Designing for Everyone: A New Look at Universal Design

Presenter: Mary-Stewart Droege, AICP
mary-stewart.droege@downtownorlando.com

Mayor's Committee on Livability & Healthy Aging

Beardall Senior Center

Wednesday, January 22, 2020

Presentation Overview

An Introduction to Universal Design

Origins, Original Definition, Principles and Myths of Universal Design

Closer Look at the Seven (-7-) Principles of Universal Design

Confusion with Americans with Disabilities Act (ADA)

State and Local Codes and Policies

AARP Domains and Possible Applications Including Certified Aging in Place Specialist (CAPS) term

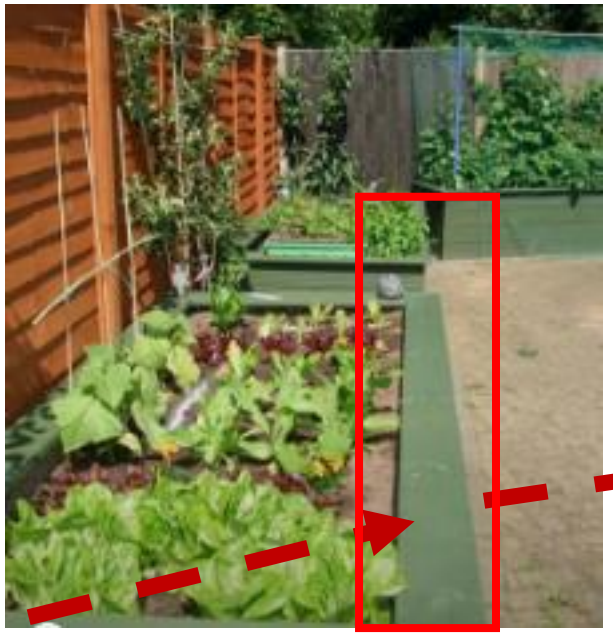
Open Discussion

Introduction to Universal Design: Separation Anxiety

Introduction to Universal Design: Designing for Everyone

Example: Gardening: Raised Garden Beds/Modified Garden Bed Features

Kneeling on the ground



Raised about 18 inches

Elevated to allow Wheel Chair Access

Origins, Original Definition and Principles of Universal Design

- First coined by the architect Ronald L. Mace to describe the concept of "*designing all products and the built environment to be aesthetic and usable to the greatest extent possible by everyone regardless of age, ability, or status in life*…." (The Center for Universal Design, NC State University; ncsu.edu)

- Commonly accepted universal design principles include: 1.) Equitable Use, 2.) Flexibility in Use, 3.) Simple and Intuitive use, 4.) Perceptible Information, 5.) Tolerance for Error, 6.) Low Physical Effort, and 7.) Size and Space for Approach and Use

Five Myths of Universal Design

- Jon A. Sanford author of *Universal Design as a Rehabilitation Strategy (2012*) and one of the authors of the *Principles of Universal Design, 2E* identifies certain misconceptions or myths about Universal Design

- Universal Design is a problem-solving approach based on principles rather than prescriptive approach based on rules

- Universal Design is often misunderstood, which has limited its use and caused confusion

Myth 1: Universal Design is just another term for assistive technology, disability design and design for aging

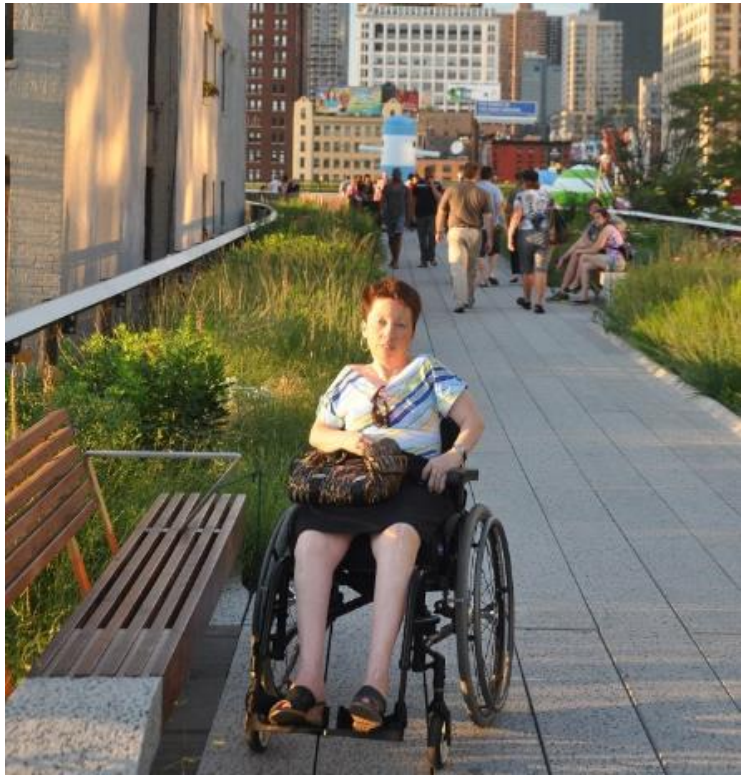
It is design for people of all ages and abilities

Superior Product Design that “Looks Good” and Can Be Employed by Many Users

Myth 2: Universal Design is just another term for the American with Disabilities Act (ADA)- Architectural Barriers Act Accessibility Guidelines/Standards

It is a performance based approach that describes why and how to do something

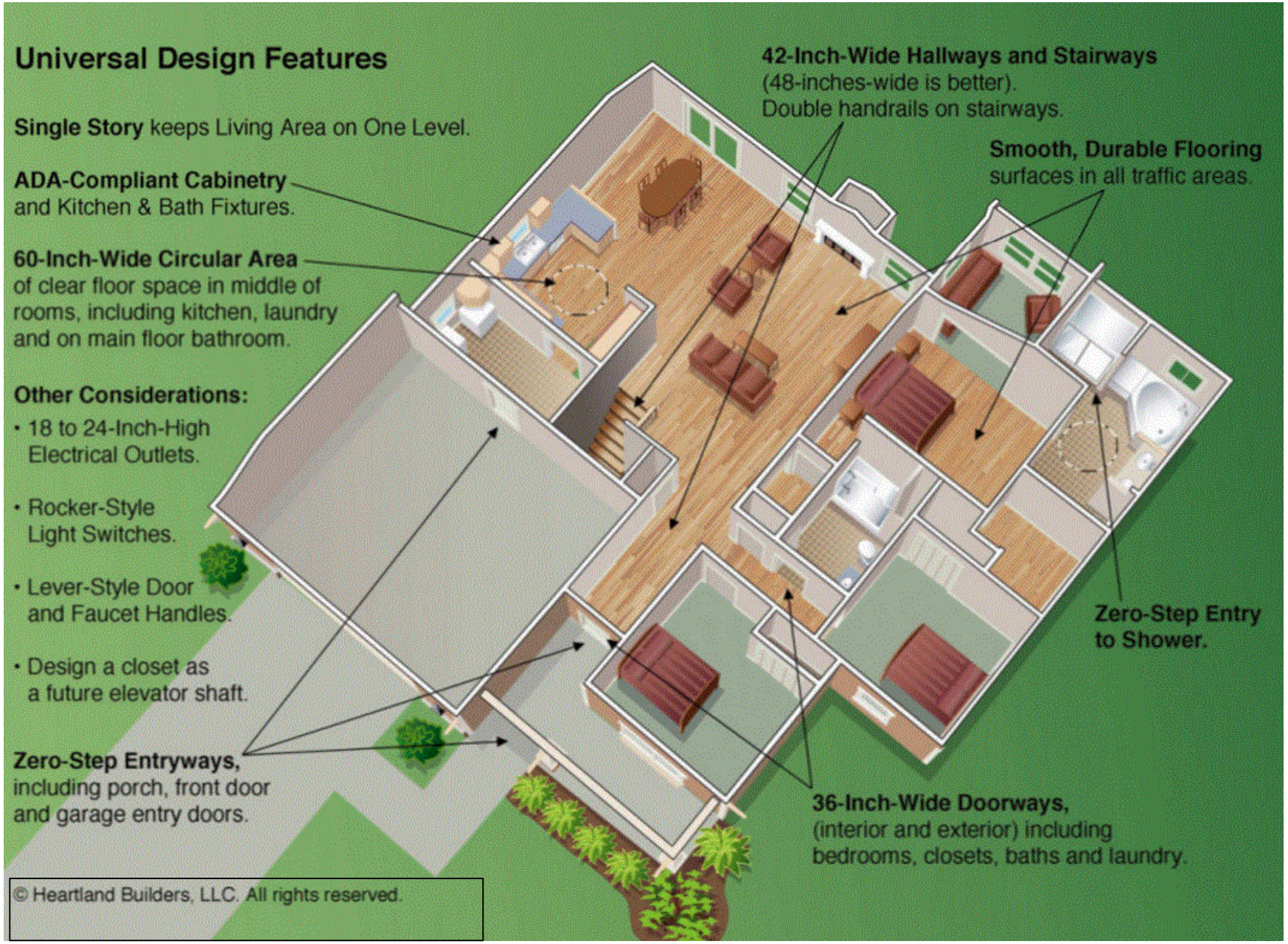
Myth 3: Universal Design is just about improving performance in daily activities



It is rooted in the ideas of social equity and inclusivity

Myth 4: Universal Design is ugly and institutional

It is contextual- aesthetics are appropriate for the context



Myth 5: Universal Design costs more$

It could – it can– but it doesn't have to….

Never Underestimate the Power of Good Design

Principles of Universal Design

Taken from Chapter 4 The Principles of Universal Design-Molly Follette Story- Universal Design Handbook 2E

- Center for Universal Design conducted research and a demonstration project in mid-1990's to develop a set of universal design guidelines

- Research resulted in 7 principles:
  - Equitable Use, Flexibility in Use, Simple and Intuitive Use, Perceptible Information, Tolerance for Error, Low Physical Effort as well as Size and Space for Approach and Use

Principle 1 -Equitable Use

(Principles of Universal Design, Version 2.0 Connell et al, 1997)

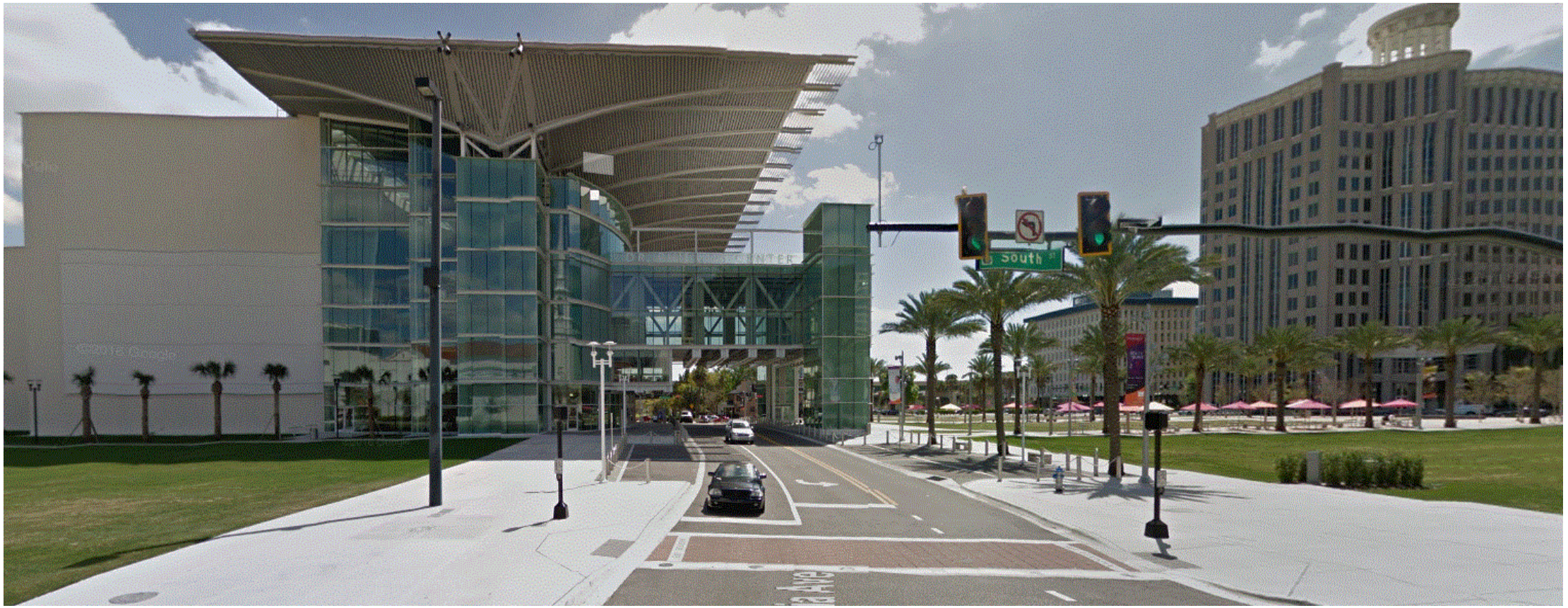
The design is useful and marketable to people with diverse abilities

Some Guidelines

- Provides the same means of use for all users: identical whenever possible; equivalent when not
- Avoids segregating or stigmatizing any users
- Makes provisions for privacy, security and safety equally to all users
- Makes the design appealing to all users

Principle 1-Equitable Use Example

- Designs should appeal to many different populations and offer everyone a comparable and non-stigmatizing way to participate



Outcomes: Allow personal adaptation and social integration

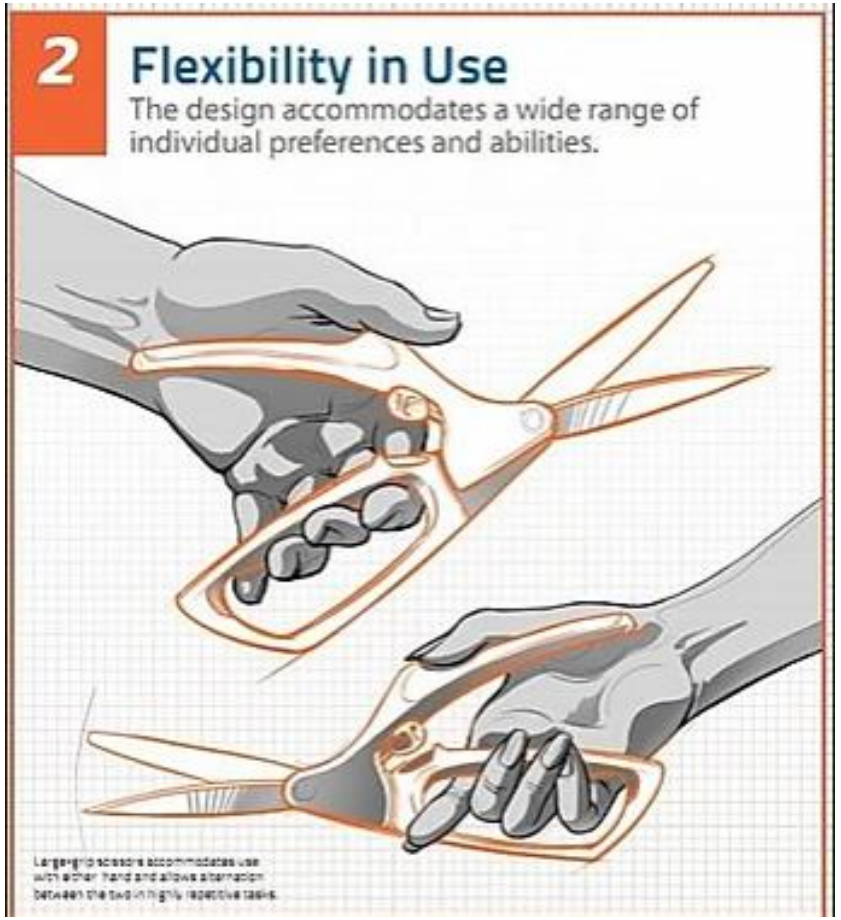
More Examples

Principle 2: Flexibility in Use

The design accommodates a wide range of individual preferences and abilities

Some Guidelines

- Provides choice in methods of use
- Provides adaptability to the user's pace



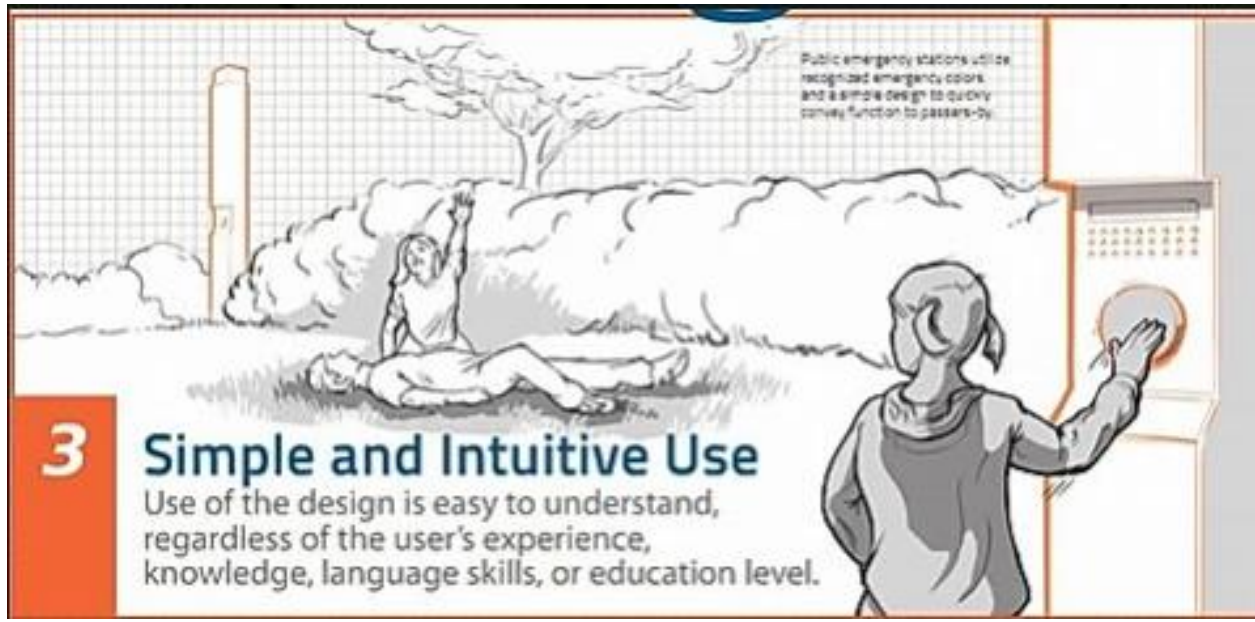
Principle 2: Flexibility in Use Example

- Design should provide for multiple ways of doing things

Outcomes: Allow comfort, fit and personal adaptation

Principle 3: Simple and Intuitive Use

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



Some Guidelines

- Eliminates unnecessary complexity
- Be consistent with users expectations and intuition
- Provides effective prompting and feedback during and after task completion

Principle 3: Simple and Intuitive Use Example

Design is easy to understand and intuitive to follow

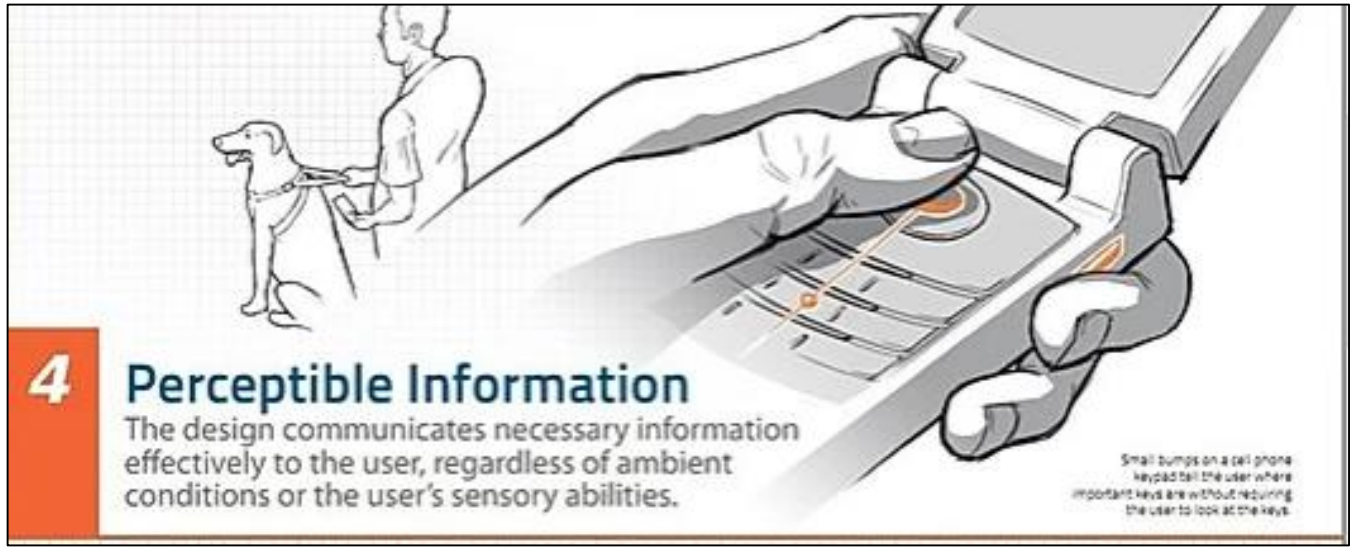
Outcomes: Allow social integration, wellness, understanding and awareness

Principle 4: Perceptible Information

Design communicates necessary information effectively to the user, regardless of ambient conditions or the users' sensory abilities

Some Guidelines

- Uses different modes (pictorial, verbal, tactile) for redundant presentation of essential information
- Provides compatibility with a variety of techniques or devices used by people with sensory limitations



Principle 4: Perceptible Information Example

- Design should provide multiple modes of output

Outcomes: Allow contextual appropriateness, understanding, awareness and comfort

Principle 5: Tolerance for Error

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

Some Guidelines

- Arranges elements to minimize hazards and errors; most used elements the most accessible– the most hazardous elements are eliminated, isolated or shielded
- Provides warnings of hazards and errors

Principle 5: Tolerance For Error Example

- Designs make it difficult for users to make a mistake but if users do, the error should not result in injury to the person or the product

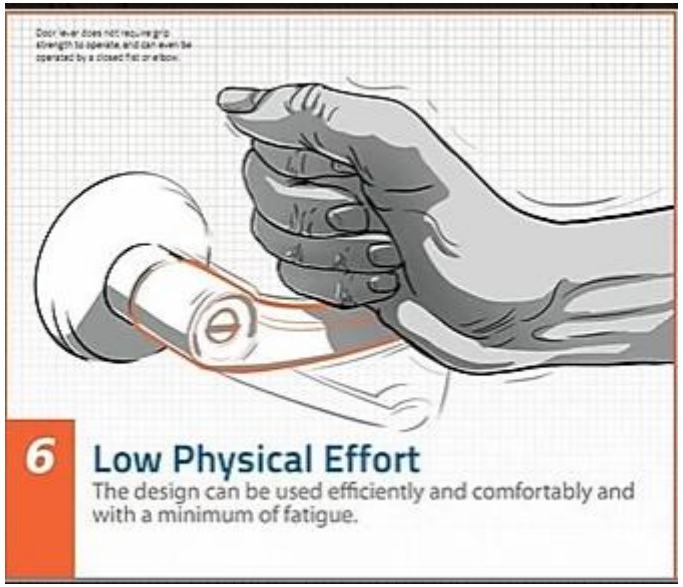
Outcomes: Allow understanding, wellness and awareness

Principle 6: Low Physical Effort

Design can be used efficiently and comfortably and with a minimum of fatigue

Some Guidelines

- Allows user to maintain a neutral body position
- Minimizes repetitive actions



Principle 6: Low Physical Effort Examples

- Design minimizes sustained physical effort

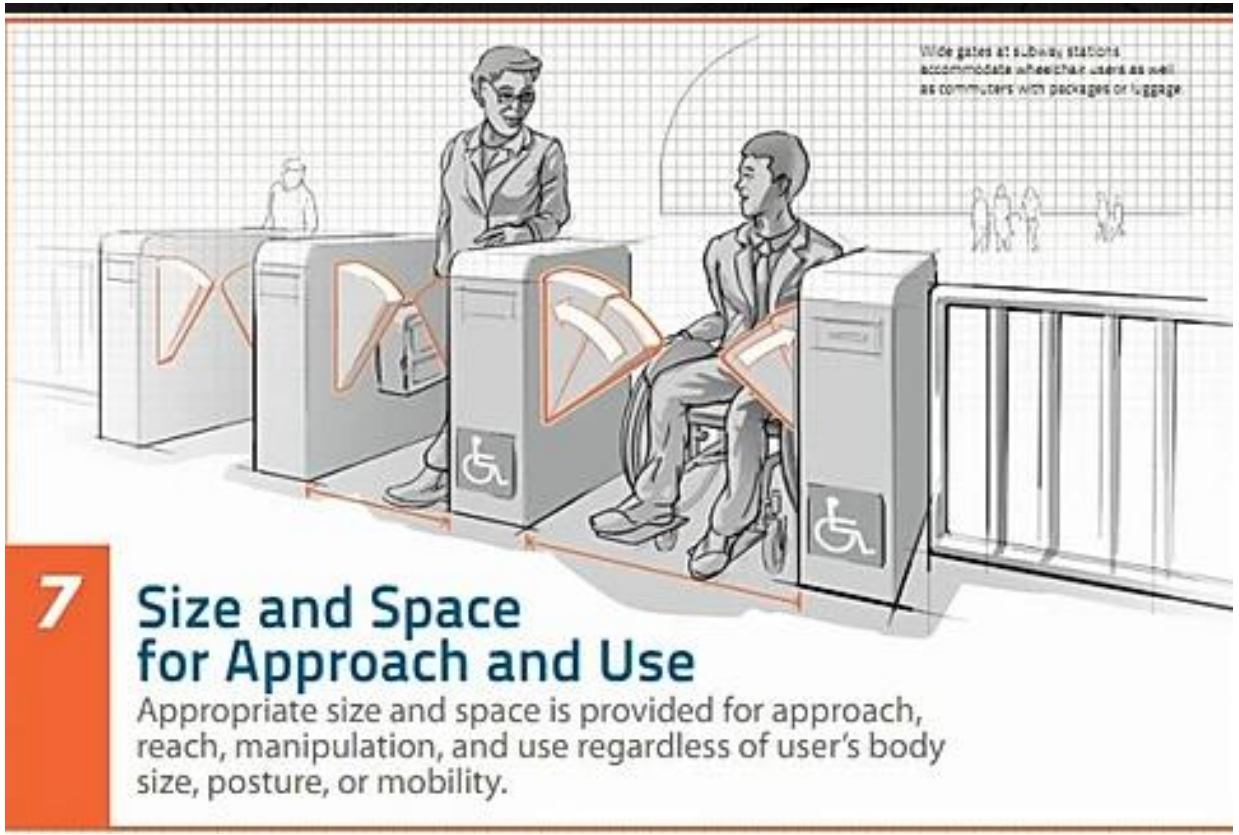
Outcomes: Address wellness, personal adaptation, comfort and fit

Principle 7: Size and Space for Approach

Design addresses size and space for approach, reach, manipulation and use regardless or user's body size, posture or mobility

Some Guidelines

- Makes reach to all components comfortable for any seated or standing user
- Provides adequate space for the use of the assistive devices or personal assistance



Principle 7: Size and Space for Approach Example

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

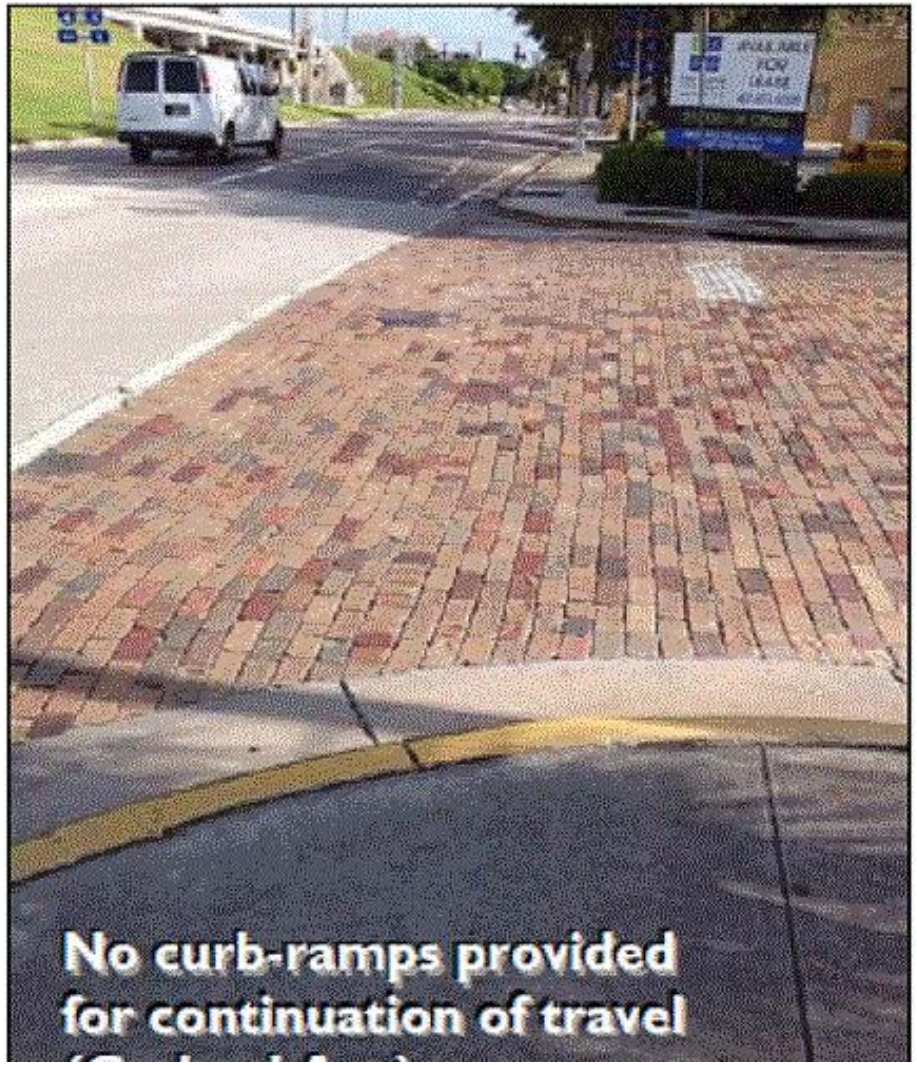
Outcomes: Promote fit, personal adaptation and comfort

Confusion with the Americans with Disabilities Act?

- Often there is confusion as it concerns Universal Design and the Americans with Disabilities Act
- Limited understanding of these differences has led to the perception that if a project meets ADA regulations and that accessibility was fully addressed, no additional design considerations are needed
- ADA is comprised of a set of regulations that are narrowly defined and specifically applied - while universal design are principles that accommodate the widest range of users, including people with mobility and other needs
- For instance, people who are unusually short or tall or carrying packages or pushing a cart are not disabled but should be considered in facility design (Sacta.org-Best Practices for universal design.)

State and Local Access Codes

- City of Orlando and the State of Florida follow the 2012 Florida Accessibility Code for Building Construction, as updated and based on 2010 ADA standards for accessible design



Policy Example

Objective 1.4 Accessibility to all of the City's parks and recreational facilities shall be improved throughout the planning period. This shall be accomplished in three ways: (1) all new parks and recreational facilities shall meet the access standards specified in the Land Development Code; (2) existing parks and recreational facilities shall be upgraded to meet the requirements of the Land Development Code, wherever feasible; and (3) pedestrian access-ways and bikeways shall be provided in all new residential subdivisions, when required by the Land Development Code. Universal design elements, consistent with the Americans with Disabilities Act (ADA), should be incorporated into new facilities and retrofits of existing facilities, where feasible.

(Amended February 7, 2000, Effective March 9, 2000, Doc. No. 32636; Amended August 28, 2017, Effective October 27, 2017; Doc. No. 1708281201)

AARP: Age Friendly Communities and Universal Design

The World Health Organization's Global Network of Age-Friendly Cities and Communities has identified 8 domains of livability that influences the quality of life of older adults. The domains are also used as a framework and starting point by the U.S.-based towns, cities and counties that belong to the AARP Network of Age-Friendly Communities.

Domain 1: Outdoor Spaces and Buildings

Domain 2: Transportation

Domain 3: Housing

Domain 4: Social Participation

Domain 5: Respect and Social Inclusion

Domain 6: Civic Participation and Employment

Domain 7: Communication and Information

Domain 8: Community and Health Services

Domain 3: Housing

ENTRY

- Climbing up the stairs to the front door
- Going down the stairs from the front door
- Unlocking the front door
- Using the door knob
- Reaching and using the mailbox
- Seeing in the area

Red Shape: The front door access have a wide closed handle and a keypad as well as lock access, allowing choice.

Yellow Shape: What are the blue dots?

FOCUS AREAS

LIVING ROOM OR FAMILY ROOM

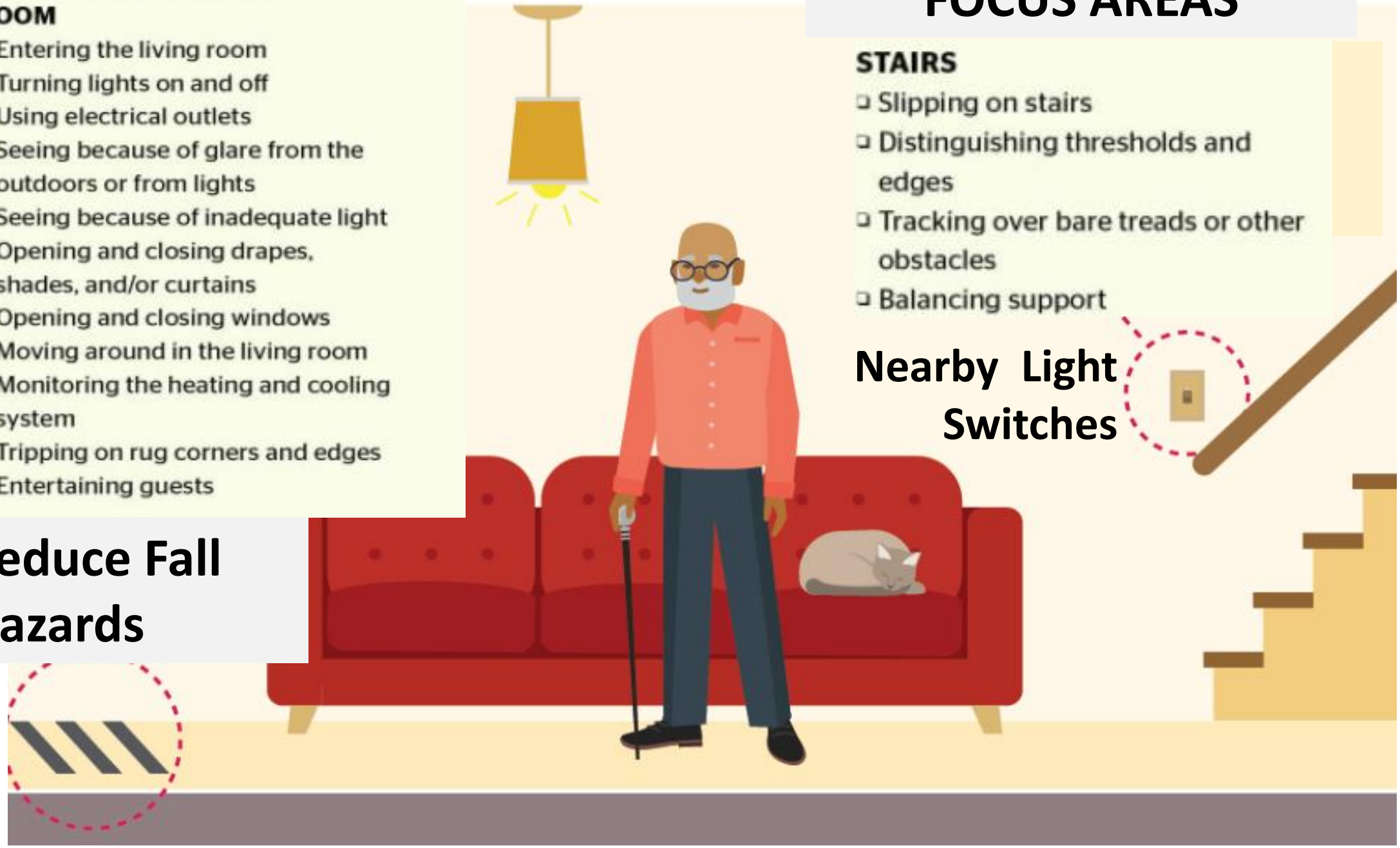
- Entering the living room
- Turning lights on and off
- Using electrical outlets
- Seeing because of glare from the outdoors or from lights
- Seeing because of inadequate light
- Opening and closing drapes, shades, and/or curtains
- Opening and closing windows
- Moving around in the living room
- Monitoring the heating and cooling system
- Tripping on rug corners and edges
- Entertaining guests

STAIRS

- Slipping on stairs
- Distinguishing thresholds and edges
- Tracking over bare treads or other obstacles
- Balancing support

Nearby Light Switches

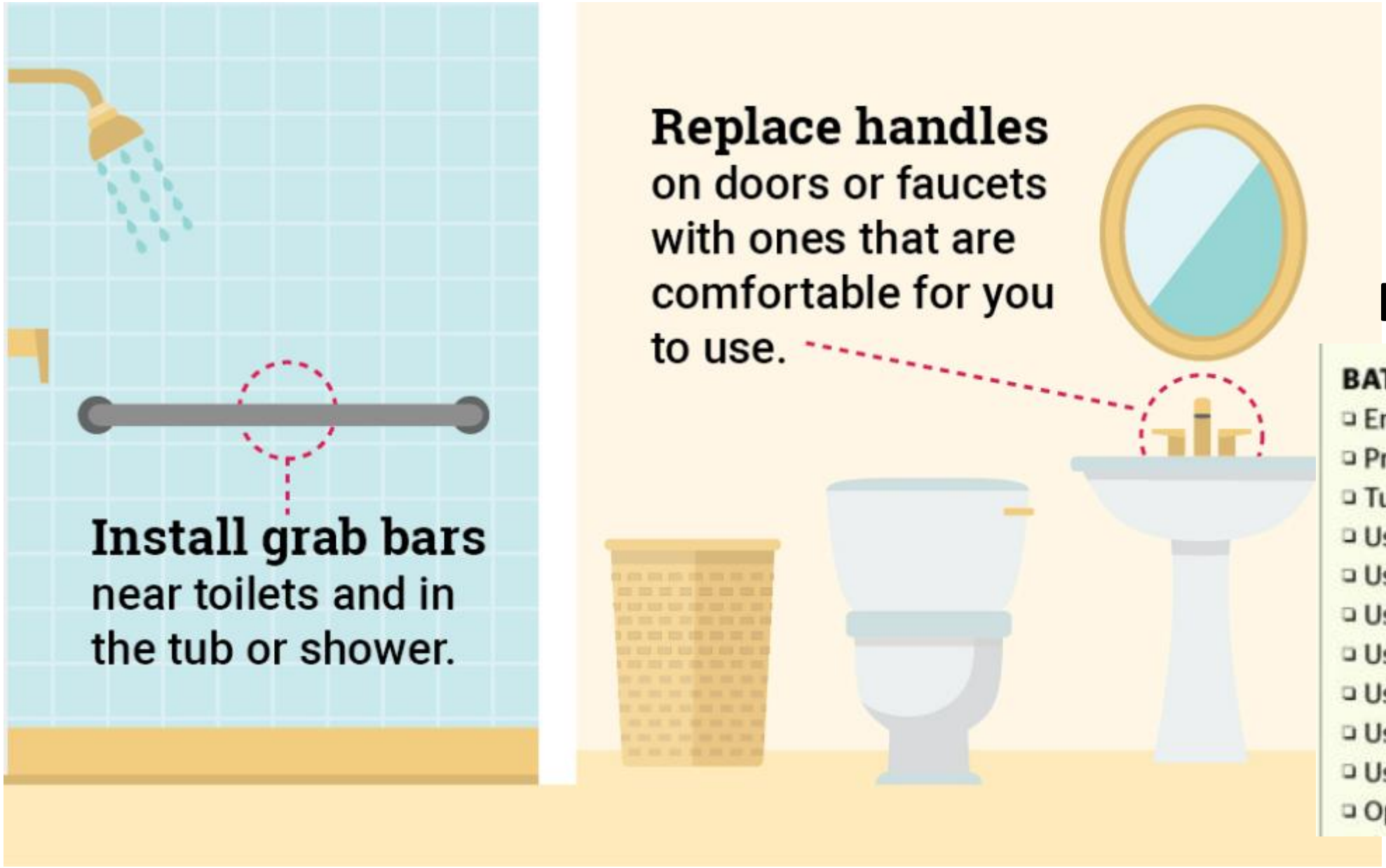
Reduce Fall Hazards



FOCUS AREAS

KITCHEN

- Turning lights on and off
- Using electrical outlets
- Opening and closing windows
- Seeing because of inadequate lighting
- Using cabinets, closets, or other storage
- Using and reaching all parts of the refrigerator/freezer
- Using counters or other surfaces (preparing meals)
- Using the oven (door, dials, shelves)
- Reaching the switch on the range fan
- Using the stove (dials, reaching burners)
- Opening cans or bottles
- Using water taps
- Cleaning the floor and other surfaces
- Using the dishwasher
- Disposing trash/garbage



FOCUS AREAS

BATHROOM

- Entering and exiting
- Privacy
- Turning lights on and off
- Using electrical outlets
- Using cabinets and closets
- Using the mirror
- Using water taps
- Using the sink
- Using the toilet
- Using the shower//bathtub
- Opening and closing the window

FOCUS AREAS

BEDROOM

- Entering and exiting
- Turning lights on and off
- Using electrical outlets
- Communication
- Opening and closing drapes, shades, and/or curtains
- Opening and closing windows
- Using the closet (opening/closing, reaching clothes)
- Finding adequate storage room
- Tripping on rug corners and edges
- Seeing because of glare
- Seeing because of inadequate lighting

HALLWAYS AND INSIDE DOORS

- Opening and going through doors to rooms
- Using door knobs
- Moving between carpeted and non-carpeted areas
- Seeing because of inadequate lighting
- Turning on lights in the area being approached

Don't use area rugs and check that all carpets are fixed firmly to the floor.

So Who Can Help You Make These Small or Big Changes?

Certified Aging-in-Place Specialist (CAPS) The **Certified Aging-in-Place Specialist** (CAPS) designation program teaches the technical, business management, and customer service skills essential to competing in the fastest growing segment of the residential remodeling industry: home modifications for the **aging-in-place**. Courses are listed below:

- Marketing and Communicating with the Aging in Place Client (CAPS I)
- Design Concepts for Livable Homes and Aging in Place (CAPS II)
- Details and Solutions for Livable Homes and Aging in Place (CAPS III)

Open Discussion