Booming Towards Aging in Place:
"The" 21st Century Specialization for Interior Designers

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August 1, 2009

Table of Contents:

Booming Towards Aging in Place:
The 21st Century Specialization for Interior Designers

Introduction

As we progress through the early 21st century, we are entering an age in which many (if not most) "baby boomers" are reaching the age to retire. With an estimated 71-78 million (U.S. Census Bureau, 2005) baby boomers reaching retirement age (one in five people) over the next 20 years, living accommodations of seniors is becoming an issue that is paramount in America. The Federal Inter-agency Forum on Aging-Related Statistics (2006) projects that by 2050, there will be more than 21 million Americans aged 85 or greater, the fastest growing segment of the older population. The living environment for the anticipated wave of the up-and-coming elderly will be even more critical to them (and their families) than it is to the current elderly population. Though retirement and nursing home options are among the available considerations, most people state that they intend to remain in their homes as they age. Yet, without proper planning and coordination among government bodies, community-based organizations, service-providers, designers, and health professionals to accommodate for that choice, it will be impossible for many to stay in their current residences – because they will find their homes to be too physically challenging – as their bodies succumb to the process of aging.

There is are options to help us circumvent such a predicament: universal design, and e merging technologies. Universal design is about the environment and products for everyone, including those who may be physically challenged. People can make the choice to live in their homes longer – provided they have information and the tools available to make their interiors more accessible (Jackson, R., 2003). In a complimentary fashion, technologies are emerging that will empower the elderly and disabled to be more self-sufficient.

Booming Towards Aging in Place:
The 21st Century Specialization for Interior Designers

Aging in place reflects the desire of seniors to maintain the ability of directing their own lives (Willig, 2005), preferably in their own home. The baby boomer generation is full of individuals who will desire to maintain the independence they have enjoyed their whole lives. Our needs and wants will change as we age, and our environment will likely have to be adjusted to satisfy both of them. Universal design can offer us another housing choice as we age: allow us to remain in the same environment, even as our circumstances change due to reduced abilities, including the naturally-occurring process of aging.

As interior designers, we stand on the threshold of an era where we can command the attention of an inter-connected web of professionals within the community – through our leadership on this area of specialization. It will require fostering cooperation of these people working together as a team – with short and long-term goals, and the skills and innovation of interior design professionals to deliver an optimal living environment that is based upon the client's true needs. Contemporary design needs not only to meet certain standards aesthetically, but meet or exceed standards in accessibility to accommodate the needs of everyone – today, and – as we age into the future.

The Baby boomers

The 'Baby boomers' are a generation of people born from 1946-1964 – a period of time that spanned from the end of World War II, the armistice of the Korean peninsula, and the ensuing conflict in Vietnam – when many soldiers were returning home and were eager to start a family. The result was that a phenomenal amount of live births occurred, earning the nickname 'baby boomers' for those born during this period.

<div align="center">**Booming Towards Aging in Place:**
The 21st Century Specialization for Interior Designers</div>

Baby boomers are a distinct generation – different from any preceding or following them (as of 2009). An ASID study found that baby boomers – by and large – have a higher education level and income than their parents (Mahmood, Yamamoto, Lee, & Steggell, 2008). This suggests that boomers have, and still are, leading successful, flourishing lives. As Americans who have forged prosperous lives for ourselves, we cherish the ideal of independence. When aging begins to affect us, most of us will be unwilling to surrender our independence, and will want to remain in our own homes instead of living in an assisted facility. In 2000, AARP conducted a study revealing that 79% of the people over the age of fifty said they wanted to remain in their own homes as long as possible (Staats, D. 2008). However, many of their homes will be unfit for an elderly person to live in, as they will not satisfy their physical and mental needs as they age.

Why people want to remain in their own home as they age

The desire to maintain control, empowerment, independence, autonomy, self-fulfillment, and to extend our ability to make decisions and choices for ourselves as we age – are strong motivations to age in place – in our own homes. Equally motivating the choice to remain in our own homes as we age is the fear, uncertainty, and doubt fomented due to ageism, and the stigma associated with institutionalization, especially nursing homes. Institutionalization is viewed as limiting choice, independence, dignity and respect. People fear the insecurity, loneliness and loss of autonomy, as well as the unpredictable, isolated, and restrictive living arrangements presented as options in long-term care (Braswell, & Sufficool, 2009).

Health issues of aging

Aging is notorious for the changing and demanding physical needs that are destined to accompany it. There are numerous ailments that can possibly affect the body as it ages. Many

older people suffer from age-related loss-of-balance, gradual hearing loss, and vision problems that create a predisposition of sensitivity to glare and specular reflections, as well as visual discomfort and fatigue caused by poorly-integrated levels of artificial lighting.

Loss-of-balance is a chronic issue affecting many people as they age into their senior years. Approximately 8 million older adults have reported having a problem with balance, 2.4 million have reported having a problem with dizziness (NIH, 2002), and 1.6 million nonfatal injuries from falls treated at emergency rooms across the country (Staats, D. 2008). Balance is vital for people to be able to get around on their own, remain independent, and perform daily activities. Balance disorders are one of the main reasons elderly people fall. Falls, and the seriousness of fall-related injuries can negatively impact the quality of an elderly person's life. If someone falls, it may possibly limit the activities they can do, and strip the person of their ability to live independently – temporarily, or indefinitely. One out of three people in excess of 65 fall every year. Falls are the leading cause of injury deaths for older adults, as more than half of all fall deaths were within the home (CDC, 2006).

Arthritis is another major physical ailment among the elderly, which can also affect balance. An inflammatory disease that causes pain, stiffness, swelling, and loss of joint function, arthritis may also affect tissue in skin, lungs, eyes, the heart and blood vessels. Arthritis may make victims feel sick, tired, and feverish, and usually begins during a person's most productive years. Although there is no "cure", doctors recommend a good balance of rest when the disease is active, and exercise when it is not – while emphasizing the need to reduce stress in general.

Even though many common physical afflictions are obvious, most of us underestimate the mental difficulties of the elderly. Alzheimer's is one well-known mental condition among older

people, which affects memory, thinking, and reasoning skills. Those afflicted by Alzheimer's often have problems thinking and speaking clearly, learning new things, and maintaining short-term memory. It becomes hard for them to handle everyday activities and take care of themselves. Alzheimer's usually begins after age 65, and it is estimated that 4.5 million in the United States currently suffer from this type of dementia (U.S. Census Bureau, 2006).

Other than recognized mental disorders, many older people are simply afflicted by conditions that are not medically recognized as a 'disease'. Their physical condition can cause them mental distress; for example, a person who was once very active can find it psychologically traumatic to be unable to get around or be independent. The stress level of elderly people can be increased due to loss of control, financial security, social issues, relocation, health insurance, and many other related worries. For many, the aging process is accompanied by the fear of abandonment, dependency, and depression.

Environment is a Major Factor in the Aging Experience

According to Willging (2005),

> *"Aging in place reflects an attitude and an environment enhancing the ability of seniors to maintain personal control over their lives, to the extent practicable but in ways important to them".*

As we enter – then pass middle age, our home may dictate the level of our personal empowerment and self-fulfillment with our ability (or inability) to do things for ourselves, affecting our independence and happiness. These factors are very important as the housing arrangements of the retiring baby boomers are starting to become an issue. Many whom will choose to remain in their own homes will want to maintain the highest level of independence and

satisfaction as possible, without being incredibly hindered by the physical and mental burdens of aging.

In order for elderly to stay happily in their homes, their houses have to be accessible to them and, and have to accommodate their changing needs. Many current home designs are not suitable for an elderly person, or someone with disabilities. Families that choose to adapt their homes to be accessible to an older family member may promote extended independence. As Braswell and Sufficool (2009) stated, "Independent living does not mean doing everything alone, not needing anyone, or living in isolation; it's about having the same choice that everyone else has."

Trends show that seniors are returning to the cities to avoid the isolation associated with living in rural areas (Masotti, Fick, Johnson-Masotti, & MacLeod, 2006)). The elderly may initially begin to rely on their friends and family for support, but the increased density of urban areas also offers easier access to wider variety of healthcare, recreational amenities, and support services. The need for assistance to do seemingly simple and private tasks – such as using the restroom or bathing – not only reduces their independence, but their quality of life – and may result in isolation from friends and family, and increase the risk of clinical depression.

What the 'needs' of aging baby boomers are likely to be

Since it has been established that a majority of baby boomers will prefer to remain in their own homes as long as it is practical and feasible, special needs and considerations will require an assessment of the environment to ensure it is flexible and usable by all – the home dweller(s), care-givers, family members, friends, and guests alike. Barriers in and around the home will need to be removed to improve mobility. Features must be incorporated to reduce the potential for

accidents and injuries, as well as minimize required physical effort. There is one answer to this issue of accommodation: universal design.

Universal design as a simple answer

Universal design is a 'one-size-fits-all' idea. Universal design makes a home comfortable for anyone living in it and gives them choices – whether they experience physical and mental ailments, or not. It accommodates anyone and everyone, including those with disabilities, the elderly, and children – in a way that isn't stigmatizing or limiting to any of the users. If people make the choice to utilize universal design early in their lives, they can be well-prepared should they experience a loss of mobility, and they would be able to remain comfortably and independently in their own homes without having to incorporate adaptations.

If efforts were put forward to design a majority of new houses and communities with universal design, it would increase the satisfaction of the public as a whole. Many elderly people that wish to remain independent are forced to retire to an area that is specifically designated for retired people. People with disabilities often have no other option than to live in a place specifically designed for the physically or mentally challenged. If more houses were to be designed to be universally accessible, especially in regular neighborhoods, a higher level of diversity would be plausible among neighborhoods across the nation.

How it can be achieved

Universal design can be achieved through either one of two ways: by incorporating it into the original design of a house, or retrofitting a house to fit standards of universal design. Universal design can be applied to all parts of the home.

Booming Towards Aging in Place:
The 21st Century Specialization for Interior Designers

Where to start

Beginning with the no-step entry and exits of the home, openings and doorways need to be widened, wall corners need to be rounded, and ramps may also need to be installed for wheelchair access. Installing certain devices in the home can make it a safer environment. Fire extinguishers, smoke detectors, and carbon monoxide detectors should be installed in every home. Emergency contact devices and daily calling services help to prevent prolonged periods of lying immobilized on the floor. Safety features should always be the first consideration and concern.

Home furnishings also play a major role in universal design. Like the walls in the home, the corners of home furnishings and extended countertops should be rounded. Non-skid, resilient flooring should be installed in place of carpeting, and throw rugs should be avoided. If rugs and carpets are used, they should be dense, low-pile, and should transition into other flooring with ease. Secure hand rails should be installed in stairways, and handle or lever-type controls should replace knobs on doors, windows, plumbing fixtures, and cabinets.

Grab bars need to be installed in tight spaces, such as bath and shower stalls, as well as the toilet area. The installation of features such as raised toilet seats, bath stalls, and bathtub and shower chairs can be done in ways that improve the value of the home, as well as make the bathroom accessible to all in ways that allow people with disabilities to remain self-sufficient.

Lighting concerns

Lighting is also an important aspect of the environment that must be considered for improvement. Ambient light must be increased throughout the home, but especially in dark areas

such as stairways. Night time illumination also needs to be installed around and inside the home, especially on major pathways to the entry, in hallways, stairwells, and bathrooms.

Safety features

Installation of sufficient safety features such as fire extinguishers and smoke detectors is important, but assistive monitoring technology should also be considered to provide assurance of assistance when needed. Inexpensive home monitoring and video chat technology have been shown to not only reduce feelings of isolation, but especially in the event of injury (Demiris, Oliver, Hensel, Dickey, Rantz, & Skubic, 2008).

General considerations

There are certain measures that can be implemented in all of the rooms of a house, whether the house is being designed or retrofitted. If a caregiver or family member(s) will be living with one who needs assistance, the need to accommodate them should be incorporated into the home plan. The lighting levels can be increased in every room to account for diminishing eyesight. As people age, they require about three times the amount of light to see as well as those who are younger. (Lawlor and Thomas, 2008)

Furnishings can be arranged to optimize the use of natural light and increase levels of ambient light. Clutter should be reduced to minimize hazards. To ensure orderliness, the design of cabinetry and storage spaces should be efficient. Older people afflicted by arthritis have a difficult time turning knobs. Every knob in the house – doors, cabinets, drawers, closet doors, and anything else that requires opening – should be replaced with levers or handles. These are but a few of the considerations when designing, or altering a home with universal design principles.

Standards of Accessibility

When designing a new home, certain standards of accessibility should be recognized and accounted for. The design should have an accessible path. A flat, one-level house without stairs is the best design to eliminate any climbing, and reduce the likelihood of any falls. The walkway to the house should be flat with a no-step entrance.

Doorways must also be considered for accessibility. Each doorway should have at least a thirty-two-inch clearance width to accommodate people in wheelchairs. Rounded corners are vital – from walls to countertop edges to coffee table edges – all corners in the home should be rounded to help avoid bruises or tears to the skin. Non-skid flooring should be used to help prevent falls.

Houses that are being retrofitted should still maintain similar design standards. The flat walkway and no-step entrance should still be used, and so should the thirty-two-inch doorway clearance. Edges should be rounded and there should be non-skid flooring for the same preventative reasons. For houses with stairs, it is crucial that the ambient lighting be increased in stairways to ensure it is easy for those with weaker vision – to be able to see the steps. Secure hand rails should be installed to promote safety and reduce the probability of falls. On the main floor, there should be a bathroom that is wheelchair-accessible. The bedroom of anyone physically challenged should also be on the main floor to decrease the amount of stair climbing required of him or her.

Bathroom areas

Bathrooms are not traditionally designed to accommodate the physically challenged. The knobs on the sinks and in the showers make simple tasks such as washing one's hands and taking

a shower extremely difficult for those with arthritis. The barrier on tubs can be strenuous for older people to step over, and often to prove to be a fall hazard. The elderly generally have limited postural control; using the toilet can require great amounts of energy for them to get on and off of it. If the doorway is not wide enough or the bathroom not big enough, wheelchair use will be impractical.

There are many alterations to a conventional bathroom that can certify it as universally accessible. In addition to changing all knobs to handles or levers, freestanding toilet paper holders provide more flexibility and convenience. Installing hand supports and raised toilets often helps those who have problems with postural control. The toilet should be at a comfortable height of seventeen to nineteen inches. Grab bars reduce the likelihood of injury in the bathroom. A recent study found that elderly people prefer to use side-support grab bars at elbow and chest height when rising from the toilet, and at buttock height when lowering (Dekker, Buzink, Molenbroek, & de Bruinn,2006). Grab bars should also be installed in the shower. Shower stalls should be step-free or 'curb-less' to minimize the hazard of falling. To ease the task of bathing, a bench with an eighteen-inch seat height can be placed in the shower area. The shower head should be removable, thus enabling hand-held use. Showers can also be designed without any enclosures provided to allow for more space.

Kitchen areas

Alterations recommended for bathrooms can also be applied to kitchens. Faucet knobs can be changed to levers. Cabinets should be lower to reduce climbing or reaching. Heavy lifting can be eliminated with things such as full-extension rollers on drawers. Kitchen cabinets should be flexible and interchangeable to allow residents to adjust cabinets to their particular needs. When

installing cabinets, modular interchangeable components should be chosen so that remodeling isn't necessary for people with disabilities. It increases their self-esteem by not requiring separate "handicapped units" in which to live.

Careful space planning can make a major impact on the quality of life for an elderly person. Obstruction of pathways, thresholds, and throw rugs can be a threat to the elderly, as they are easy to trip over. Soundproofing rooms should be a priority too, as background noise can be frustrating and distracting for the hearing impaired. Fabric on window treatments and upholstered pieces within a room can act as an acoustical buffer. Upholstered walls, or segments of walls, and large textile hangings also absorb background noise. Seating that has arms that extend to the front edge provide more stability. Seat heights of eighteen to twenty inches make it easier to get in and out of chairs and sofas. The proper use of contrasting colors and patterns between floors, walls, tabletops, and countertops helps to avoid accidents. With universal design, it is important to remember that physical appeal doesn't need to be sacrificed for accessibility; and often, a beautiful home reduces stress and provides a happier environment for an elderly person.

New products and technology

In addition to home monitoring and video chatting, technological advances in building products for the home – and gadgets for the consumer – are expanding the options to help us age in place. Bob Vila advocates some immediate and affordable modifications for homes, such as installing plumbing fixtures that prevent scalding and medicine cabinets offering refrigeration. In the kitchen, the alternatives to upper cabinets and standard cabinet storage systems include Lazy-Susans, swing-out and roll-out shelving, as well as drawer/peg systems – such as the

customizable lines offered by KraftMaid. Higher toe kicks, knee spaces for wheelchair users at countertop surfaces, side-opening wall ovens, drawer dishwashers, double-drawer refrigerators, and 3-way switches at the top and bottom of staircases round out Bob's recommendations for greater accessibility and reduced physical exertion.

Yet, a survey conducted by TOTO, an innovator as the world's largest plumbing products manufacturer, revealed that doctors and nurses believe that personal dignity is the number one reason why – and when – someone chooses to live in an institutionalized setting. Although there is a point at which someone desires the support of friends and family as they age, that diminishes completely when they lose their independence due to the difficulty of maintaining personal hygiene. At that point, they no longer wish to impose on their friends and family, which may explain why many elderly people have become more isolated as they age and become frail. As eloquently and honestly stated by a respected Septuagenarian (my father), "Bud" Ottis Bishop in 2007,

> *"It's one thing to lose your privilege of driving, but to lose the ability to facilitate oneself in personal hygiene matters – especially toilet cleansing and bathing…*
>
> *is downright humiliating."*

Products such as TOTO's Washlet toilet seat and toilet combinations are design-conscious, environmentally-sensitive, sustainable, and most importantly – accessible. The Washlet delivers an automatic, hands-free flushing system and a sensor-activated lid that automatically lifts as you approach the toilet and lowers as you walk away. A convenient, easy-to-use remote control

allows the user to open and close the lid, activate front and rear washing, the heated seat, and the warm air dryer, as well as other features – including flushing the toilet.

When it comes to controls and gadgets, products by Apple computer find themselves worthy of consideration – not because Apple's products were specifically designed for people with disabilities, but due to their inherent easy-to-use products that incorporate principles of universal design and accessibility. As an alternative to expensive, bulky video phone technology, Apple offers a 13″ wide-screen laptop that comes with a built-in video camera and free software to facilitate video chatting with friends and family, including having up to 4 computers in the conference simultaneously – ready to use out of the box for under $1,000. It may even get used for other things, like email, pictures, or who knows?

The iPhone is another popular product that spans the ages; and, now it includes a "speech engine" that allows voice-activated commands, and it works surprisingly well. Through Apple's iTunes App Store, developers are already looking at the opportunities to hook into the speech engine for home automation. There are already a number of applications available that allow the user to control the home environment, but voice control and confirmation would increase universal appeal – who doesn't want to speak commands at the computer?

Living in a stressful environment can increase the probability of injuries, and incorporating universal design can maximize safety, as well as the marketability and "sale-ability" of the home. Universal design addresses the accessibility and versatility like no other design concept or principle. It provides the opportunity for elderly people and those with disabilities to live independently – by supplying them with choices to make their house adapt to their changing needs. Through universal design and developing assistive technologies, people can extend the

time that they live in their own homes – happier, and easier – allowing almost every room and aspect of a house to be accessible to almost anyone. The smallest changes, such as the type of doorknobs throughout the house – to the larger adaptations, such as widening doorways – combine to generate a house that is fully functional to everyone within. As aging affects people physically and mentally, the flexibility of their environment will alleviate some of their stress. With tens of millions of baby boomers beginning to retire, universal design and new technologies will become an important key to housing and satisfying a large portion of the American population. By itself, universal design opens larger doorways to diversity – allowing elderly and disabled people to have more options of living arrangements – including regular neighborhoods – with people of all ages, races, and abilities. With that in mind, it is incumbent upon design and building professionals – especially interior designers – to seize the opportunity in advocating partnerships with every legitimate resource available within the community that is willing to change the world – one home at a time.

Who will be involved, and whom will benefit

As interior designers, universal design is within our domain. With 20% of our population entering retirement age through the middle of the 21st century, aging baby boomers present an ideal demographic for marketeers salivating at the thought of almost 80 million potential like-minded customers looming on the horizon. The sheer size of this demographic suggests that we will all benefit from the changes that will be necessary to accommodate them, including public, government, and healthcare policies.

To prepare solutions for this impact on society, Jackson (2003) states that, "public health professionals must work closely with experts in other fields: architects, planners, policy-makers,

social scientists, traffic engineers, developers, law enforcement officers, economists, social marketers, and others."

Although the healthcare debate for Americans had reached a crescendo with the current presidential administration's intention of providing "affordable" healthcare to all of us, the debate will be getting a lot louder as we advance in age through the 21st century. If we wish to maintain control over the decision-making process of where we live and how we get the care we need, we must work together with professionals within the community as well as at the federal level to provide the assistance and support that everyone will eventually need to make the most-informed decisions about end-of-life care.

This team includes professionals in design, engineering, building, and planning, government and community-based agencies, politicians and policy-making experts, and most importantly – the aging population. Health professionals are also an important part of the team that includes doctors, nurses, physical and occupational therapists, as well as affordable, quality home-care service providers. Karl & Weed (2006) advocate that, "New strategies and approaches should be developed to increase housing options, including home modifications, linkage between housing and services and various forms of supportive housing". The success of this teamwork in these areas will be realized by ourselves in the form of lower costs and improved quality of life: as care recipients, their families, and as taxpaying American citizens.

When the home environment should be evaluated

It is important to discuss life care issues at an early point, without the occurrence of an actual life-changing health event to pressure one into making hasty, or bad decisions. Although people are increasingly aware of instruments for planning for their eventual death ,such as advance

directives, living wills, life insurance, and even burial funds, very few have planned for how they will maintain their independence, control, and self-dignity in the years they are still alive.

The discussion can begin casually with doctors and close family members (Chen, Mefford, Brown, Hsu, Clem, & Newman, 2008). Information gleaned from those conversations can be used to investigate recommended considerations, as well as explore other options – as time permits. At some point, the consumer may become aware of qualified life-care planners such as Certified Aging in Place Specialists (CAPS), occupational therapists, and other home assessment professionals such as designers, architects, and builders.

The assessment of home care needs is a crucial part of planning for aging in place, and it is also one of the most expensive up-front costs. The requirements to be gathered and considered not only include meeting the client's health care needs with primary care physicians, nurses, and home healthcare specialists, but the full range of structural, interior, illumination, and safety needs from architectural and interior design standpoints as well. According to Karl & Weed (2006), *"teamwork is a must"* among designers, home health care assessment consultants, and the client.

In addition to a designer's myriad of universal design considerations already mentioned throughout this paper, the home health care consultants must account for the client's own personal interests and hobbies, the extent of the client's mobility, mental impairments, medical and assistive care equipment, doctor care guidelines, as well as the required level of assisted home care.

A comprehensive on-site survey and assessment is in line with typical initial consultations provided by designers, ranging in two to four hours in length. Flat rate fees may be considered

more favorably over hourly rates when offering a complete home assessment and a recommended life care living solution. It will include the time required for collaboration with health care professionals, the research necessary to create design specifications, a written report, and may include an estimate or budget outline, as well as drawings.

Summary

Baby Boomers will present the largest challenge to social infrastructure and healthcare that this country has ever seen, surpassing the capacity of the existing systems, programs, entitlements, and policies currently in place. Alternatives have to look at how to reduce the potential costs of housing and caring for tomorrow's elderly Americans. Aging in place, universal design, new technologies, and community-based home care solutions offer compelling opportunities for designers to consider this to be "The" most promising area of practice specialization in the 21st century.

Together with financial advisors, designers healthcare professionals and others will form a team with the client that creates a functional, safe, hygienic, independent environment that offers attendant care, transfer and other activities (Karl & Weed, 2006).

Suitable non-institutional housing with a service provision is on a path to becoming the optimal, affordable, universally acceptable, and decent alternative to nursing home care (Chen, et al, 2008), and designers should take advantage of this "booming" opportunity.

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Booming Towards Aging in Place:
The 21st Century Specialization for Interior Designers

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