STAIRWAY TO HEALTHY: Designing Active, Accessible, and Resilient Housing

UNIVERSAL DESIGN & AGING IN PLACE

Josh Safdie, AIA
Kessler McGuinness & Associates, LLC
Housing Opportunity 2016
Global population is living longer

- 60-80 year olds
- Over 80s (as % of total population)

<table>
<thead>
<tr>
<th>Region</th>
<th>2007</th>
<th>2050*</th>
<th>07</th>
<th>50</th>
<th>07</th>
<th>50</th>
<th>07</th>
<th>50</th>
<th>07</th>
<th>50</th>
<th>07</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUROPE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NORTH AMERICA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OCEANIA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASIA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LATIN AMERICA &amp; CARIBBEAN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AFRICA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*2050 (prediction)

Source: UN

http://www.rollingalpha.com/2014/04/30/the-crisis-of-ageing-populations/
The New American Demographics

100M Americans are over the age of 50

77M Are baby boomers

10,000 boomers will turn 65 every day for the next 15 years

57M Identify as disabled

27M Have trouble walking

Only 3.6M Americans use wheelchairs

2010 United States Census
ARThritis
BACK PROBLEMS
HEART TROUBLE
RESPIRATORY PROBLEMS
DIABETES
Housing an Aging Population
Are We Prepared?

2002 Madrid International Plan of Action on Ageing

Priority Area 1:
Older persons and development

Priority Area 2:
Advancing health and well being into old age

Priority Area 3:
Ensuring enabling and supportive environments

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.”

- Ronald L. Mace, FAIA
Universal Design Principles

- **Equitable Use.**
  The design is useful and marketable to people with diverse abilities.

- **Flexibility in Use.**
  The design accommodates a wide range of individual preferences and abilities.

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

- **Perceptible Information.**
  The design communicates necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities.
Universal Design Principles

• **Tolerance of Error.**
The design minimizes hazards and the adverse consequences of accidental or unintended actions.

• **Low Physical Effort.**
The design can be used efficiently and comfortably, and with a minimum of fatigue.

• **Size and Space for Approach & Use.**
Appropriate size and space is provided for approach, reach, manipulation, and use, regardless of the user's body size, posture, or mobility.
Universal Design ≠ Accessible Design.

**Accessible Design** is a compliance-based approach to design, driven by minimum dimensional standards, established with a limited group of users in mind, and applied in only limited situations.

**Universal Design** is an attitude toward design which acknowledges the diversity of human ability, age, and culture in every aspect of our physical, information, and communication environments.
Universal Design in housing for seniors can promote independence and self-sufficiency by providing environments which accommodate the predictable changes in ability that accompany old age, allowing residents to age-in-community with joy and dignity.
VisitAbility Guidelines (US)

- One zero-step, or at-grade, entrance, at the front, back, or side of the house

- All doors on main floor, including bathrooms, with at least 32” of clear passage space when open

- At least a half bath, and preferably a full bath, on the main floor
Lifetime Homes (UK)

- Bathroom planned to give side access to WC and bath
- Provision for a future stair lift
- Identified space for future platform lift to bedroom
- Low window sills
- Walls able to take adaptations
- Identified space for temporary entrance level bed
- Living or family room at the entrance level
- Distance from the car parking space kept to a minimum

- Easy route for a hoist from bedroom to bathroom
- Sockets, controls, etc. at a convenient height
- Accessible entrance level WC (opportunity for shower later in 3 bed or larger homes)
- Width of doors and hall allow wheelchair access
- Turning circles for wheelchair in ground-floor living rooms
- Accessible threshold covered and lit
- Parking space capable of widening to 3300mm
- Level or gently sloping approach to the Lifetime Home
Sekisui House (JAP)
UD Guidelines for Homes (IRL)
Dementia Friendly Dwellings (IRL)

Universal Design Guidelines
Dementia Friendly Dwellings for People with Dementia, their Families and Carers
Centre for Excellence in Universal Design

2015

Two Bedroom Apartment

Some typical UD Dementia Friendly features:
A. Ensure good acoustic conditions by orientating spaces away from sources of noise or by providing high levels of acoustic insulation.
B. Provide good visual access to key areas and features, such as lifts or stairways within common circulation areas.
C. Create a distinctive entrance to the apartment by providing distinct colours to the entrance area or by using similar markers to identify the entrance from the others in the circulation area.
D. Provide a brightly painted front door to make it distinct and recognisable. Use this approach for other areas such as lifts or entrance doors to stairways.
E. Consider fitting a cistern to disguise the inside of the apartment door to discourage a person with dementia from leaving the house at unsuitable times, if necessary.
Oven is 10’-0” away from cook top

No room for furniture in entry

No place for a guest to sit and talk

No view as you enter – unit feels smaller

Can’t open closet door

No turn-around space

Can’t reach windows to open them

No place for a dresser

Bath tubs are unsafe for many seniors

Kitchen becomes the focal point of the unit

3 choices: jammed into the corner, blocking the bedroom doorway, or staring at the wall

Only one, small work surface

Can’t open door

No turn-around space

No place for a dresser

Can’t reach windows to open them

Swing door is always in the way
View through entire unit from entry

Space for additional storage near entry

Room for extra tables for lamps or display

Living room allows for conversation and can be re-arranged

Door is usually open anyway, so why not make it disappear?

Roll-in shower with two shower heads – seated and standing

Countertop with bookshelves separates ‘zones’ of unit

Generous turn-around space & knee space

Natural light & views at dining table

Built-in elements all at back wall

Furnishable corner

Layout anticipates changes in mobility

Dresser at foot of bed

Natural light & views at dining table

Room for extra tables for lamps or display

Living room allows for conversation and can be re-arranged

Door is usually open anyway, so why not make it disappear?

Roll-in shower with two shower heads – seated and standing

Countertop with bookshelves separates ‘zones’ of unit

Generous turn-around space & knee space

Built-in elements all at back wall

Furnishable corner

Layout anticipates changes in mobility

Dresser at foot of bed
Conclusions

1. Access regulations are only a minimum standard, and they won’t solve your problems. Get them right, and then get on with the actual work of design.

2. In the end, how it looks is rarely as critical as how it works. Keep the user at the center of the design process.

3. If it seems like good design, it just might be Universal Design. Universal Design is an attitude, not a checklist. Embed it in your culture, and demand it of your architects.