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May 15, 2009 • Las Vegas, NV • 1 p.m. – 2 p.m.
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Universal Design: The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. *Ron Mace*

Accessible Design: Meets prescribed requirements set forth by the ADA or other mandatory requirements found in state, local, and model building codes.

Adaptable Design: Can be readily adjusted in a short time by unskilled labor without involving structural or finished material changes.

Research Findings: Travelers with Disabilities
- Open Doors Organization – July 2005
- Sample - 1,373 adults with disabilities
- 69% of adults with disabilities (21 million) have traveled at least once in the past two years
    - 3.9 million for business
    - 20 million for pleasure
    - 4.4 million for business/pleasure
- 43% use at least one assistive device, most commonly to assist with mobility
- 52% have stayed in hotels, motels or inns in the past two years (16.3 million)
- Typically stay in hotels 3 times every two years (or 48.9 million visits)
- 21% stay in a hotel 4 or more times every two years
- Spends $76 per day at hotels
- 56% of trips involve a hotel stay
- 60% Encounter Obstacles When Staying at Hotels
    - Physical Obstacles (48%):
        - Doors that are heavy or hard to open (36%)
        - Not enough room to maneuver in hotel rooms and/or bathrooms (20%)
        - Inaccessible shower or bath facilities (19%)
- 71% dine out at least once a week
- 64% encounter obstacles at restaurants
    - Physical Obstacles (62%):
        - Not enough room between tables (40%)
        - Entry doors that are difficult to open/maneuver (33%)
        - Steps at entrance or within restaurant (28%)
    - Service/Personnel Obstacles (27%):
        - Lack of availability of desired seating (20%)
- The 2002 research showed adults with disabilities were spending $13.6 billion annually on travel.
- Revenues from this market could easily double if certain needs were met and obstacles removed.

What is good design?
Design is not just what it looks like and feels like. Design is how it works.
Steve Jobs, Co-founder, Apple Inc.

Design is directed toward human beings. To design is to solve human problems by identifying them and executing the best solution. - Ivan Chermayeff, architect

Important Dimensions for Space Planning
- 5' turning diameter for wheelchair
- 30" X 48" – minimum approach in front of a sink & toilet
- Anthropometrics - Average adult in wheelchair
    - Vertical reach range – 18" - 48" high
    - Chair seat level – 20" high
    - Eye level – 4' high

Floor Surfaces
- Carpet
    - The maximum pile thickness – 1/2 inches
    - Firm or no cushion, pad or backing
    - Level or textured loop, level cut/uncut pile texture
- Slip-resistant tile and marble
- Hardwood flooring
- Linoleum

Making Accessible Rooms "Usable" for Wheelchair Users
- Lamps
- Phones
- Coffee pot
- Alarm clock/radio
- Iron & ironing board
- Computer cords/electric outlets
- Blankets
- Closet rods
- Bed
- Sink
- Towels
- Hair dryer
- Toiletries
- Showerhead
- Shower & bench/chair
- TV remote control
- Window shade control
- HVAC thermostat
- Desk

Items to Consider Supplying in Accessible Rooms
- Adding power strips on the desk to ensure that outlets are accessible
- Placement of furniture to allow wheelchair access to all areas of the room
- Provide a card explaining why things are a bit different from standard rooms

Bed Considerations
- Space on the side for a wheelchair – 36"
- Height of a wheelchair seat (20")= height of mattress
- Space underneath for legs of a mechanical lift

Swimming Pools
- Include a lift and handrails to all swimming pools

Restaurants
- Include 36" aisle width

Doorway Considerations

- Minimum clear door width 32". Prefer 36" wide door.
- Level thresholds
- 5# of Pressure on Door Closer

Universal Design Shower Features
- Adjustable height bar for shower nozzle
- Hand held nozzle
- Padded transfer bench
- Bench within reach of faucet
- Lever handle faucet
- Grab bars
- Shelves for toiletries
- Flexible water dam
- Ceramic tile floor
- Wide doorway
- Curbless
- Sized for wheelchair transfer
- Shower curtain to contain water and heat

Universal Design Bathroom Features
- Sink height maximum 34" from floor
- Adjustable height sink - optional
- Knee space under sink
- Mirror at proper height from a seated position
- Mirror adjustable tilt - optional
- Lever faucet handle
- Comfort height toilet – 17" to19" from the floor
- Grab bars with wall reinforcement needed on walls
- Covered, wrapped or recessed plumbing under sink

Words to Better Communicate About the Concept of Universal Design
- Ease of living
- Comfortable
- Sustainable
- Safer
- Easier to access
- More ergonomic
- Adaptable
- Convenient
- Inclusive
- Flexible

Overcoming set standards: How do we eliminate the fear factor?
- Take responsibility and become the teacher
- Develop relationship with client
- Understand and sculpt interior space
- Become a leader & keep learning
- Design with a renewed conviction!

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RESOURCES
ACCESSIBLE DESIGN PUBLICATIONS SPECIFIC TO THE HOSPITALITY INDUSTRY

Americans with Disabilities Act Publications
www.ada.gov Available free to download

For any questions about the ADA, contact your regional Disability and Business Technical Assistance Center (DBTAC) at: 800-949-4232 v/tty www.adata.org. For further information call the Department of Justice at 800-514-0301 v/tty or go to the ADA home page.

1. ADA Standards for Accessible Design
www.ada.gov/stdspdf.htm

The PDF version of the 88 page ADA Standards contains the full formatted text and graphics, as published in the Code of Federal Regulations, complete with links to figures, graphics and cross-referenced sections, making it easier for users to quickly read and understand related requirements. This is the current enforceable standards, adapted by the U.S. Department of Justice on July 1, 1994.

There are sections on accessible areas and spaces including: accessible routes, door widths, ground and floor surfaces, parking lots, ramps, restrooms, bathrooms, visual and audio alarms, stairs, elevators, signage, drinking fountains, curb ramps, doors and windows. There are separate sections on restaurants and cafeterias, and accessible transient lodging.

2. Proposed ADA Standards for Accessible Design
www.ada.gov/NPRM2008/ada_standards/proposedadastds.htm

Based on ADA Accessibility Guidelines. Published in the *Federal Register* July 23, 2004 and amended August 5, 2005. This document contains scoping and technical requirements for accessibility to sites, facilities, buildings, and elements by individuals with disabilities. The requirements are to be applied during the design, construction, additions to, and alteration of sites, facilities, buildings, and elements to the extent required by regulations issued by Federal agencies under the Americans with Disabilities Act of 1990 (ADA).

The proposed changes to the ADA guidelines are highlighted. There will be a ruling on these changes in the future. There is information about swimming pools in the chapter on Recreational Facilities. There is information about Transient Lodging Guest Rooms in the section on Special Rooms, Spaces, and Elements.

3. Readily Achievable Barrier Removal and Van-Accessible Parking Spaces
www.ada.gov/publicat.htm

A visual guide with regulations for accessible parking spaces.

4. Common ADA Errors and Omissions in New Construction and Alterations
www.ada.gov/publicat.htm

This 13-page document lists a sampling of common accessibility errors or omissions that have been identified through the Department of Justice's ongoing enforcement efforts. The significance of the errors is discussed and references are provided to the requirements of the ADA Standards for Accessible Design.

5. ADA Business Briefs
www.ada.gov/publicat.htm

Short publications explaining specific ADA issues that are designed to be easily printed and distributed to employees.

      a. Communicating with Guests Who are Deaf or Hard of Hearing in Hotels, Motels, and Other Places of Transient Lodging

      b. Restriping Parking Lots

      c. Service Animals

6. Commonly Asked Questions about Service Animals
www.ada.gov/publicat.htm

A 3-page publication explaining the requirements of the ADA regarding animals that accompany and provide services for a person with a disability.

7. Common ADA Problems at Newly Constructed Lodging Facilities
www.ada.gov/publicat.htm

An 11-page document lists a sampling of common accessibility problems at newly constructed lodging facilities that have been identified through the Department of Justice's ongoing enforcement efforts.

8. Five Steps To Make New Lodging Facilities Comply With The ADA
www.ada.gov/publicat.htm

A 3-page document highlighting five steps that owners, operators, and franchisors can take to make sure that new lodging facilities comply with the ADA.

9. Americans with Disabilities Act Checklist for New Lodging Facilities
www.ada.gov/publicat.htm

This 34-page checklist is a self-help survey that owners, franchisors, and managers of lodging facilities can use to identify ADA mistakes at their facilities.

10. Americans with Disabilities Act Guide for Places of Lodging: Serving Guests Who Are Blind or Who Have Low Vision
www.ada.gov/publicat.htm

A 12-page publication explaining what hotels, motels, and other places of transient lodging can do to accommodate guests who are blind or have low vision.

11. ADA Checklist for Readily Achievable Barrier Removal –
www.ada.gov/checkweb.htm

This 15-page document is to check on accessibility problems and solutions in: approaches and entrances, access to goods and services, access to rest rooms, and any other measures necessary (Ex. Drinking fountains and telephones). Includes the ADA dimensional standards, and gives ways to achieve these standards.

DBTAC: Mid-Atlantic ADA Center Publications and Links
www.adainfo.org/hospitality Available free and ready to download

This Hospitality Initiative contains an extensive collection of free downloadable publications on providing access to hospitality interiors. There are also many links to other web sites with information to assist hospitality management, architects and interior designers.Titles include:

1. **Hotel Customer Service Training Package** – includes PowerPoint program, script, handout and answers to frequently asked questions.

2. **Access to Restaurants**

3. **Restaurants & Bars ADA Resource List**

4. **Access to Hotels**

5. **Hotels & Motels ADA Resource List**

6. **Signs of Hospitality Poster**

7. **Resources for Planning Accessible Meetings**

8. **ADA Quick Tips: Tax Incentives**

United States Access Board Publications
www.access-board.gov Available free to download

1331 F Street, NW, Suite 1000
Washington, DC 20004-1111
(202) 272-0080 (v)   (202) 272-0082 (TTY)   (202) 272-0081 (fax)
(800) 872-2253 (v)   (800) 993-2822 (TTY)

Mission
The Access Board is an independent Federal agency devoted to accessibility for people with disabilities. Created in 1973 to ensure access to federally funded facilities, the Board is now a leading source of information on accessible design. The Board develops and maintains design criteria for the built environment, transit vehicles, telecommunications equipment, and for electronic and information technology. It also provides technical assistance and training on these requirements and on accessible design and continues to enforce accessibility standards that cover federally funded facilities.

The Board is structured to function as a coordinating body among Federal agencies and to directly represent the public, particularly people with disabilities. Half of its members are representatives from most of the Federal departments. The other half is comprised of members of the public appointed by the President, a majority of whom must have a disability.

1. Americans with Disabilities Act Accessibility Guidelines (ADAAG) Checklist for Buildings and Facilities
www.access-board.gov/adaag/checklist/a16.html

This checklist has been prepared to assist individuals and entities with rights or duties under Title II, and Title III of the Americans with Disabilities Act (ADA) in applying the requirements of the Americans with Disabilities Act Accessibility Guidelines (ADAAG) to buildings and facilities subject to the law. The checklist presents information in summary form on the Department of Transportation (DOT) and the Department of Justice (DOJ) regulations implementing the ADA. The checklist must be used with the DOT and DOJ regulations and ADAAG to ensure accuracy.

This checklist is intended for technical assistance purposes only. Individuals who use this checklist should be aware that the Department of Justice and the Department of Transportation, not the U.S. Architectural and Transportation Barriers Compliance Board (Access Board, are responsible for the enforcement of Titles II and III of the ADA. Use of this checklist does not constitute a determination of your legal rights or responsibilities under the ADA, and it is not binding on the Department of Justice, Department of Transportation, or the Access Board.

This checklist contains 31 survey forms including: parking, curb ramps, entrances and exits, stairs, building lobbies and corridors, bathtubs and showers, toilet rooms and bathrooms.

2. About the Architectural Barriers Act and Other Disability Rights Laws – **http://www.access-board.gov/about/aboutABA/brochure.htm**

A brief overview of the Architectural Barriers Act, U.S. Access Board, ADA, Rehabilitation Act, Fair Housing Act, Air Carrier Access Act, and the Voting Accessibility for the Elderly and Handicapped Act.

3. Accessible Swimming Pools and Spas
www.access-board.gov/recreation/guides/pools.htm

The Americans with Disabilities Act (ADA) is a comprehensive civil rights law that prohibits discrimination on the basis of disability. The ADA requires that newly constructed and altered state and local government facilities, places of public accommodation, and commercial facilities be readily accessible to, and usable by, individuals with disabilities. The ADA Accessibility Guidelines (ADAAG) is the standard applied to buildings and facilities. Recreational facilities, including swimming pools, wading pools, and spas, are among the facilities required to comply with the ADA.

The Access Board issued accessibility guidelines for newly constructed and altered recreation facilities in 2002. The recreation facility guidelines are a supplement to ADAAG. As a supplement, they must be used in conjunction with ADAAG. References to ADAAG are mentioned throughout this summary. Once these guidelines are adopted by the Department of Justice (DOJ), all newly designed, constructed and altered recreation facilities covered by the ADA will be required to comply.

This guide is intended to help designers and operators in using the accessibility guidelines for swimming pools, wading pools, and spas. These guidelines establish minimum accessibility requirements for newly designed or newly constructed and altered swimming pools, wading pools, and spas. This guide is not a collection of swimming pool or spa designs. Rather, it provides specifications for elements within a swimming pool or spa to create a general level of usability for individuals with disabilities. Emphasis is placed on ensuring that individuals with disabilities are generally able to access swimming pools and spas and use a variety of elements. Designers and operators are encouraged to exceed the guidelines where possible to provide increased accessibility and opportunities. Incorporating accessibility into the design of a swimming pool or spa should begin early in the planning process with careful consideration to the accessible routes and means of entry into the water.

4. Swimming Pool Accessibility
www.access-board.gov/research/Pools/poolsreport.htm

This project was conducted for the U.S. Architecture and Transportation Barriers Compliance Board to identify and evaluate methods and standards related to enabling access to swimming pools by people with disabilities. It focused on the appropriateness, independent use, degree of consistency with existing building standards, level of safety, and impact on pool design.

5. Recommendations for Accessibility Guidelines for Passenger Vessels: Final Report December 2000
www.access-board.gov/pvaac/commrept/index.htm

This report represents the recommendations of the Passenger Vessel Access Advisory Committee (PVAAC) to the US Access Board. These recommendations will assist the Board in developing a rule under the Americans with Disabilities Act which will propose accessibility guidelines for the design, new construction and alteration of passenger vessels.

6. Access for Persons with Disabilities to Passenger Vessels and Shore Facilities
www.access-board.gov/research/Pass-Vessels/report.htm

This report, undertaken on behalf of the Office of Environment, Energy, and Safety, Office of the Secretary of Transportation (OST) and the Architectural and Transportation Barriers Compliance Board (ATBCB), is an assessment of the feasibility of implementation of the Americans with Disabilities Act of 1990 (ADA) on the passenger vessel industry. The results are findings on technical feasibility and a set of cost data based on assumed access solutions. This exploration of implementation issues will be, in part, the basis for future decision making by OST in the matter of access to waterborne transportation and accommodation assets.

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7. Visual Alarms
www.access-board.gov/adaag/about/bulletins/alarms.htm

A brief overview of the technical requirements of providing visual alarms in sleeping rooms. The products shown in this guide are only intended to serve as examples to illustrate the accessibility guidelines in the ADA.

8. Ground and Floor Surfaces
www.access-board.gov/adaag/about/bulletins/surfaces.htm

A technical bulletin that explores the characteristics of an accessible route and components of flooring that makes it slip resistant as well as easier and safer to travel for persons who use wheelchairs, canes or walkers.

9. Parking
www.access-board.gov/adaag/about/bulletins/parking.htm

 A technical bulletin that specifies the requirements for an accessible parking lot. This includes information about passenger loading zones and signage.

10. A Review of Technical Requirements for Ramps
www.access-board.gov/research/Ramps/report.htm

 An extensive study of the requirements to construct ramps and the population of people with disabilities who are dependent on ramps.

11. Best Practices in the Design of Toileting and Bathing Facilities for Assisted Transfers
www.access-board.gov/research/Toilet-Bath/report.htm

The result of a research study that sought to identify and analyze best practice exemplars of design solutions that accommodate assisted use of toilet and bathing fixtures.

Miscellaneous Publications on Hospitality Design and the ADA

1. Accommodating All Guests: The Americans with Disability Act and the Lodging Industry
www.universaldesign.com/information/Accomodating%20All%20Guests.pdf

Free downloadable 73 page book by John Salmen. A 1992 comprehensive publication of The American Motel & Hotel Association.

2. Top 10: What the Lodging Industry Needs to Know About the New ADA/ABA-AG
www.universaldesign.com/information/hospitality.php

The US Department of Justice has proposed adopting the Americans with Disabilities Act/Architectural Barriers Act Accessibility Guidelines (ADA/ABA-AG) in 2009 as the new ADA Standards for Accessible Design. While nothing is set in stone, the 10 issues listed will likely have a significant effect on lodging and other types of facilities. Article Source: Universal Designers and Consultants

3. The Sign Biz Network
Signage Guidelines: ADA Signs and Wayfinding
www.signbiznet.com/ada.htm

This web site includes specific guidelines and specifications in order to comply with ADA regulations regarding the placement and design of signage within rooms, spaces and corridors,

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Open Doors Organization
http://opendoorsnfp.org/_wsn/page3.html

Research conducted in 2002 and 2005 on spending patterns for people with disabilities and the size of this population that travels and eats out. "Research among Adults with Disabilities: Travel and Hospitality"

Europe for All
www.europeforall.com/about.seam?conversationPropagation=end&conversationId=161648

The aim of this organization in Europe is to enable better communications between tourism providers and their customers, especially by providing accurate and reliable information about the accessibility of venues and services. This link contains two documents:

> **1. Self-Assessment Questionnaire**
> For owners/managers of hotels and self-catering establishments to be used to evaluate the accessibility of these locations.

> **2. Photo and Measurement Guide**
> Provides advice about how to take the measurements which are required in the questionnaire. Experience has shown that these are the key measurements which users with various accessibility requirements need to know in order to judge the suitability of place to stay. The measurements will used to inform customers about access to buildings, rooms and facilities at your establishment. This guide is to be used in conjunction with the self-assessment questionnaire for hotels and self-catering accommodation establishments.

Accessible Tourism
http://accessibletourism.ning.com/

A network for small and medium-sized enterprises in tourism and travel, helping to make business accessible, sustainable, and competitive.

The Rolling Rains Report
www.rollingrains.com/about/

A website for the travel and hospitality industry. It provides resources on Inclusive Tourism - a concept arising from the vigor of a global disability community that both enjoys and asserts the right to full social inclusion. Inclusive Tourism is the systematic application of Universal Design by the travel and hospitality industry at every stage of a product, service, or policy life cycle.

Energy Conservation Products & Resources, American Hotel and Lodging Educational Institute
www.ei-ahla.org/content.aspx?id=21198&terms=accessibility+guide

> **1. The Energy Management and Conservation Guide -** Details the steps necessary to initiate, implement, and maintain a cost-effective energy management program.

> **2. Energy-$aving Tips for Lodging Video** - Demonstrates the value of strategic energy management when used by a lodging property.

> **3. Greening Your Property** - A guide that Includes cost/value worksheets and suppliers of environmentally friendly products.

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Lighting Level Recommendations for Hotel Guestrooms

Determining the specific illumination (footcandle) levels for hotel guestrooms is highly variable and dependent upon the task being performed. As a result, a high level of variable control for guestroom and bathroom lighting is the most appropriate approach, as it allows the guest to determine the best lighting for the task at hand.

That said, the parameters for minimum illumination levels for various tasks is as follows:
  Public spaces: 3fc
  Performance of visual tasks of high contrast and large size: 30 fc
  Performance of visual tasks of high contrast and small size: 50 fc
  Performance of visual tasks of low contrast and large size: 50 fc
  Performance of visual tasks of high contrast and large size: 100 fc
(SOURCE: IESNA reference guide, 10-13, Figure 10-9)

In a guestroom setting, it is rare to need more than 30 fc. However, individuals with limited vision may require additional light, and many individuals actually prefer lighting levels below those recommended by IESNA.

Flexibility in use: Different individuals have different lighting needs. The lighting in the space should be flexible enough to accommodate any preference.
How to Achieve:
- Provide multiple control options, manual wall controls, RF remote control and occupancy sensor control.
- Incorporate drapery into the control system
- Provide dimmers

Even illumination: Harsh glare and dark shadows can be uncomfortable, and potentially dangerous, for individuals with limited vision. Lighting intensity should be balanced throughout the space.
How to Achieve:
- Design lighting to provide balanced illumination throughout the space. Set a "Welcome" scene so that when the guest enters the room, the lighting comes on to this level.

Safety: Lighting is a core component of the safety of a space. Design lighting operate automatically as needed, and to integrate with security systems
How to Achieve:
- Install occupancy sensors
- Turn on all lights in a space during an emergency, and/or directing occupants to the exits
- Provide night lights for way finding to the bathroom and in the bathroom
- Provide light switches by the bed

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