regarding assembly seating] to encompass viewing angle."

In its Nov. 16, 1999 Notice of Proposed Rulemaking, the Access Board stated that "DOJ has asserted in attempting to settle particular cases that wheelchair seating locations must: (1) be placed within the stadium-style section of the theater, rather than on a sloped floor or other area within the auditorium where tiers or risers have not been used to improve viewing angles; (2) provide viewing angles that are equivalent to or better than the viewing angles (including vertical, horizontal, and angle to the top of screen) provided by 50 percent of the seats in the auditorium, counting all seats of any type sold in that auditorium; and (3) provide a view of the screen, in terms of lack of obstruction (e.g., a clear view over the heads of other patrons), that is in the top 50 percent of all seats of any type sold in the auditorium. The Board is considering whether to include specific requirements in the final rule [of the new ADAAG] that are consistent with DOJ's interpretation of 4.33.3 to stadium-style movie theaters."

The court noted that with that statement the Access Board, in effect, acknowledged that changes to current law were necessary to codify DOJ's

position concerning wheelchair seating.

Citing the lack of evidence to show that the wheelchair seating in any of Cinemark's theaters suffers from an obstructed view, the court granted Cinemark's motion for summary judgment.

Bulletin on Construction Tolerance Available for Review

The US Architectural & Transportation Barriers Compliance Board (Access Board) is sponsoring a project with the Construction Specifications Institute (CSI) to develop guidance on certain types of construction tolerances for use with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

As part of the project, a draft technical assistance bulletin has been developed and is available for review online. The final product is expected to provide recommendations on construction tolerances and measurement protocols for surface flatness, slope, vibration and "rollability."

"ADAAG generally recognizes conventional building industry tolerances for field conditions, but does not specifically define accepted tolerances," according to the Access Board. "The bulletin will provide guidance for design professionals, contractors, and code officials in determining acceptable tolerances."

This is the Access Board's first joint effort with CSI and its first foray into the online review process. "We are pleased with how it's gone so far," said Dave Yanchulis, accessibility specialist with the Access Board. "We feel this project is helping fill an information need." He noted that the Access Board doesn't have expertise in construction tolerance issues and turned to CSI for its help.

The Access Board is hoping that the online review process, a method common used by CSI, will broaden the distribution of the draft document. "In developing technical assistance materials, the Access Board likes to get feedback from designers, construction industry professional and people with disabilities – it helps make a stronger final product" said Yanchulis. "It is in our best interest to circulate [the draft] as widely as we can."

A draft of the bulletin was previously made available for public comment.

A second draft is available for review at: www.infraknowledge.org 

"It is in our best interest to circulate [the draft] as widely as we can."

Dave Yanchulis,
accessibility specialist,
The Access Board

Universal Design in an Urban Landscape

New York City has a long history of protecting the rights of and enhancing opportunities for people with disabilities.

Nearly three decades ago, the city established the Mayor's Office for People with Disabilities (MOPD) to serve as a liaison between the community and city government, to provide resources to city agencies on the Americans with Disabilities Act (ADA) and other legislative matters and to act as an advocate for the community on accessibility issues.

Almost 20 years ago, the city opened the Playground for All Children in Flushing Meadows Corona Park, making it one of the first universally designed play facilities in the nation and a model for future playgrounds. In addition, New York City's Human Rights Law, which was adopted 25 years before the ADA and remains one of the strongest and most comprehensive civil rights laws in the country, contains provisions for people with disabilities that exceed those mandated in the ADA.

So it came as no surprise to the design community when New York City, with its recent release of *Universal Design New York*, became the first US city to publish a book for architects, designers, urban planners and developers on creating universally accessible structures. The driving force behind *Universal Design New York* is Catherine Paradiso, the executive director of the MOPD. She is enthusiastic about the potential of the book to educate public agencies that hire designers and builders as well as developers of private facilities such as hotels, office buildings, restaurants and theaters. "Universal design aspires to create products and environments that are usable by all of us," says Paradiso. "Not only will our own citizens benefit from increased accessibility of our city's parks, structures and public transit, but so, too, will the almost 40 million visitors who come here every year."

For the past two years, Paradiso's focus has been

on educating the general public on issues of accessibility. Her accomplishments include conducting forums on employment and reasonable accommodation, domestic violence, personal safety, crime prevention,

technology access and universal design. She oversaw a highly successful conference on universal design for the architects of New York City as well as two first-time, city-wide celebrations to honor the contributions that people with disabilities have made to the city in addition to the well-received *Universal Design New York*. Her office has published a community resource directory, sports guide and cultural access guide.

"When all aspects of designing a space are universal, everything becomes easier for everyone," wrote Paradiso and Kenneth R. Holden, Commissioner of the Department of Design and Construction, in the book's preface. "Children, people who have learning/cognitive, vision or hearing impairments, people who use wheeled mobility devices, senior citizens, people of short stature, parents carrying children or packages—we all benefit from universal design."

Paradiso does, however, recognize the magnitude of the challenge of making New York City a model of universal design. "It's almost too grandiose to be realistic," she says. "But I'd like to see people use the principles of universal design as a design choice in everything they produce, from websites and cars to office equipment and buildings. Universal design should be among the basic concepts of good, solid, practical design. Right now, there's not enough awareness about universal design on the part of developers, designers and builders. So that's my focus and one of the chief goals of the Mayor's Office for People with Disabilities: to spread the word about the virtues of accessibility for all."

Recipient of the New York Counties Registered Nurses Association's Lavinia Dock Service Award for Outstanding Contribution to the Improvement of Public Health and the Urban League Health and Social Welfare Award, Paradiso is a widely published author and contributor to a variety of nursing and medical books and journals. She also writes a monthly column for the Health and Fitness section of the *Staten Island Advance*, but she's quick to point out how fulfilling her role as Executive Director of the MOPD has been to date. "I'm very proud of the work I'm doing in the Mayor's Office," says Paradiso. "Making sure that the disabled community is included in the planning, and helping to make government really work for the people is extremely rewarding. If I've learned one thing, I've learned that no matter where I go in the future, I'll always strive to be an advocate for universal accessibility."

Note: *Universal Design New York* can be downloaded for free by visiting <http://design.ap.buffalo.edu/~idea/publications/udnycpub.htm>.

Universal design should be among the basic concepts of good, solid, practical design. Right now, there's not enough awareness about universal design on the part of developers, designers and builders.

Catherine Paradiso,
Executive Director,
Mayor's Office for People
with Disabilities



The Playground for All Children in New York City.

CANADA: Design Exchange Partners with Businesses for Universal Design

The Design Exchange of Toronto, Canada dedicated its 2001 nation-wide design competitions to universally designed products and environments. To develop the five competitions that addressed architecture, industrial, graphic, interior, urban, landscape, textile and fashion design, the Design Exchange partnered with four other Canadian companies: The Mibro Group, Tilley Endurables Inc., DuPont Canada, and OBUS FORME Ltd. The five sponsored competitions and the first prize winners are:

Create The Perfect Box, sponsored by the Mibro Group, “Big Hopper/Small Hopper”, by Andy Lam, Industrial Design, Ontario Collage of Art and Design, Toronto, ON and Jie Ren, New Media Design, Centennial College, Toronto, ON.

Universal Nomads Travel And Adventure, sponsored by Tilley Endurables Inc., “Mutations Pack”, by Clarissa Gonzalez, graduate in Fashion Design, George Brown College, Toronto.

Life By Design, sponsored by DuPont Canada, “Easy Pour Universal Kettle”, by Barbara Kulig, graduate in Fashion Design, George Brown College, Toronto.

ReCovering & DisCovering Design, sponsored by OBUS FORME Ltd., “Cube Obus Forme”, by Nathalie Blanchard, graduate in Fashion Design, George Brown College, Toronto.

Universal Design Space, sponsored by Design Exchange, “Ashern Redevelopment” by Joel Casselman, Chris Daly, Heidi Eastman, Nicole Grossman, Jason Jakubowski, Kristin Koenker and Laney Laurendau of University of Manitoba and Universal Design Institute.

For more information, please contact: Ilena Messina at ilena@dx.org.

COLUMBIA: Universal Design at the National Museum

The National Museum of Columbia has created a free, universally designed public art museum to display its collections that span from the Pre-Co-

lombian era, to the Spanish Conquest, to Contemporary Art. Coco Raynes Associates of Boston, MA were hired by the Ministry of Culture to create a master plan for an inclusive educational program. The museum is housed in an ex-penitentiary built in 1874, now a historical monument. The collections are displayed throughout two floors and cannot be touched. Raynes explains, “Our goal was to address all visitors, including children, visitors using wheelchairs, visually impaired, or illiterate.

The added museography had to complement the existing one, and blend with the Spanish Colonial architecture. The result is a tactile and audio itinerary that allows for an autonomous visit within the general visit, highlighting typical examples of each period.”

While replicas for tactile discovery could substitute for archeological pieces, it was more of a problem to meet the needs of sighted and non-sighted visitors regarding paintings, pieces of equipment or furniture. Audio commentaries presenting the pieces in their historical context became the common denominator for all visitors. Tempered glass with etched surface was selected for all maps and display surfaces. The material is unobtrusive and economical, and the etched technique provides raised information including tactile drawings, text and Braille, on a non-glaring surface. In the museum lobby, a main directory resting on a console introduces the tactile itinerary on the slanted glass surface. At the entrance of each gallery, walls and paths further guide visitors to the exhibits. For more information, contact Coco Raynes, at: coco@raynesassociates.com or see the Exemplars of Universal Design CD ROM at www.design.ncsu.edu/cud.

EUROPE: Disability Forum Promotes Design-for-All

Design-for-All was the theme of the high-level roundtable meeting celebrating the European Day

See World Update, page 10



A pre-Columbian figure which is kept in a display case and in a raised drawing on etched glass, for tactile exploration.

“World Update” is written by Elaine Ostroff, founding director of Adaptive Environments Center. If you have information about international universal design efforts that you would like to see published in *Universal Design Newsletter*, write to: 6 Grant Ave., Takoma Park, MD 20912; or publisher@universaldesign.com.

Ten Years of Universal Design

This year Universal Design Newsletter is celebrating its 10th Anniversary. As part of our celebration, we are featuring articles from various “movers and shakers” – designers, advocates, attorneys and officials – to reflect on what has happened in the field of universal design over the past decade. Our thanks to Satoshi Kose for his contributions to this issue.

The revised estimate of Japanese population ageing also persuaded people that ageing is their own tomorrow.

Satoshi Kose

Universal Design of Housing in Japan

by Satoshi Kose, Building Research Institute, Japan

These 10 years have witnessed drastic change of people's assumptions on dwelling design. A big project on designing for the ageing society was completed in Japan in March 1992, and a draft of design guidelines of dwellings for the ageing society was one of the major results of the project.

A preliminary draft to be applied to public multi-family housing was adopted by local governments in 1991, and the first examples were taking shape on architects' drawing boards at that time.

The report containing the draft design guidelines was sent to offices of local governments and central libraries of prefectures in the hope that they would be utilized not just by the local government officials but also by lay persons.

The idea was also transmitted to the housing manufacturers' associations so that they could realize the rapid change of society's assumptions.

It took longer than expected to officially issue the guidelines from the government. The first move by the government was the launch of the Accessible and Usable Buildings Law in June 1994, which did not cover residential buildings. The

guidelines were to follow within a few months. Unexpected happenings delayed the issuance, including the Great Hanshin Earthquake, but the guidelines were finally issued in June 1995.

Fortunately, however, the time was ripe for the concept to be adopted. The Housing Loan Corporation of Japan, the governmental housing mortgage system, had to introduce changes in the criteria for issuing mortgages. They chose energy saving, high durability, and design for ageing as essential requirements for qualification of lower interest rates. The change was effective in October 1996. This has led to a complete change of design standards of housing manufacturers. The revised estimate of Japanese population ageing also persuaded people that ageing is their own tomorrow. The starting point for them is to choose dwellings that have features of design for ageing.

In 2000, the housing performance indication system was in force, which included design for ageing among the criteria, and although the system is non-mandatory, housing manufacturers cannot ignore the idea since it has become a de-facto standard. Coupled with the Securing Housing Opportunities for Seniors Law in 2001, dwelling design for our ageing society is accepted as a basic standard feature. Hopefully, in the near future people will be more likely to encounter universally designed dwellings when they choose where to live. □



DESIGN TIPS

? **Problem:** How do you make a small restroom accessible if the wheelchair turning space is restricted by the lavatory?

Tip: By installing a smaller lavatory at a height that provides complete knee and toe clearance, it may be possible to provide sufficient

clear volume for a wheelchair “T-turn” or circular turn. □

Universal Design Newsletter provides a one-year free subscription for any tip that we publish. Send your tip to: Universal Design Newsletter, 6 Grant Avenue, Takoma Park, MD 20912-4324, fax: 310.270.8199; publisher@universaldesign.com



Visitability Regulations: Simple as No-Step?

Visiting new single-family homes is expected to get easier in Naperville, Ill. On Feb. 6, the city became one of the latest localities to pass an ordinance making homes more “visitable.”

The ordinance requires homes to be built with wider interior doors on first floors, wall reinforcement in bathrooms, and lowered switch heights on walls. In a future meeting, the Naperville Common Council will consider a zero-step entrance requirement. The Naperville ordinance is unique in that it would require all homes built with public and or private monies to include visitable features.

Single-family detached housing is one of the last types of buildings not covered by any legal requirement to provide access. It is, however, one of the most prevalent types of housing in the United States.

In 1986, in an effort to improve the accessibility of the rapidly expanding housing stock in the Atlanta area, Georgia housing advocate Eleanor Smith and the group Concrete Change began to promote the concept of Visitability.

Concrete Change defines Visitability as the inclusion of three basic access features into the design of single-family detached homes:

- one zero-step entrance,
- 32 inch clear doorways throughout the floor plan, and
- basic access to a bath or half bath on the ground floor of the home.

The contention of advocates is that Visitability provides both basic access advantages for the general public within the community.

The following is from an international Visitability discussion list operated by the Rehabilitation Engineering Research Center on Universal Design at Buffalo (RERC). It demonstrates that Naperville may be on the leading edge of the movement, and a lot more advocacy work is needed to make visitable housing universally available. The discussion explores the question: Should we advocate now for Visitability mandates? Or, seeking a higher standard, (should we) work for the future inclusion of universal design in housing?

Phil Dommer

... I'm not sure I understand it, but, there is more evidence suggesting that such mandates will re-

strict advances than there is [evidence] that they will be beneficial. [For example]:

1. Review of the effect of the [Americans with Disabilities Act (ADA)].... There is no evidence suggesting that after its adoption, the building industry, if left on its own, would voluntarily incorporate access on a widespread basis....

2. Understanding of the historical human behavioral response to public policy... .. most will not respond favorably to voluntary efforts. For those, mandates, or, incentives are required. However, behavioral science shows that those required to comply with mandates are not inclined to go beyond those mandates or maintain them if the mandates are removed.... The problem with Visitability legislation is that the mandate is not far reaching enough....

3. Hard data.

A. ... In the 1980s [St. Paul, MN] mandated that single family homes have commercial sprinkler systems if they used public funds. (Sounds like some visitability mandates!) Not long ago the ordinance was repealed.... even those who supported the mandate did not put sprinklers in their homes when not required to do so.

B. Several visitability ordinances have been around long enough to stimulate voluntary incorporation of UD features beyond the basic visitability requirements if indeed that is likely to occur. I can't find any evidence of UD being incorporated on a widespread basis. ...

I understand Visitability and support it - and UD homes offer Visitability for all. If we are using Visitability mandates as a means to realize more comprehensive UD in the long term, then, there are more effective methods to put our resources behind, incentives for one.

If some want to fight for mandates in addition to incentives and voluntary methods, then they should fight for mandates for more comprehensive

See Visitability Dialogue, page 8

Should we advocate now for Visitability mandates? Or, seeking a higher standard, (should we) work for the future inclusion of universal design in housing?

The contents of this insert are provided by the Rehabilitation Engineering Research Center (RERC) on Universal Design at Buffalo, which is sponsored by a grant from the National Institute of Disability and Rehabilitation Research (NIDRR) U.S. Department of Education (DOE). These contents, however, do not necessarily represent the policy of DOE. Readers should not assume an endorsement by the federal government.

Visitability Dialogue, *from page 7*

UD - inclusion for everyone.

If some will fight for mandates for just Visitability, then all must be prepared to settle for that low threshold. Historical evidence indicates that that is most likely all we will achieve. In other words, be willing to win the battle but lose the war.

Renee Riddle

My 2 cents worth.... Phil might be right about people just doing minimum requirements of mandates, and not going beyond when they could. However, mandates will achieve much more "basic access" than voluntary will achieve "UD". Also, if voluntary, most won't even do basic access (one no-step entrance and 32" doorways throughout). Some things are important enough that they take mandates, such as fire codes.

Visitability is a civil and human right for people with mobility aids, allowing them to visit whomever invites them in. But it goes further. Basic access is the most costly when making a home accessible. Most people with mobility impairments could buy and survive in a home that has basic access. For those who need more accessible features, it will be much cheaper and easier to accomplish when basic access is already there.

To be quite honest, the government usually creates mandates, not because they care about people, so much as because it will save them money. Individual freedoms are taken by mandates everyday. An example is the seatbelt law. Why does the government care if I wear a seatbelt — it's my body if I hurt it? Actually, they really don't care if I get hurt. Rather, they care about the bucks it will cost them if I survive and have a disability as a result. Who usually pays for accessibility modifications (although the funding is, admittedly, hard to get)? BVR, community development block grants, insurance policies. I believe the government would save itself a lot of money by mandating basic access now.

Edward Steinfeld, Director, RERC on Universal Design at Buffalo

I agree with [Visitability advocate Eleanor Smith's] point about private homes being the fabric of a community. It is interesting that no one objects to fire code requirements that protect us from fires in our own or our neighbor's homes. Other

examples are habitability requirements making it illegal to have habitable rooms without windows, bedrooms below a certain size, or homes without heating systems or electricity. Building codes have historically regulated private environments for the good of the community. This started after the devastating London fire when it was deemed a necessity to design chimneys and roofs to reduce the spread of fires from one house to another.

With respect to Phil Dommer's points, the fine people of St. Paul are clearly doing great things - more power to them. But, I do not understand why Visitability ordinances should in any way restrict voluntary initiatives to build even more accessible housing. It would seem to me that such ordinances raise awareness and thus will help community advocates to get even more accomplished. In those communities where people are not as civic minded and perceptive as in St. Paul, we need ordinances to provide bottom line access.

Scott M. Shea, Architect

Ed and Eleanor's points are well taken. I've often made the argument that building codes limit, guide and determine what is designed and built every day. Access codes are really nothing out of the ordinary. I believe that people object to the inclusion of mandatory accessibility or visitability because these design features are not yet regarded as beneficial to all. They are seen as designed for a very small minority of folks. In my mind this gets at the core of the discriminatory attitudes that still prevail. The needs of these folks are not considered important to the community as a whole, because the community does not perceive itself as disabled or heading that way.

Perhaps as universal design becomes a greater marketing tool, this will change. 

Visitability is a civil and human right for people with mobility aids, allowing them to visit whomever invites them in.

Renee Riddle

To join the Visitability Listserv, check the frequently asked questions (FAQ) page at www.ap.buffalo.edu/~rercud.



News from the Center

As part of *Universal Design New York*, the RERC on Universal Design at Buffalo developed a series of icons, each symbolizing one of the seven principles of universal design.

Principle 1: Equitable Use- (the “equals” sign)

Principle 2: Flexibility in Use-(the expanding spring)

Principle 3: Simple and Intuitive- (the puzzle pieces)

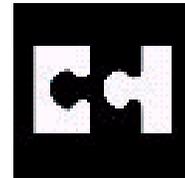
Principle 4: Perceptible Information- (the eye)

Principle 5: Tolerance for Error- (the rescue ring)

Principle 6: Low Physical Effort- (the feather)

Principle 7: Size and Space for Approach and Use- (different persons)

The icons seek to represent graphically the intent of each of the seven principles, giving the universal design novice a simple, handy, recognizable and memorable visual cue as to what aspect of universal design is best served by a specific exemplar or feature. The use of the icons is expected to shorten the learning curve connected with the concept of universal design and make the process of learning universal design more intuitive.



The use of the icons is expected to shorten the learning curve connected with the concept of universal design ...

To receive free of charge a poster or bookmark which features the icons, the principles, and short explanations of each principle, visit the RERC/UD web site at www.ap.buffalo.edu/~rercud. There is also a brief survey about the RERC and the services it provides to the community. 

UB Architecture Student Wins Honor Home Design

Susan Evenson, a first-year graduate student in the University of Buffalo's School of Architecture, recently won an award from the National Center for Seniors Housing Research. Evenson placed second in the Aging in Place: Urban/Suburban Competition. She also receives mention in *Spotlight on Ideas*, a nationwide publication highlighting the best of the designs submitted for this year's National Association of Home Builders Research Center competition.

Evenson's design of a suburban home for a couple in their 40s with two children below the age of 10 and a live-in nanny was runner-up in a field of 52 submitted designs. The competitors were required to include a home office setting able to support telecommuting by one or both of the adults. They also received points for incorporating elements of a “smart home” design. Evenson did so by the inclusion of voice activated intercom systems within the house.

Evenson was surprised and pleased to win the award, but in the true tradition of universal designers, is not quite happy with it, yet. She will continue to work on the project this semester — improving her design even further by incorporating elements of “green” design into the mix. 

Changes in Store for the Unlimited by Design Exhibit

The Unlimited by Design traveling exhibit being developed by the Rehabilitation Engineering Research Center on Universal Design at Buffalo (RERC) will soon be ready to come to a museum, university, or exhibition hall near you.

The original Unlimited by Design (UBD) exhibit premiered at the Cooper Hewitt National Design Museum in New York in the spring of 1999. The new traveling version of the exhibit will include local examples of universally designed products at every venue where the exhibition appears. The exhibit both explains universal design and illustrates that universally designed products can be found everywhere.

Under the new scheme, detailed material specifications and assembly instructions will be made available to the organizers. Local experts and museum personnel can acquire and assemble the exhibition framework locally — saving administration and transportation costs. At the conclusion of the exhibit, the framework could be kept for reuse, or disassembled into its components for storage or reconfiguration.

According to Drew Kelley, an industrial designer on the project team, “The bigger advantage here is that it will be a system flexible enough to meet the demands of almost any venue — and can be customized to the individual needs and the individual space of any exhibitor.”

For information on the exhibit, send an e-mail entitled “UBD Exhibition Request” to Steven Truesdale, coordinator of media and outreach at stt2@ap.buffalo.edu. 



Bathroom Designs Get National Boost

The “movable panels” and “movable fixtures” bathrooms designed by professor Abir Mullick, a project Director at the Rehabilitation Engineering Research Center on Universal Design at Buffalo (RERC) and Drew Kelley, an industrial design consultant, were mentioned in an article in the February 2002 issue of *Popular Science* magazine. In the “News Fronts” feature section, writer Dawn Stover called the bathrooms “... fit for a King, or a queen, or a prince, or anyone else...”

The two innovative bathroom designs -- both the product of “The Universal Bathroom,” a National Institute on Disability and Rehabilitation Research (NIDRR) funded grant completed three years ago -- offer the user substantial amounts of choice in creating his or her own environment. The bathroom accomplishes this by providing interchangeable panels with attached features such as showerheads, sinks, and handrails/hanging storage space. The bathroom owner can then customize the room for long-term use by rearranging the placement of bathroom elements prior to and during their installation.

The bathroom is designed such that the fixtures

bathroom designs were created using the smallest generally acceptable footprint for private bathrooms (5' x 8') with each design having common elements — such as flexible plumbing components and a slightly sloped, quick drain floor, designed to keep floors as dry as possible by delivering runoff quickly into a water trough beneath the floor for drainage. A CD-ROM that demonstrates the flexibility of both bathroom designs is available.

For more information, contact Mullick at amullick@ap.buffalo.edu. 

The design is expected to be attractive for use in hotels, where many different people use the same environment over a short period of time.

World Update, from page 5

of Disabled People in Brussels on Dec. 3. Sponsored by the European Commission and the European Disability Forum, the event was a focal point for the creation of a continuing, Europe-wide campaign for the adoption and implementation of Design-for-All. Design-for-All means designing, developing and marketing mainstream products, services, systems and environments to be accessible by as broad a range of users as possible and is the term more frequently used in Europe to describe universal design.

Hubert Froyen, professor of architecture in Belgium and director of education for the European Institute of Design and Disability, ended his summary at the roundtable with the following statement, “As an architect and as an academic, I’m more careful and more critical, not at all about the basic concept of Design for All, but about the optimal educational and professional strategies to follow.” He noted, “For design students, the ever expanding universe of fantasy and the growing technical possibilities to create virtual realities should be counterbalanced with powerful and elegant real world narratives and with design projects in respectful and in joyful collaboration with real users.”

The conclusions from the December meeting and the preparatory meetings held in Greece, United Kingdom, Luxembourg, Germany, Finland, Italy, Spain, and Denmark are available on the event website. The website also includes a discussion forum, e-cards that can be sent while promoting Design for All, and winners of the Breaking Barriers Design Awards. See: <http://eddp.edf-feph.org/edf/home.jsp?lang=en>. 



Photo by Prof. Beth Tauke

Users have substantial choice in creating his or her own bathroom environment.

move independently -- attached to tracks along (and within) the wall. Because of the independent movement, the bathroom offers the ability to change from one user to the next, on a daily basis. The design is expected to be attractive for use in hotels where many different people use the same environment over a short period of time.

To demonstrate the flexibility in the concept two



Website Spotlight: Online Resource for UD Education

A new universal design education website, created by North Carolina State University's Center for Universal Design, University at Buffalo's School of Architecture and Planning and the Global Universal Design Educator's Network, provides a dedicated forum for educators and students to support the teaching and study of universal design.

At www.udeducation.org, faculty members, students and professionals will find a broad range of resources, including instructional materials, illustrated examples of successful universal design, full text of classic universal design writings, annotated bibliog-

raphies of other materials and links to relevant resources. An educator's forum will provide opportunities for discussion. Currently the site is requesting material submissions for peer review and possible publication in an effort to share strategies for effective design. The detailed explanation of the principles of universal design—complete with associated guidelines—provides a good background for the novice and expert alike. Funded by the National Institute on Disability and Rehabilitation Research (NIDRR) of the U.S. Department of Education, the site also includes an online form of a letter of intent to submit materials.

Accessibility Resource CD

SourceAbility's "Accessibility Resource CD" provides a library of accessibility information on one CD-ROM—including Uniform Federal Accessibility Standards, Fair Housing Accessibility Guidelines and Americans with Disabilities Act requirements, publications and legal documents. Located by using the scroll bar or a word-specific search, the documents are available in HTML, text (ASCII) and Acrobat PDF. The CD also includes the UFAS Retrofit Manual, the Fair Housing Act Design Manual, the ADA Accessibility Guidelines checklist and several other publications as well as links to products and resources. To download a free demonstration and view minimum computer system requirements, visit www.sourceability.org/preview.htm. For more information, contact 888.504.7483 or visit www.sourceability.org.

Assistive Listening Devices for People with Hearing Loss: A Guide for Performing Arts Settings

As part of its initiative to create practical guides about accessible and universally usable arts programs and facilities, the John F. Kennedy Center for the Performing Arts in Washington, D.C. recently released a comprehensive technical assistance brochure on Assistive Listening Devices (ALDs). In addition to helping the performing arts/entertainment community understand their legal obligations to provide effective communication for patrons who are deaf or hard of hearing, the brochure features information on the basics of ALDs,

product features, and cleaning, storing and maintaining systems. The brochure also includes a directory of ALD manufacturers and vendors. To request a free copy in Adobe Acrobat PDF or text file attachment, send an e-mail to access@kennedy-center.org.

Designing Sidewalks & Trails for Access: Part II, Best Practices Design Guide

The U.S. Department of Transportation Federal Highway Administration (FHWA) has released the latest in a series of technical guides to assist in integrating bicycle and pedestrian routes into the transportation system while ensuring accessibility for all users. *Designing Sidewalks and Trails for Access: Part II, Best Practices Design Guide* has been issued to the field and state DOTs to help them design and construct accessible pedestrian facilities.

The information in this guide is based on current research and recognized best practices for accessible designs and usable information formats for people with mobility and sensory disabilities. It also incorporates the information in the September 1999 U.S. Access Board report of the *Regulatory Negotiation Committee on Accessibility Guidelines for Outdoor Developed Areas*.

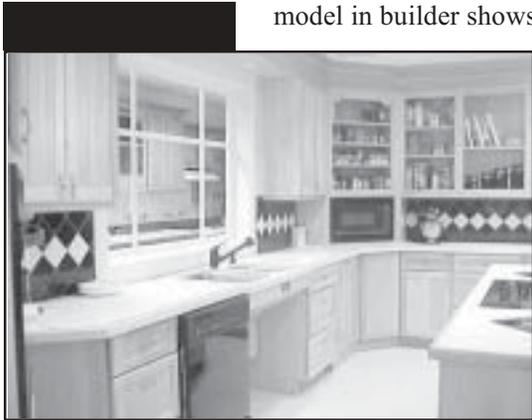
To obtain a copy, fax requests to the FHWA Report Center at 301.577.1421. Include name, address, telephone and fax number and the publication name and number (For Part II: FHWA-EP-01-027; For Part I: FHWA-HEP-99-006). 

The information in this guide is based on current research and recognized best practices for accessible designs and usable information formats for people with mobility and sensory disabilities.

Designing Sidewalks & Trails for Access: Part II, Best Practices Design Guide

Universal Design Kitchen, *from page 1*

“When our advisory board saw the equipment we were using to teach kitchen design, they thought it looked like an ancient physics lab,” said Julia Beamish, a certified kitchen designer who teaches the universal design component of the course. GE donated the universal kitchen, designed by Mary Jo Peterson for GE appliances, after first using it as a model in builder shows.



This universal kitchen, part of Virginia Tech's Center for Real Life Kitchen Design, is featured in an innovative hands-on continuing education workshop that includes universal kitchen design.

Beamish admits being surprised at the success of the course, “Explore Your Dream Kitchen.” “We asked ourselves: ‘What is the niche where we can help?’” explained Beamish about the course’s development. “We thought consumers would be eager to have this information.” Started three years ago, the workshop has grown from

two classes a year to four. It is targeted at people building or remodeling their kitchens and costs \$225 (\$400 for couples), meals included.

About 20 students participate in each session, which includes information about analyzing appliance needs and wants, cabinetry, principles of kitchen design and how to select kitchen materials. The students cook dinner one night using the model kitchens. This is an eye-opening experience as the students learn first-hand how appliances, design and materials actually work under real-life conditions. The bonus to the course is a 30-minute private consultation with one of the faculty about the student’s own kitchen project. “The students really like this unbiased help,” said Beamish.

Beamish promotes the idea of “aging in place” in her presentation about universal design features. While the universal kitchen obviously benefits the

elderly or people with disabilities, it also benefits pregnant women, families with small children and people at other life stages. Beamish said that about 10 to 15 percent of the students in the course are specifically interested in the universal design features. “These students may be having health problems and want to make sure they are on top of what is available to make their lives easier,” explained Beamish.

John Sasser of Chicago took the course with his wife in October when they were deep into planning a kitchen remodeling project. “We wanted to plan for accommodations whether they became necessary or not,” explained Sasser, who suffers from some health problems along with his wife. “We wanted to make sure we didn’t inadvertently design in limitations or make unnecessary impairments out of ignorance.”

The Sassers, who already have a raised dishwasher in their current kitchen, confirmed their ideas about universal design features as well as took away new information about material choices and work-flow issues. “I tended to think of accessibility in terms of wheelchair accommodations,” Sasser said. “Now I know about other accommodations that enlarge the scope of design issues.”

Features in the model universal kitchen include: a raised dishwasher, cabinets that can be raised and lowered, pull-out drawers and storage bins, a pull-down wall cabinet, lever handles on the faucets, open shelving for food products and good lighting. It also features an adjustable sink with flexible piping and open space underneath to accommodate a wheelchair. “This kitchen has a lot of flexibility and was designed to work across a life span,” said Beamish.

Sasser especially liked the adjustable sink in the universal kitchen. “I have a bad back and it was nice to be able to put it at just the right height,” he said.

Besides being used in this popular continuing education course, the model kitchens are used in undergraduate and graduate design courses as well. “Universal design is integrated into most of our classes,” said Beamish. “We try to sensitize students to universal design by building it throughout the curriculum and we encourage the students to include it in their projects.”

The universal kitchen is also being used in research for the National Kitchen and Bath Association. The research, in conjunction with a national consumer survey, involves reviewing kitchen design issues, especially for storage and work spaces.

For more information about the course, go to www.conted.vt.edu/drmkitch.htm. 

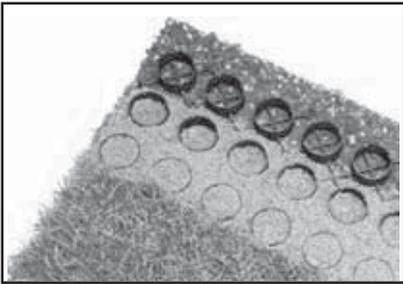
More Home Modification Resources

Some other resources that have or have had exhibits and learning centers in universal design and home modification include:

- www.homemods.org
- www.exnet.iastate.edu/Pages/housing/home-all-ages/overview.html
- www.maine.cite.org/unvdsngn.htm
- http://architecture.mit.edu/house_n/
- <http://sarasota.extension.ufl.edu/FHLC/flahouse.html>

Grasspave² for Foot and Vehicle Traffic Over Grassed Surfaces

Grasspave², from Invisible Structures Inc., is a porous paving technology that combines structural engineering and proven horticultural methods to allow live turf grasses to be used as traffic bearing surfaces. The interlocking flexible matrix, which is rolled out as a base and layered with Hydrogro fertilizer/polymer and concrete sand, provides sufficient soil



aeration, creates a free draining surface and enables the grass root system to remain intact and functional while supporting loads from foot traffic to heavy construction vehicles. Constructed from 100 percent recycled plastic, Grasspave² is lightweight for fast, low-cost installation, making it ideal for overflow parking, pedestrian access, infiltration basins, driveways and emergency and utility access. Grasspave² is currently being used at Miami's Orange Bowl Stadium car park.

ADA BigBell Wireless Alert System

Inclusion Solutions has developed a self-contained alert system to allow customers with disabilities to request additional assistance with entry into any storefront. ADA BigBell, which was created as a cost-effective wireless alternative for inaccessible entrances, is marked with the international symbol of accessibility and features an oversized touch-pad, making it



easy used and recognized by people with disabilities. Once the ADA BigBell has been mounted outside the storefront at the appropriate height, a simple touch of the 2 1/2"-wide button activates an interior chime that alerts store employees of customers needing assistance. The 3" by 5" interior chime receiver, which plugs into any standard A/C wall outlet, features nine ring tones, adjustable volume control, 32 receiver frequency codes and a 150-foot operating range. Durable enough for use in high-traffic areas, the ADA BigBell wireless alert system is easy to install and comes with a weather-resistant, exterior push-button; interior chime receiver; mounting adhesive and installation screws; double-sided directional signage and a window sticker.

Electronic Lever Hotel Guestroom Door Locks

Kaba Ilco (formerly Ilco Unican, Inc.) offers a variety of access control products for large and small facilities as well as hotels, motels, resorts and time share condominiums.

Its Oracode 4400 series requires guests to use a unique six-digit PIN, eliminating the need for keys or keycards. The changeable PIN can be obtained through phone, fax or Internet registration, making it easy to check in to extended stay and time share hotels, resorts and condos any time of the day or night without assistance. The simple, stylish and scalable Solitaire 710-II system, designed specifically for hotels,



works together with a self-contained Front Desk Unit (FDU), which creates unique magnetic strip keycards for each lock. The portable FDU can be transported to bus tours or conventions to register large groups or used as a point-of-sale terminal for posting charges to guest rooms. Both the Oracode 4400 and Solitaire 710-II easily replace existing door locks and feature large, easy-to-grasp lever handles.

Invisible Structures Inc.

(Grasspave²)
1597 Cole Boulevard
Building 15, Ste 310
Golden, CO 80401
Phone:
800.233.1510/
303.233.8383
www.invisiblestructures.com

Inclusion Solutions (ADA BigBell)

180 N. LaSalle St.,
Suite 3000
Chicago, IL 60601
Phone: 866.ADA.Kits
www.InclusionSolutions.com

Kaba Ilco

(Hotel guestroom door locks)
7301 Decarie Blvd.
Montreal, Quebec
H4P2G7. Phone:
877.468.3555
www.kaba-ilco.com

Sightlines, *from page 1*

According to architect Todd Anderson, designers today may use the Olympic settlement as a guide when designing new sports arenas most notably because, "It has numbers you can defend."

Stadium-Style Cinema Theaters

The introduction of stadium-style theaters has created new challenges for those interpreting sightlines. Over the last several years some large theater chains have been taken to court by individuals, organizations and the DOJ claiming their theaters violate the sightline requirements of the ADA. DOJ has argued, in friend of the court briefs and most recently as a party in a case, that the comparable lines of sight requirement calls for wheelchair seating to be placed in the stadium-style section of theaters and that particular viewing angles be provided. (See FedWatch, page 3.) Court decisions have varied. The following positions have been offered.

What DOJ Wants

In its Nov. 16, 1999, Notice of Proposed Rulemaking, the US Architectural & Transportation Barriers Compliance Board (Access Board) staked out DOJ's position, noting that "...DOJ has asserted in attempting to settle particular cases that wheelchair seating locations must: (1) be placed within the stadium-style section of the theater, rather than on a sloped floor or other area in the auditorium where tiers or risers have not been used to improve viewing angles; (2) provide viewing angles that are equivalent to or better than the viewing angles (including vertical, horizontal, and angle to the top of screen) provided by 50 percent of the seats in the auditorium, counting all seats of any type sold in that auditorium; and (3) provide a view of the screen, in terms of lack of obstruction (e.g., a clear view over the heads of other patrons), that is in the top 50 percent of all seats of any type sold in the auditorium."

DREDF's View

The Disability Rights Education and Defense Fund (DREDF) stated its position in a proposal submitted to the ANSI A117.1 Committee last year. DREDF called for wheelchair spaces to be located within the stadium seating area and within specific vertical and horizontal viewing angles. In addition, it recommends lines of sight comparable to those provided other members of the general public in terms of obstruction and distortion of images.

"The concept behind this proposal is that both the vertical and horizontal viewing angles must be the same angle, or a smaller angle, than the average viewing angle," according to DREDF. "Providing wheelchair seating with the average viewing angles (horizontal and vertical) ensures people with disabilities will at least have as good a viewing angle

as the average patron. Allowing the option of a smaller viewing angle could provide an even better seat. A smaller horizontal viewing angle means nearer the center, and a smaller vertical viewing angle means higher in the seating, where most people prefer to sit."

Theater Owners Weigh In

The National Association of Theater Owners (NATO) agrees that the issue of sightlines needs to be revisited but asserts that the discussion has evolved from talk of providing a simple unobstructed line of sight to evaluating the quality of the viewing experience. It argues that there currently are no meaningful measurement tools and no qualitative or quantitative data to set standards for what makes one seat in a small theater (300 seats or fewer) "better" than another.

In a letter to the ANSI A117 Committee, NATO's Washington Counsel Steven Fellman stated, "From a standards setting perspective, both ANSI and the building codes have always required that standards be based on empirical data."

Fellman wrote, "We don't even have generally accepted definitions of terms such as 'vertical angle of sight' or 'horizontal angle of sight' in a motion picture theatre setting because there has never been a definition of what is being measured, i.e., Are we measuring a person's ability to see the entire screen? Are we measuring an angle between a line drawn from the eye of a seated patron horizontally to the screen and a line drawn from the same eye to the top of the screen? How do we compare the experience of a person who views the screen from a seat at the top of a stadium style auditorium by looking down, versus a person who views the screen from a seat in the front of the auditorium by looking up? How do we factor in" consumer preferences.

The Challenge Ahead

Developing a consensus among the divergent points of view is the job of the ANSI A117.1 Assembly Task Group and its chairman Shariar Amiri, chief of the Division of Building Construction, Montgomery County, MD. He admits the committee work has been slowed by the lack of data and of consensus of "what is important." Following the February meeting it was decided that the task group would conduct a study to determine if there is a favorable sightline and if so, what it is.

"We want to establish some criteria to measure angles of sight," said Amiri. It is his hope that a consensus can be reached if "we can get people to agree on the parameters." Amiri is not daunted by the Herculean task ahead because he is confident that everyone involved "wants to do the right thing." ■

Allowing the option of a smaller viewing angle could provide an even better seat.

DREDF's Proposal to the ANSI A117 Committee



Printed on recycled paper with vegetable inks.

Events to be placed in the UDN Calendar must be submitted to the editor two months before the publication date.

May 13-15, 2002: *The US Architectural & Transportation Compliance Board* will hold its bi-monthly meeting in Washington, DC. Contact the board at 202.272.5434(v), 800.872.2253(v), 202.272.5449 (tty) or www.access-board.gov.

May 17, 2002: Scientific Contact Forum, Universal Design Education at the Royal Flemish Academy, Brussels, Belgium. Contact: universaldesign@archb.sintlucas.wenk.be.

June 8, 2002: *Challenges and Opportunities of an Ageing Population*, Hong Kong Convention & Exposition Centre, Wanchai, Hong Kong. Organized by the Elderly Commission of Hong Kong, this symposium will engage policy makers, business and community leaders and professionals in discussion of the implications of population ageing. Contact: hwbresearch@hwb.gov.hk.

June 27-July 1, 2002: *RESNA 25th International Conference on Technology & Disability Research, Design, Practice*, Minneapolis, MN. Hosted by the Rehabilitation Engineering and Assistive Technology Society of North America, this year's conference will include a Universal Design Research Symposium. Contact: www.resna.org.

July 22-26, 2002: *Union of International Architects Convention 2002*, Berlin, Germany. Contact: www.uia-berlin2002.com.

Aug. 8-11, 2002: *ADA/504 Coordinators and Accessibility Managers in the Cultural Arts Conference, Kennedy Center, Washington, D.C.* Sponsored by the John F. Kennedy Center for the Performing Arts, the conference will feature presentations and speakers who are experts on issues related to making cultural arts organizations accessible to individuals with disabilities. Contact: Betty Siegel at 202.416.8727(v), 202.416.8728(tty), or access@kennedy-center.org.

Oct. 18-19, 2002: *Design+Technology+Users: Design that Works for Everyone*, Rhode Island School of Design (RISD), Providence, RI. Co-sponsored by Adaptive Environments and RISD. Contact: Lenie Kuit, lkuit@adaptenv.org.

Oct. 27-30, 2002: *6th Global Conference Maturity Matters*, Burswood International Conference Centre, Perth, Western Australia, sponsored by the International Federation on Ageing. Contact: IFA@congresswest.com.au.

Nov. 30-Dec. 4, 2002: *International Conference for Universal Design in Japan 2002, Yokohama, Kanagawa, Japan*. The conference will feature examples of universal design in Japan and the Far East, in the areas of products, housing, buildings, transportation and information technology. Contact: www.ud2002.org/index-e.html.

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