

Beyond the ADA: Universal Design concepts in commercial facilities

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Course Description

The ADA Design guidelines have been mandatory for commercial facilities and public buildings since 1991. But those guidelines are only the minimum requirements for persons with disabilities. The 7 Principles of Universal Design are more inclusive and could easily be incorporated as well. This course will delve into the differences between the ADA and Universal Design and how a commercial facility can incorporate both into their spaces.



Learning Objectives

1. Learn the basics of the 2010 ADA Standards for Accessible Design.
2. Learn the basics of the 7 principles of Universal Design.
3. Understand how both guidelines affect the environment of the disabled community.
4. Understand how to incorporate both into designs of commercial facilities.





Marcela Abadi Rhoads, AIA RAS
Owner, Abadi Accessibility

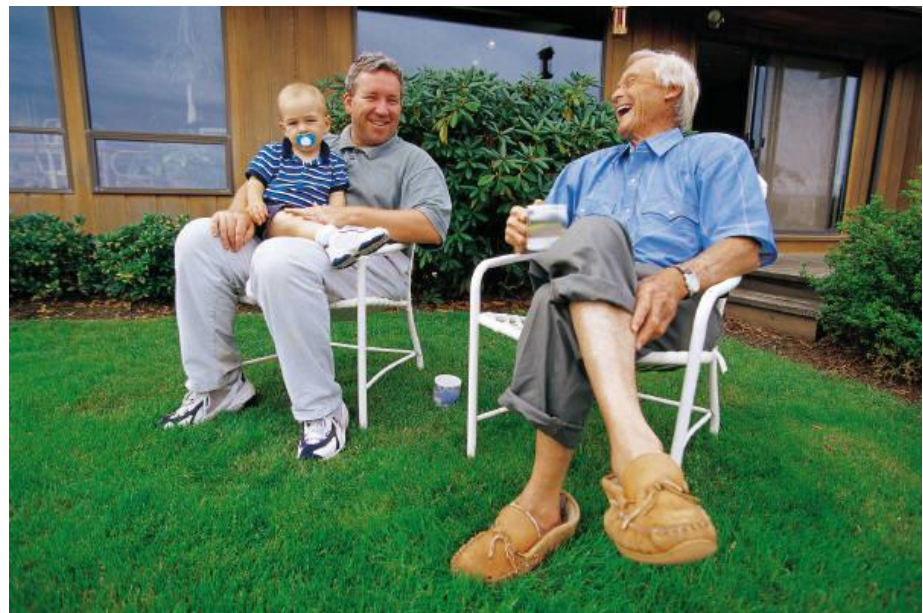
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Laura Montllor, AIA
Architect, HomeFreeHome.org
Moderator

By the end of the 20th century, 5.2 million Americans had a disability.

As our population ages and people live longer this number will grow.



History of Disability Laws



Disability Rights Movement

- 1964 Civil Rights Act for racial minorities
- 1968 Architectural Barriers Act
- Section 504 of the Rehabilitation Act of 1973
- Fair Housing Act of 1988 included disabled
- 1990 Americans with Disabilities Act



The Americans With Disabilities Act

The ADA is a civil rights law which made it possible for individuals with disabilities to become more productive and independent members of our communities.



ADA - American with Disabilities Act

- 1990: The Americans with Disabilities Act (ADA) was signed into law by George H.W. Bush
- 1991: ADA Accessibility Design Guidelines (ADAAG) were published by U.S. Access Board
- 2004: ADA was modified to harmonize with model codes
- 2010: Department of Justice adopted it and created the 2010 ADA Standards for Accessible Design



ADA - American with Disabilities Act

protects persons with disabilities against discrimination in:

Title I – Employment

Title II – State and Local Government Programs

Title III – Public Accommodations and Commercial Buildings

Title IV – Telecommunications

Title V – Miscellaneous (Equivalent facilitation of States)

The 2010 ADA Standards

Specifications for accessible design, organized in ten chapters

- Chapter 1 and 2 and scoping (*what is required to comply*)
- Chapters 3-10 are Technical Standards (*how to comply*)
 - Building block dimensions, ranges, heights, widths
 - Accessible routes
 - Parking
 - Plumbing fixtures
 - Communication features
 - Special rooms
 - Built in elements
 - Recreational facilities

Applying the ADA

- Architects began implementing the ADA
- Accessible features were “special,” more expensive, and usually ugly.
- Environmental changes for the disabled benefited everyone.
- Universal Design movement began to emerge

Universal Design

- Not a design guideline
- It is an approach to design
- design of products and environments for everyone, regardless of age, size, ability or disability.



History of Universal Design

- 1985: North Carolina State University School of Design
 - Coined by architect Ronald Mace
- 1988: Center for Universal Design created
- Revolutionized products and environments
- Developed 7 principles for Universal Design

The Principles of Universal Design

The Seven Principles of Universal Design



Equitable Use

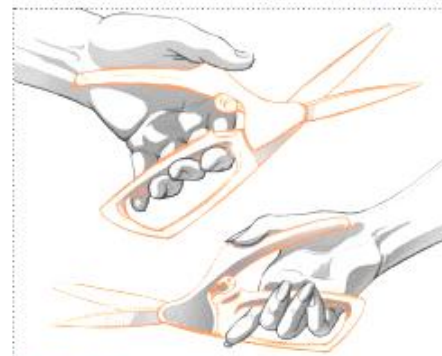
The design is useful and marketable to people with diverse abilities.

- 1a. Provide the same means of use for all users; identical whenever possible; equivalent when not.

Avoid segregating or stigmatizing any users.

- 1b. Provisions for privacy, security, and safety should be equally available to all users.

- 1d. Make the design appealing to all users.



Flexibility in Use

The design accommodates a wide range of individual preferences and abilities.

- 2a. Provide choices in methods of use.
- 2b. Accommodate right- or left-handed use.
- 2c. Facilitate the user's accuracy and precision.
- 2d. Provide adaptability to the user's pace.



Simple and Intuitive Use

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or education level.

- 3a. Eliminate unnecessary complexity.
- 3b. Be consistent with user expectations and intuition.
- 3c. Accommodate a wide range of literacy and skills.
- 3d. Arrange information consistent with its importance.
- 3e. Provide effective prompting and feedback during and after task completion.



Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

- 4a. Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
- 4b. Provide adequate contrast between essential information and its surroundings.
- 4c. Maximize "legibility" of essential information.
- 4d. Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).
- 4e. Provide compatibility with a variety of techniques or devices used by people with sensory limitations.



Tolerance for Error

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

- 5a. Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated.
- 5b. Provide warnings of hazards or errors.
- 5c. Provide fail-safe conditions.
- 5d. Discourage actions that require vigilance.



Low Physical Effort

The design can be used efficiently and comfortably with a minimum of fatigue.

- 6a. Minimize the required strength.
- 6b. Minimize the required precision.
- 6c. Minimize the required speed.
- 6d. Minimize sustained physical effort.



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.

- 7a. Provide a clear line of sight to important elements for any seated or standing user.
- 7b. Make reach to all components comfortable for any seated or standing user.
- 7c. Accommodate variations in hand and arm strength.
- 7d. Allow for the use of assistive devices or personal assistance.

Universal Design Principles, Version 2.0 - 4/1/97

© 1997: Center for Universal Design, North Carolina State University

Funded by the National Institute on Disability and Rehabilitation Research

Compiled by advocates of universal design, listed in alphabetical order:

Betty Rose Connell, Mike Jones, Ron Mace, Jim Mueller, Abir Mullick, Elaine Ostroff, Jon Sanford, Ed Steinfeld, Molly Story & Gregg Vanderheiden.

Principle 1: Equitable Use

The design is useful and marketable to people with diverse abilities



Principle 1: Guidelines

1a: Provide the same means of use for all users

ADA: Equal treatment for all









ENTRANCE





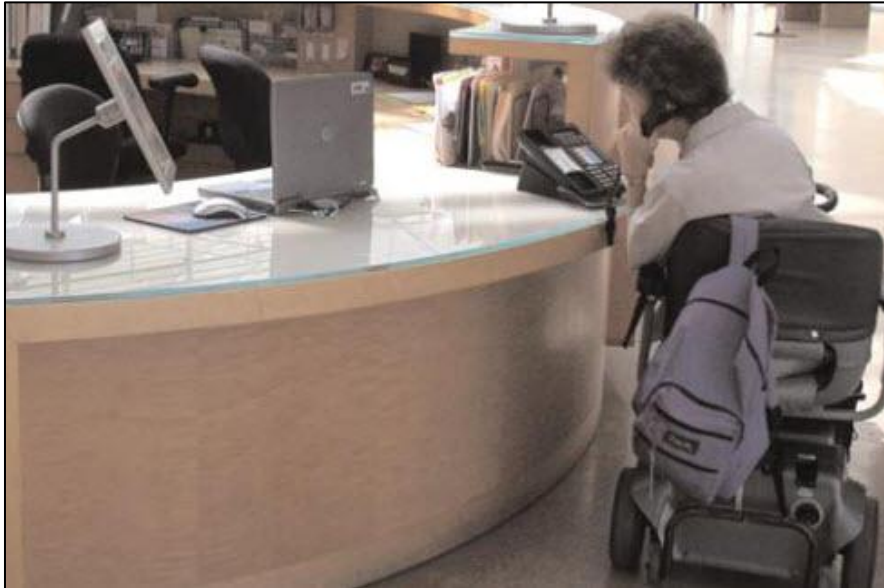






Principle: 1 Guidelines

UD 1b. Avoid segregating or stigmatizing any users





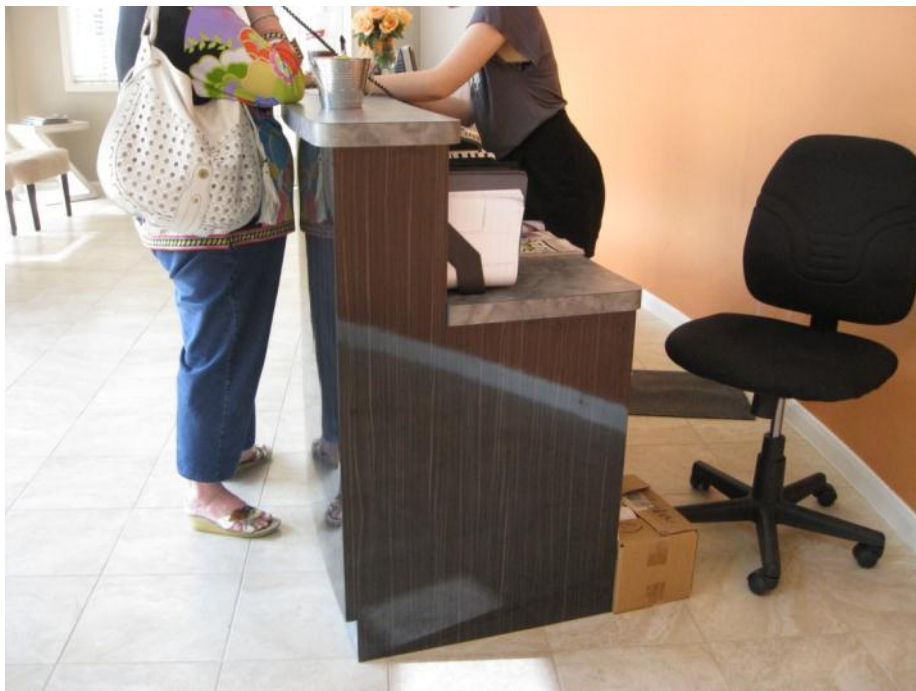




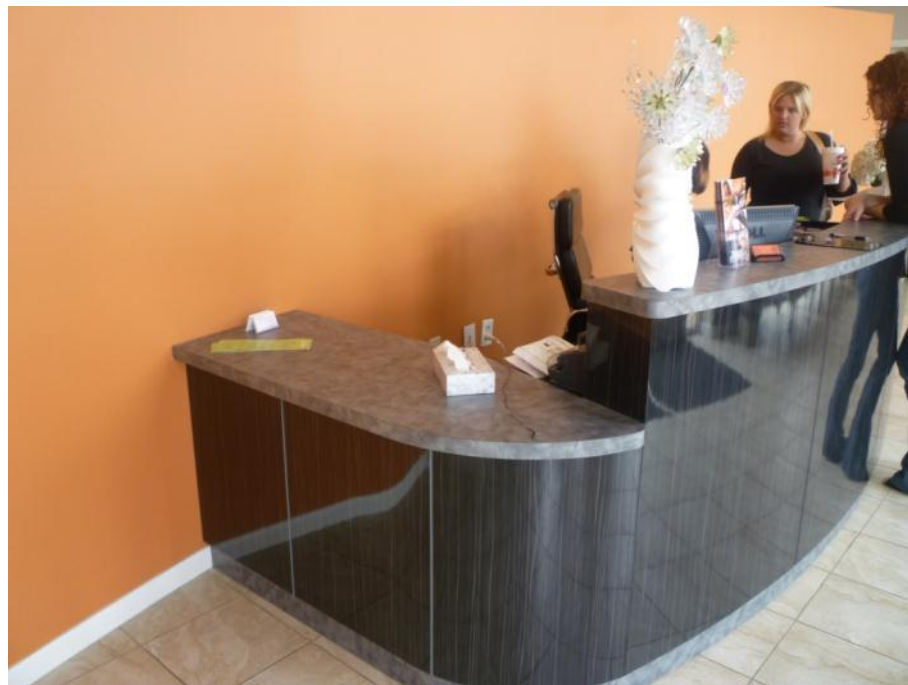
Bus Stop







Before



After





Principle 1: Guidelines

1c. Provisions for privacy, security, and safety should be equally available to all users



Principle 1: Guidelines

1d. Make the design appealing to all users







Principle 2: Flexibility in Use

The design accommodates a wide range of individual preferences and abilities.



Principle 2: Guidelines

2a. Provide choice in methods of use











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Principle 2: Guidelines

2b. Accommodates right or left handed access and use



Principle 2: Guidelines

2c. Facilitate the user's accuracy and precision















Principle 2: Guidelines

2d. Provide adaptability to the user's pace



Principle 3: Simple and Intuitive Use

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.



Principle 3: Guidelines

3a. Eliminate unnecessary complexity



Table lamp
GRÖNÖ

Frosted glass

► Gives a soft mood light.

\$7⁹⁹



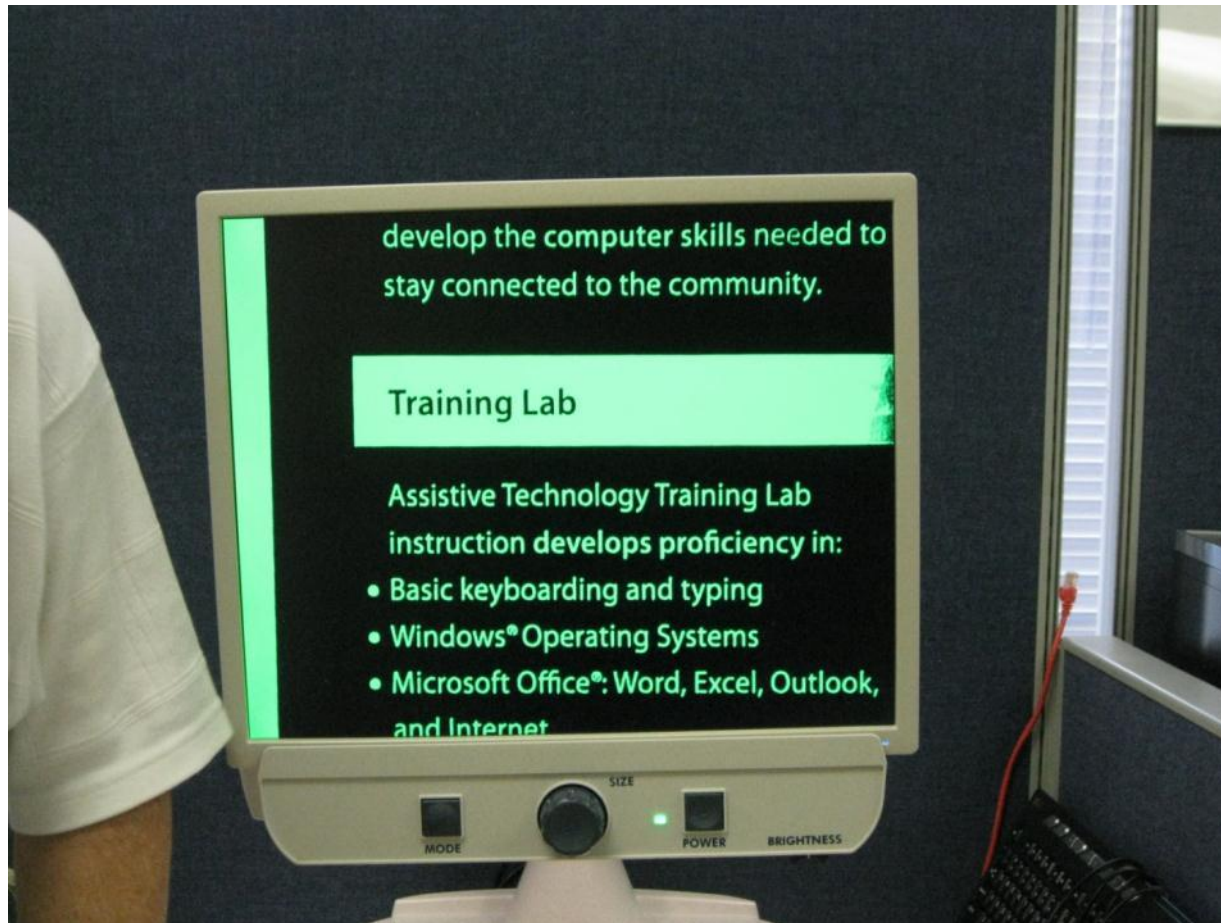
Principle 3: Guidelines

3b. Be consistent with user expectations and intuitions



Principle 3: Guidelines

3c. Accommodate a wide range of literacy and language skills



Principle 3: Guidelines

3d. Arrange information consistent with importance



Principle 3: Guidelines

3e. Provide effective prompting and feedback during and after task completion



Principle 4: Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.



Principle 4: Guidelines

4a. Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information

ADA: Signage should have verbal and tactile characters



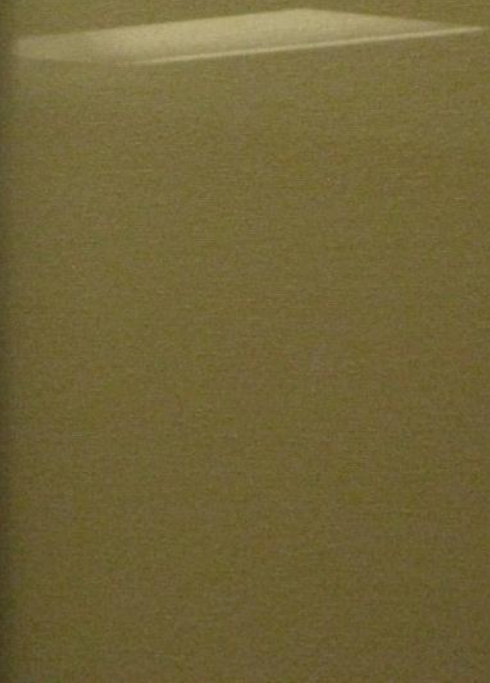




Principle 4: Guidelines

4b. Provide adequate contrast between essential information and its surroundings.





Principle 4: Guidelines

4c. Maximize “legibility” of essential information

ADA: San Serif fonts only on signs



Principle 4: Guidelines

4d. Differentiate elements in ways that can be described (i.e. make it easy to give instructions or directions)



Principle 4: Guidelines

4e. Provide compatibility with a variety of techniques or devices used by people with sensory limitations



Principle 5: Tolerance for Error

The design minimizes hazards and the adverse consequences of accidental or unintended actions.



Principle 5: Guidelines

5a. Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated or shielded















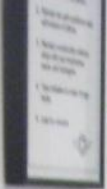


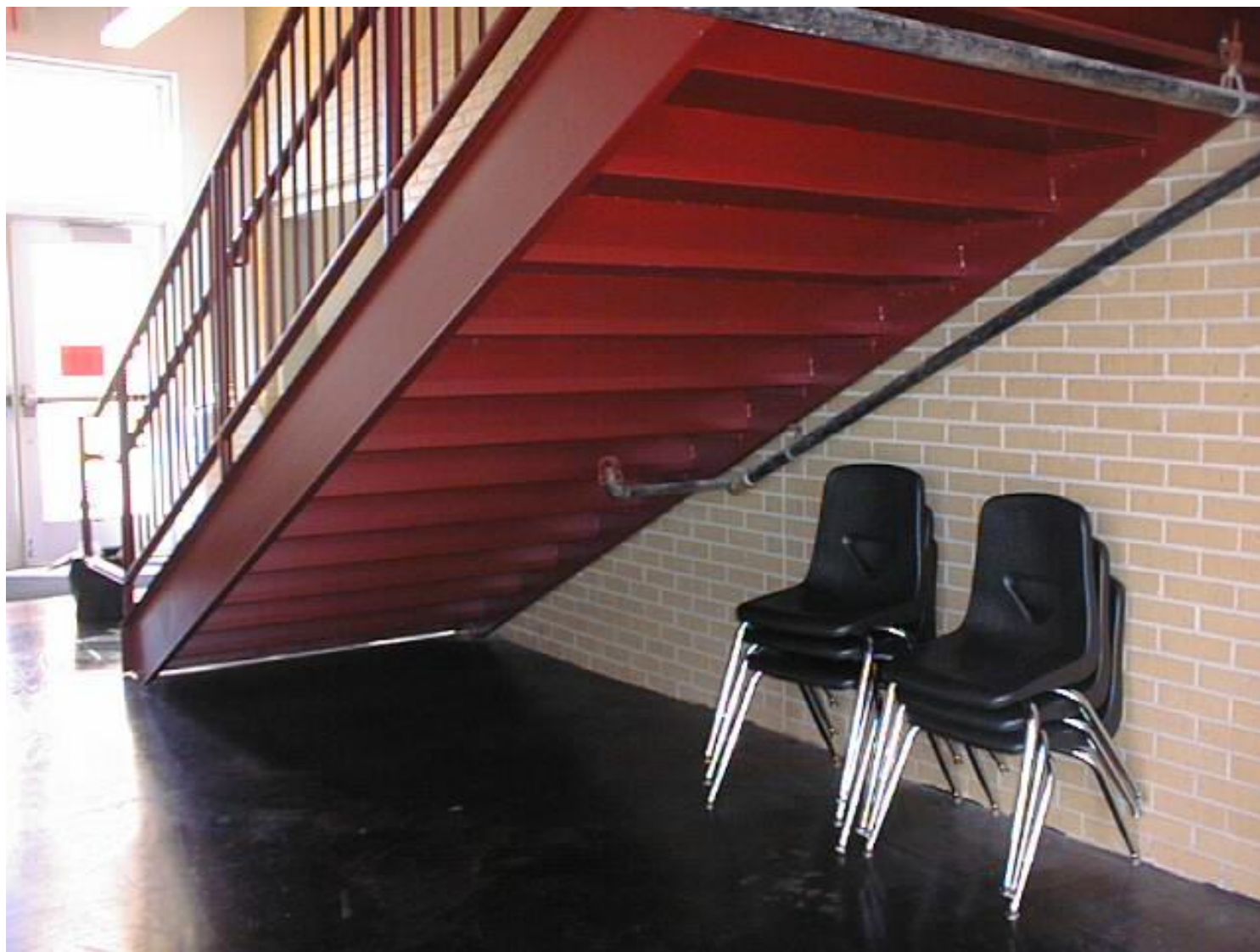
Principle 5: Guidelines

5b. Provide warnings of hazards and errors

ADA: Detectable warnings along edges of platforms at trains stations











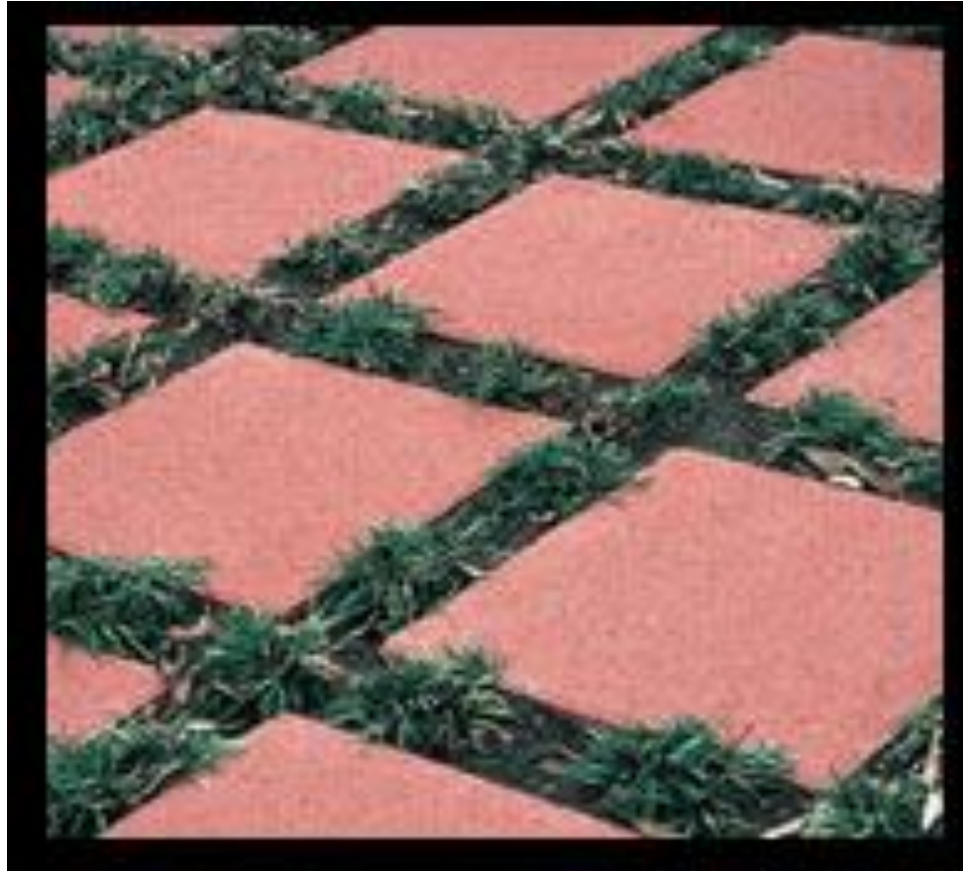
Before



After

Principle 5: Guidelines

5c. Provide fail safe features











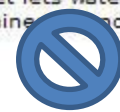




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Principle 5: Guidelines

5d. Discourage unconscious action in tasks that require vigilance



Pedestrians walk through an "e-lane" in Philadelphia. *Photo: AP*

Read more: <http://www.theage.com.au/digital-life/digital-life-news/texting-lane-just-for-laughs-but-issue-serious-20120403-1w9ne.html#ixzz1r73pqpLK>

Principle 6: Low Physical Effort

The design can be used efficiently and comfortably, and with a minimum of fatigue.



Principle 6: Guidelines

6a. Allow user to maintain a neutral body position

ADA: Standing person heights for drinking fountains as well as wheelchair heights



Principle 6: Guidelines

6b. Use reasonable operating forces

ADA: No more than 5 lbs to operate



11/17/11
Update on
Check call
• The behind counter / cashier is
• 60% left
• 40% left
• 40% left
• 40% left
• 40% left



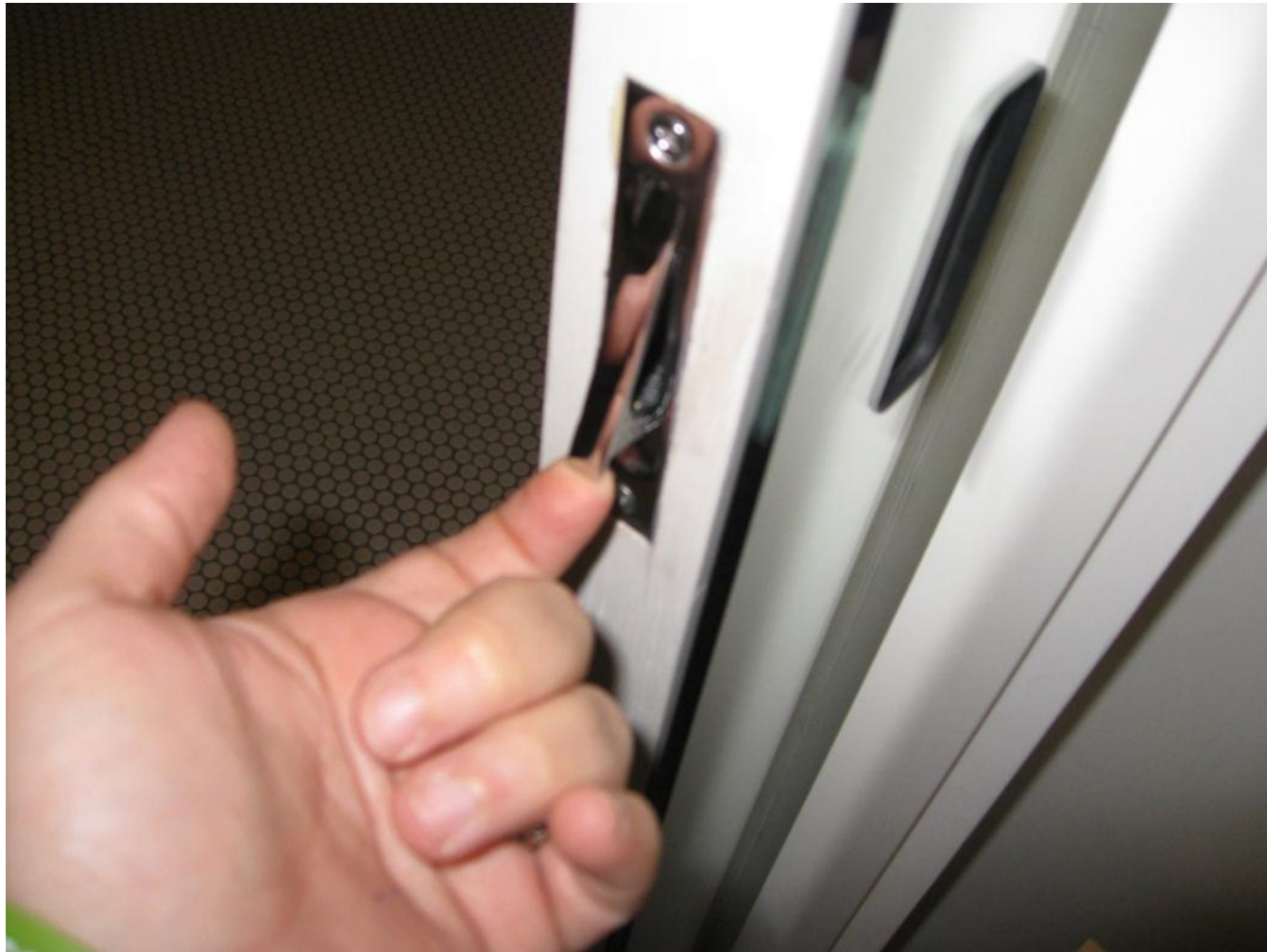
Principle 6: Guidelines

6c. Minimize repetitive actions



Principle 6: Guidelines

6d. Minimize sustained physical effort



Principle 7: Size and Space for Approach and Use

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of the user's body size, posture, or mobility.



Principle 7: Guidelines

7a. Provide a clear line of sight to important elements for any seated or standing user.



Principle 7: Guidelines

7b. Make reach to all components comfortable for any seated or standing user

ADA: Reach ranges are 48" a.f.f.











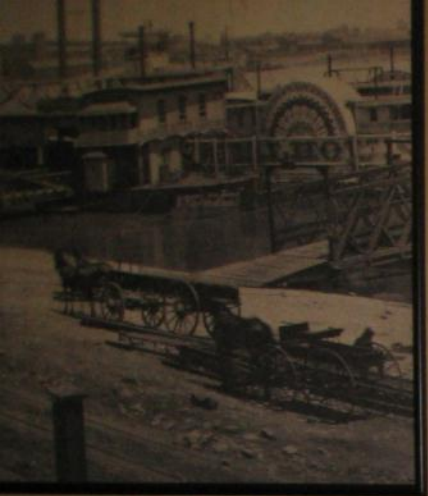


Not Universal



Universal







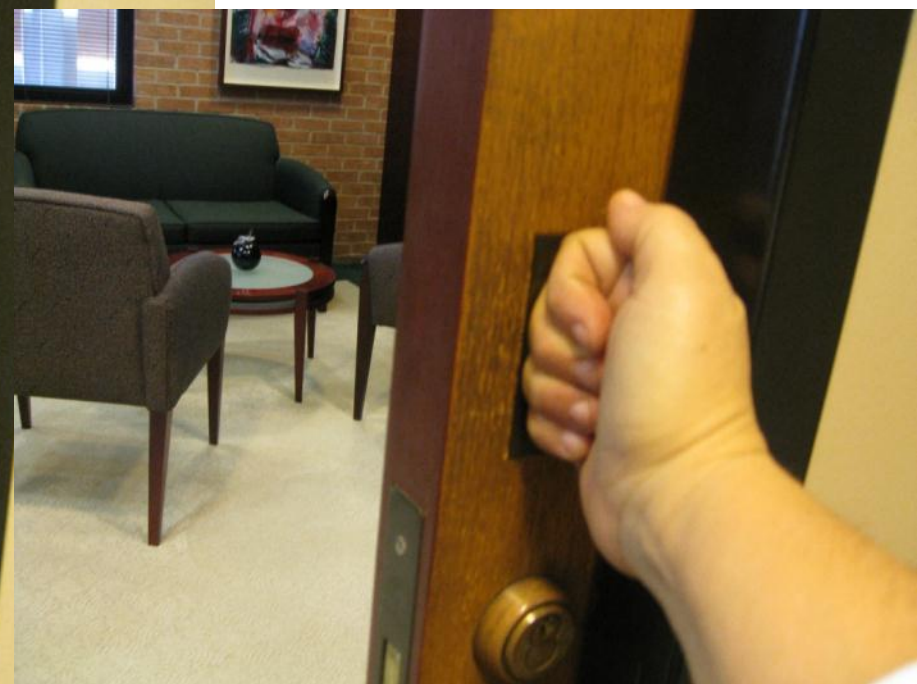
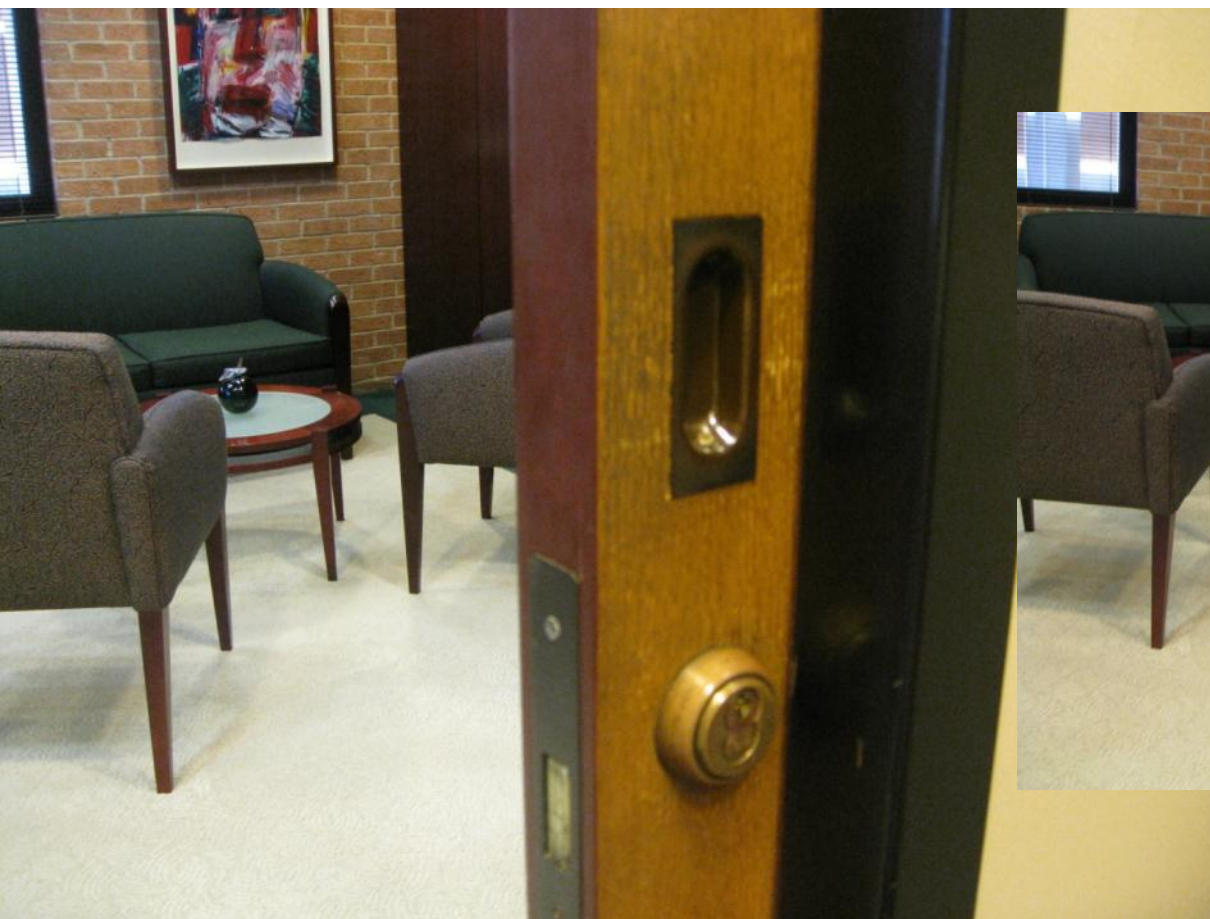


Principle 7: Guidelines

7c. Accommodate variations in hand and grip size.

ADA: Handrails and grab bars are allowed to be different shapes between 1 ½" to 4 ½" wide







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your kitchen's this organized. Peek in our
and feel frustration vanish with food stored
containers and deep drawers that let
what's way in back. Check out
adjustable dividers that
cabinet clutter.



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to the rest of
your kitchen.

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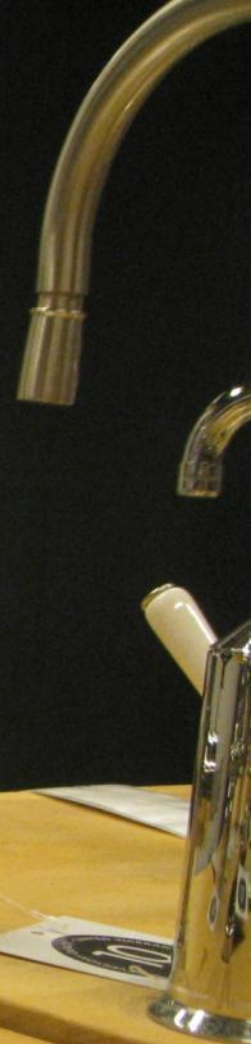
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Germ-X Moisturizing Hand Soap

With Vitamin E

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EDSWICK

10

Principle 7: Guidelines

7d. Provide adequate space for the use of assistive devices and personal assistance

ADA: Wheelchairs require clear floor space of 30"x48". Visually impaired people require 18"x18" in front of signs to read without an obstruction







The Future

- Universal Design is more important than ever.
- Disability and difficulty with everyday tasks increase dramatically with age
- Need for products that accommodate a wide range of abilities,
- Demand will grow significantly in the coming years



Universal Design and ADA Conclusion

ADA and Universal Design work together to:

- Eliminating discrimination
- Empowering people
- Advancing human dignity
- Enhancing and enlarging markets
- Assuring equal treatment for all



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marhoads@abadiaccess.com

The ADA Companion Guide:
Understanding the Americans
with Disabilities Act Design
Guidelines

www.abadiaccess.com

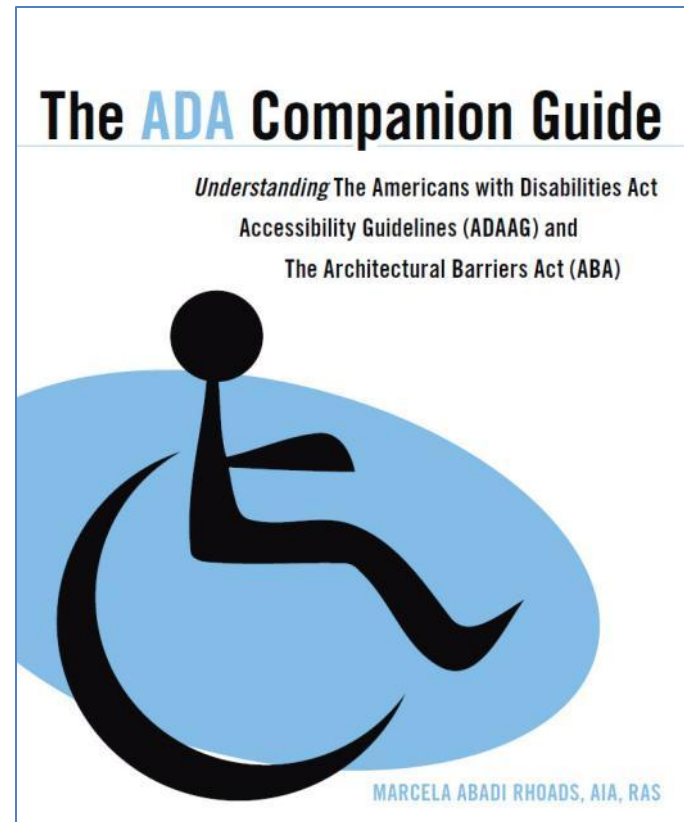
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Marcela Abadi Rhoads, AIA RAS
Owner, Abadi Accessibility

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Laura Montllor, AIA
Architect, HomeFreeHome.org
Moderator

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