



Creating Livable Places: Sustainable Communities for All

Dory Sabata, OTD, OTR/L, SCEM
Center for Assistive Technology &
Environmental Access

Creating Livable Places
September 21, 2006

Housing Has Not Been Designed For Users of Various Abilities

Life Span Development



Acute Injury



Aging-in-Place



Chronic Disability



Peter Pan Housing is For People Who Never Grow Old



Lifespan

- Intergenerational
- When long-term care is needed, preferred to receive it at home

Aging-in-Place

- 35.9 million people age 65+ in U.S.
(Source: U.S. Census Bureau, 2004)
- **As We Get Older, We Limit Participation in Activities** (Source: Chartbook on Disability, 1999)
- **People Prefer to Age in Place at Home**
(Tabbarah et al, 2000)
- **Adults Age 45+**
 - 77% Live in Single Family Homes
 - 85% Own Their Home
(Source: Fixing to Stay, 2002)

Injuries Often Occur at Home

- In 2002, 5,305 children died from accidental injuries
 - (i.e. suffocation, drowning, falls, burns, firearms, poisoning)
 - 40% occurred in and around the home
(Source: Safekids Worldwide)
- Falls are the leading cause of death among older adults (Source: Falls Free)

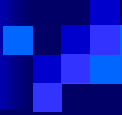
People Are **Living** With Functional Limitations and Chronic Disability



People with motor, sensory, &/or cognitive impairments can participate in everyday activities

Disability Results From A Mismatch Of The Person-Environment Fit

- People with functional limitations are not disabled unless the environmental demands exceed their abilities



How can design better address the needs of a population of that is aging and with increasing disability?

Simplification Can Enhance:

- Orientation and awareness
- Physical function
- Comfort
- Safety

Definitions

- Visitability
- Universal Design

Visitability

- One ZERO-STEP entrance
- Doors with 32 inches of clear passage space
- Bathroom on the main floor



<http://www.concretechange.org/>



Universal Design

- Design for all potential users to the greatest extent possible

Universal Design

1. Equitable Use
2. Flexibility in Use
3. Simple and Intuitive Use
4. Perceptible Information
5. Tolerance for Error
6. Low Physical Effort
7. Size and Space for Approach and Use

(Source: NC State University, The Center for Universal Design, 1997)

3 Major Problem Areas of the Home:



- Outside Steps To The Entrance
- Inside Stairs To A Second Floor
- Unsafe Bathrooms

Source: HUD (2001)

Important Activities at Home

- Entering and Exiting the Home
- Moving Around the Home
- Bathing
- Toileting

Problems with Entering and Exiting the Home

- Change in elevation
(AKA steps)
- Lacks visual contrast
- Lacks upper body support
(handrails)



Entering and Exiting

- The home
- A vehicle



Other Alternatives to Entrance with Outside Steps

- Ramps
- Earth Berms/Walkways
- Lifts
- Zero Step entrance



Features when Moving Around

- Upper body support
- Lighting
- Visual contrast
- Type of flooring
- Door width



Other Strategies for Getting Upstairs

- Chair lift
- Elevator
- Relocate rooms to main floor



Moving Around in the Kitchen

- Maneuverability
- Appliance access
 - Separate oven/stove
- Storage
 - Cabinet height
 - Lazy susans



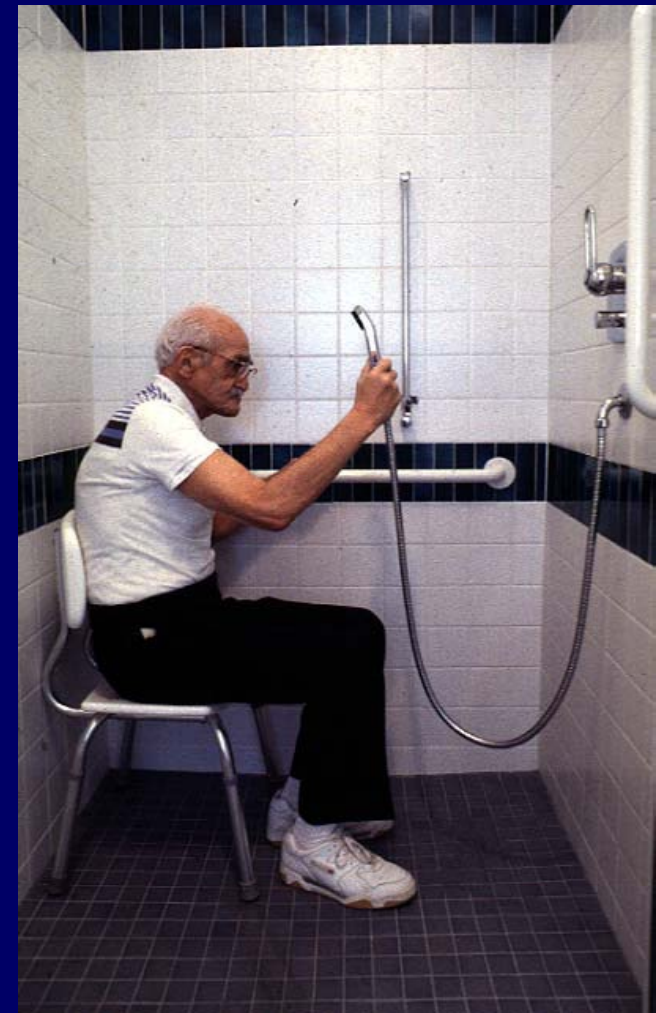
Bathing

- Transferring
- Controls
 - Water direction
 - Temperature
- Accessing soap/towels



Strategies for Bathing

- Bath bench/chair
- Bath lift
- Grab bars
- Visual contrast
- Non slip surface
- Hand held showerhead
- Shower/wet room
- Curbless shower



Toileting

- Transferring
 - Height of toilet
 - Grab bars/safety frame
- Flushing
 - Hand, foot, automatic





Grooming

- Sink Access
 - Open underneath
 - Height adjustable
- Controls
 - Single lever
 - Automatic

When Designing Sustainable Communities for All:

- Apply Universal Design Principles
- Anticipate that abilities will vary & change
- Recognize that modifications may be necessary in order to facilitate community participation

Contact Information

Center for Assistive Technology &
Environmental Access (CATEA),
Georgia Institute of Technology

www.catea.org

Email: dory.sabata@coa.gatech.edu