

PHRC Webinar Series / Tuesday, February 10th, 2015 @ 1pm

Aging in Place The Final Step

Presented by: Bryan Heltzmann, PHRC Training & Edu. Dev. Specialist

Pennsylvania Housing Research Center
219 Sackett Building • University Park, PA 16802
P: 814-865-2341
www.PHRC.psu.edu



3

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Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.



Description

- This third and final webinar in the series will further explore the design concepts associated with aging in place. Topics such as universal design, accessibility, and visitability will be looked into and their relationship to aging in place will be considered. This webinar will take a deeper look into cutting edge aging in place technologies available in the current marketplace, as well as automated features that can be incorporated into “smart homes.” Numerous home modifications will be explored and digital health technologies for the home will be discussed.




6



Learning Objectives

- **Following the completion of this webinar, participants will be able to:**
 - Recognize the key differences in the design concepts incorporated in accessibility, adaptability, visitability, and universal design.
 - Identify new and innovative products that can be used or installed to improve the safety of the residence while allow occupants to live more independently.
 - Explore home modification opportunities and design implementations that will help explained business opportunities.
 - Understand and discuss the concept of a “smart home” and understand the safety benefits that they can provide to occupants.



7

Agenda

- ❖ **Overview**
 - ❖ Background
- ❖ **Market Characteristics**
- ❖ **Design Categories**
- ❖ **Design Aesthetics**
- ❖ **Design Solutions**
 - ❖ Smart Home Technology
- ❖ **Summary & Questions**




8

Overview

9


Background

- **What is Aging in Place?**
 - A term used to describe a person living in the residence of their choice, for as long as they are able, as they age
 - The concept of adapting your home and lifestyle to provide a safe and healthy living environment as you age
 - Includes being able to have any services or support systems needed over time as occupant needs change

10 

Background

- **The Aging in Place market is characterized by needs/wants that develop from the aging process**
 - Planning for changes that will occur due to aging & what impacts these changes will have on their lives
 - Not just for senior citizens
 - For those who want to maintain their current quality of life
- **Planning presents an opportunity to lessen the burden by:**
 - Outlining how and where needs will be met
 - Lessening the need for assistance from family, neighbors, or community resources

11 


Why is it “Important”

- **Represents market opportunity**
 - Home modifications to meet client needs
 - Building “aging ready” homes
 - Consulting
- **Training is key element**
 - Market characteristics
 - Business management
 - Customer service skills
 - Product knowledge




Program Objectives

- **To present various methods and techniques for modifying a home design**
 - New Construction
 - Remodel
 - Retrofitting
- **Provide knowledge to the builder/remodeler of potential client needs**
 - Current needs and projected needs of the client

13 

Program Objectives

- **Explore home modification opportunities and design implementations that will help explained business opportunities**
 - Design strategies
 - Design solutions
- **Determine numerous home modifications that can be implemented to help those who wish to age in place**
 - Based off client needs

14 

Market Characteristics

Market Characteristics

- **The Aging in Place market is characterized by needs/wants that develop from the aging process**
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Changing Lifestyles

- **Life changes might include:**
 - Impaired vision
 - Impaired hearing
 - Decreased mobility
 - Decreased muscle strength or endurance
 - Reduced mental processing capabilities
 - Increased risk of falls due to balance issues
 - Increased risk of illness



Increasing Market Size

- **The percentage of older Americans has increased significantly**
 - **15.3%** increase in 65+ population from 2000 - 2010
 - Currently **13.7%** of Americans are ages 65 and older
 - By 2030, the 65+ population segment is projected to be **71.5 million**
 - Projections show **18%** will be 65 and older
 - People are living longer
 - 1987 life expectancy = 74.77
 - 2012 life expectancy = 78.74

US Dept. of Commerce, Bureau of the Census



Baby Boomers

- **Baby Boomer Generation**
 - Born from 1946 to 1964
 - Boomers make up approximately 25% of the total U.S. population -CBR.com
 - Approximately two-thirds of all seniors 65 and over have at least one chronic disease - National Center for Health Statistics

1940	2,559	1955	4,097
1941	2,703	1956	4,218
1942	2,989	1957	4,300
1943	3,104	1958	4,255
1944	2,939	1959	4,245
1945	2,858	1960	4,258
1946	3,414	1961	4,268
1947	3,817	1962	4,167
1948	3,637	1963	4,098
1949	3,649	1964	4,027
1950	3,632	1965	3,750

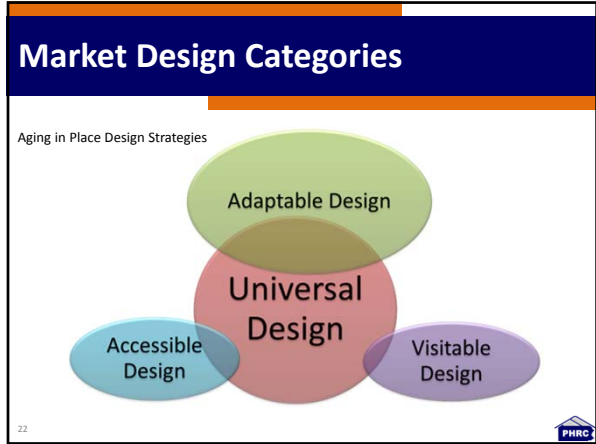
US Dept. of Commerce, Bureau of the Census

Market Desires

- **Social attachments**
 - Friends
 - Neighbors
 - Family

} Provide support that help people remain active and independent within a community
- **Desire to remain in their current home as long as possible**
 - 91% of pre-retirees (50 to 65) responded that they want to live in their own homes in retirement
 - Of that group:
 - 49 percent want to stay in their current homes
 - 38 percent want to move to new homes MetLife Housing Institute
- **Even if day-to-day assistance or ongoing health care is needed during retirement:**
 - 82% would prefer to stay in their homes
 - Only 9% express a preference for moving to a facility where care is provided
 - Only 4% prefer moving to a relative's home MetLife

Design Categories



Aging in Place Design Strategies

- **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 ...NAHB
 - **Enhances** traditional design
 - Offers comfort
 - Offers convenience
 - Offers ease of use

23

Aging in Place Design Strategies

- **Adaptable Design**
 - Addresses individual occupant necessities and changes in capability over time
 - Features which can easily be added or removed based on the individual's changing needs
- **Accessible Design**
 - Features assistive technologies to meet the client's needs only
 - Does not have the responsibility of overall market appeal

24

Aging in Place Design Strategies

• Visitable Design

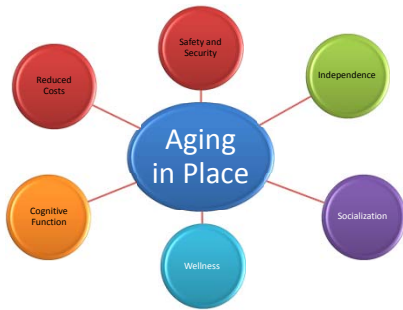
- Housing designed in such a way that it can be lived in or visited by people who have trouble with steps or who use wheelchairs/walkers – Visability.org
 - Home designed/constructed to have a visitable ground floor
 - Gives guest free range of movement on main level



25



Market Design Services



26



Client Needs Categories

• Three Market Segments:

- 1) Without urgent needs
- 2) With progressive condition based needs
- 3) With traumatic change needs

27





Design Aesthetics

Design Aesthetics

- The goal of a successful aging in place project should be to blend the features into the home as seamlessly as possible
- Projects should be:
 - Aesthetically pleasing
 - Flexible
 - Easy to use
 - Invisible
- Design's role for aging-in-place:
 - Accomplishing a purpose
 - Solving a problem
 - Enhancing a living environment



30

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Design Aesthetics

- **Clients will be more open to aging in place technologies if they do not detract from the appearance of the home**
 - Industry professionals must effectively evaluate a homeowner’s needs and implement a project in a professional, aesthetically pleasing way
 - If possible, avoid converting the home into a series of “hospital-like” rooms
- **Aesthetics are important in any design**
 - Safety and client needs should come first in the case of any aging-in-place remodeling project

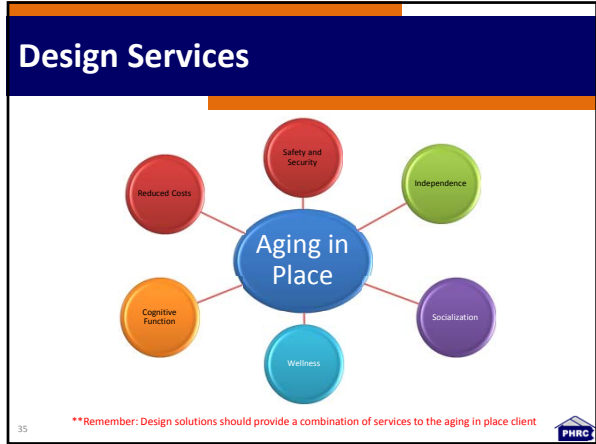
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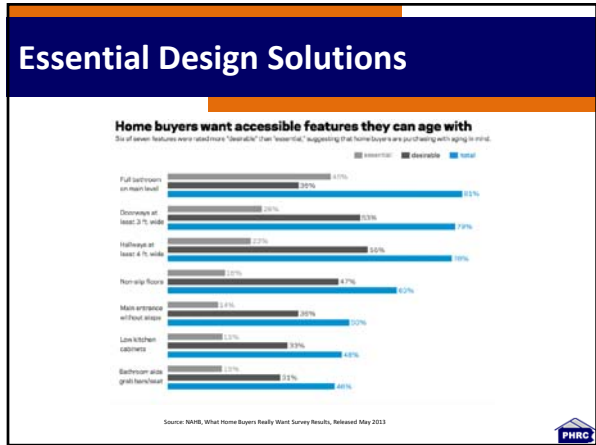
Design Rewards

- **If implemented properly, many aging in place features can:**
 - Add resale value to the home
 - Create more open concept designs
 - Increase property appeal
 - Produce safer living environments
 - Increased efficiency in performing functions in a time-saving, cost-saving and convenient manner
 - Design features perform effectively and enhance visual beauty of the space

32 

Design Solutions







- ## Design Solutions - Safety
- **Primary goal of aging in place?**
 - Improving client safety
 - **Safety consideration must include:**
 - Exit during fire
 - Preventing falls
 - Avoiding burns
 - Redundancies
 - Improving communication
 - Installing security systems
-
- 37

Controls

- All controls should be easy to:
 - Read
 - Large digital readout
 - Understand
 - Simple up/down buttons
 - Access
 - Should be mounted no more than 48" above floor
- Home automation voice control
- Automatic controls
 - HVAC or lighting
 - Integrate environmental factors, energy usage and safety systems







38




Controls

- For lighting:
 - Should be mounted no more than 48" above floor
- Specific types of lighting controls to consider:
 - Rocker switches
 - Dimmers
 - Motion sensors
 - Wireless controls (remote)
 - Exterior Security







39




Lighting

- As people age:
 - More sensitive to glare
 - Reduced ability to focus
 - Less sensitive to color
 - Contrasts in light levels become painful
 - Colors blur
- It is very important to contrast lighting depending on the task being performed
 - Reduce glare
 - Increase task safety





40



Doors & Hallways

- Often the first area addressed in an aging in place project
- Doorways should provide a minimum of 32" in width
 - Preferably 36"
- Solutions:
 - Enlarging doorway openings
 - Use swing away hinges
 - Provide more clearance
 - Consider pocket doors
 - Sliding doors
 - Folding doors



The diagram shows a doorway with a 32-inch clearance. A note indicates that a wheelchair should be able to pass through the doorway. Below the diagram are two photos: one of a door with swing-away hinges and another of a pocket door.

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Contrasting Colors

- Bright colors are easiest to see because of the ability to reflect light
- Color can also provide important safety cues:
 - An indicator of change in surface or level
 - A warning for potential hazard
- Contrast sensitivity
 - The ability to detect differences between light and dark areas
 - For those with impaired vision:
 - Increasing the contrast between an object and its background will generally make the object more visible



The images show a staircase with alternating light and dark steps, and a light switch with a high-contrast face.

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Lifts

- Chair lifts
 - For clients with mobility issues, progressive needs that will affect mobility, and difficulty with stairs
- Platform lifts
 - Lifting device for clients with mobility devices
 - Allow client to transfer floors while remaining in the mobility device
- Elevators
 - Typically a large scale remodel is required
 - Better option for new construction
- Vertical lifts
 - Similar to elevators
 - Usually not enclosed




The images show a person using a chair lift on stairs, a platform lift with a wheelchair, and an elevator shaft.

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Kitchens

- **Design solutions include:**
 - Having everything as easy to reach as possible and limit bending/reaching
 - Incorporate open shelves for frequently used items
 - Install pull-down or pull-out shelves
 - Variable counter heights
 - Providing adequate maneuverability and room to move
 - 48" passageways
 - Clearances at appliances



Kitchens

- **Kitchens of an aging in place client should be:**
 - Maneuverable
 - Easy to use
 - Flexible
- **Appropriate task lighting**
- **Counters**
 - Varying counter-top heights
 - Base cabinet with roll-out trays
 - Pull-down shelving
 - Open shelving
 - Glass front cabinet doors
 - Lazy-susans



Appliances

- **Features could include:**
 - Easy to read controls
 - Pushbutton controls
 - Large button controls
 - Countertop height microwave
 - Front loading laundry machines
 - Side by side refrigerator/freezer
 - Cooktop with hot surface warning indicator lights



Bathrooms

- **Design solutions include:**
 - At least one full bathroom should be located on the main level of the home
 - Adequate space to move
 - Wheelchair
 - Assistive devices
 - Accessible tubs and showers with seats
 - Install grab bars at toilet & shower
 - Toilet at the proper height for comfort & safety

47 

Bathrooms


- Zero Threshold shower entry
- Grab bars
- Specialty tubs
- Accessible toilets
- Easy to reach controls






Flooring



- **Objectives:**
 - Smooth
 - Non-glare
 - Slip-resistant surfaces
- Use color & texture contrasts to indicate change in surface levels
- **Carpet:**
 - Low pile
 - Less than 1/2"
 - Firm pad
 - Try to avoid using patterned carpets especially on steps or stairs




49 

Exterior


- Provide at least one zero-step entry
- Low maintenance exterior
 - Cladding
 - Landscaping
- Exterior lighting
 - Safety
 - Security
- Ramps
 - Provide 1:12 slope
 - Graspable handrails
 - Large entrance/exit landing
 - Curbs for safety





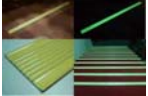
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Miscellaneous Items

- Graspable handles


- One touch faucets



- Glow-in-the-dark floor strips



51 

Miscellaneous Items

- Everyday products for you home that make aging in place easier include:



Touch Screens



Remote Controls



Large Buttons



Organization & Shelving



Lifting Tables



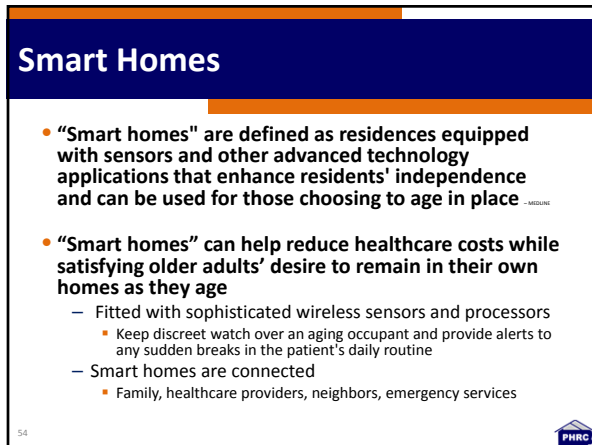
Keyless Entry





Smart Homes


53

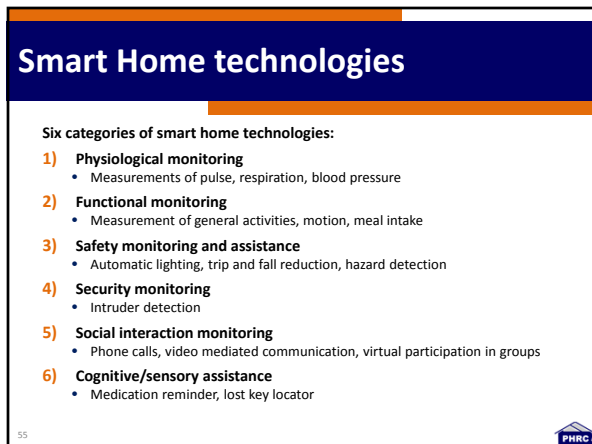


Smart Homes

- **“Smart homes” are defined as residences equipped with sensors and other advanced technology applications that enhance residents' independence and can be used for those choosing to age in place**
- **“Smart homes” can help reduce healthcare costs while satisfying older adults' desire to remain in their own homes as they age**
 - Fitted with sophisticated wireless sensors and processors
 - Keep discreet watch over an aging occupant and provide alerts to any sudden breaks in the patient's daily routine
 - Smart homes are connected
 - Family, healthcare providers, neighbors, emergency services

54






Smart Home technologies

Six categories of smart home technologies:

- 1) Physiological monitoring**
 - Measurements of pulse, respiration, blood pressure
- 2) Functional monitoring**
 - Measurement of general activities, motion, meal intake
- 3) Safety monitoring and assistance**
 - Automatic lighting, trip and fall reduction, hazard detection
- 4) Security monitoring**
 - Intruder detection
- 5) Social interaction monitoring**
 - Phone calls, video mediated communication, virtual participation in groups
- 6) Cognitive/sensory assistance**
 - Medication reminder, lost key locator

55



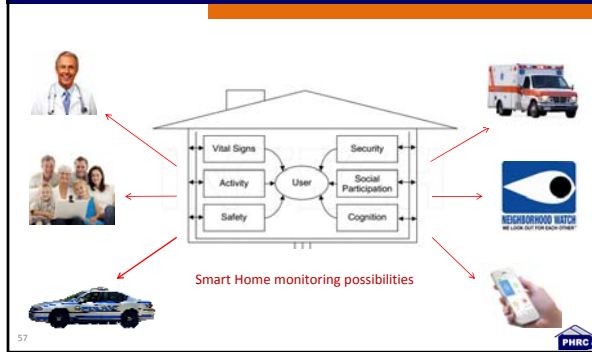
Smart Homes

- **Smart home features:**
 - Personal alarms to a response center
 - Pendants and pull cords
 - Video door entry systems
 - Allow the resident to see who is visiting
 - Open the door remotely
 - Bed and chair occupancy sensors
 - Provide warnings if the resident does not return in determined time
 - Lighting that can be automatically activated
 - A resident gets out of bed – lights illuminate automatically
 - Medical monitoring that can be assessed on site and information forwarded appropriately
 - Pulse, blood pressure and heart rate
 - Increased use of robotics to assist around the house
 - Assists those with mobility restrictions

56



Monitoring Systems



57



Smart Homes – The Future

- **Technology Companies** such as Intel, General Electric, Philips Electronics, and Honeywell are finally starting to deliver "smart home" technologies to the market
 - Watch over its elderly occupant
 - Spot signs of trouble
 - Alert doctors
 - Teleconference physicians into the living room
- **GE and Intel are committing \$250 million over five years to develop products** -Bloomberg Business 2015
- **It is predicted that the market for home monitoring and communications devices could eventually generate \$20 billion per year** -Consultancy Aging in Place Technology Watch

58




Summary

59


Summary

- **What is Aging in Place?**
 - A term used to describe a person living in the residence of their choice, for as long as they are able, as they age
- **The percentage of older Americans has increased significantly**
 - By 2030, the 65+ population segment is projected to be 71.5 million
 - Most desire to remain in their current home as long as possible
- **The goal of a successful aging in place project should be to blend the features in to the home as seamlessly as possible**
- **Projects should be:**
 - Aesthetically pleasing
 - Flexible
 - Easy use
 - Invisible

60 

Summary

- **"Smart homes"**
 - Residences equipped with sensors and other advanced technology applications
 - Enhance residents' independence and can be used for those choosing to age in place
 - Can help reduce healthcare costs while satisfying older adults desire to remain in their own homes as they age
- **Design solutions exist for almost every room of the home**

61 

Summary

