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Smart Homes – Designing and
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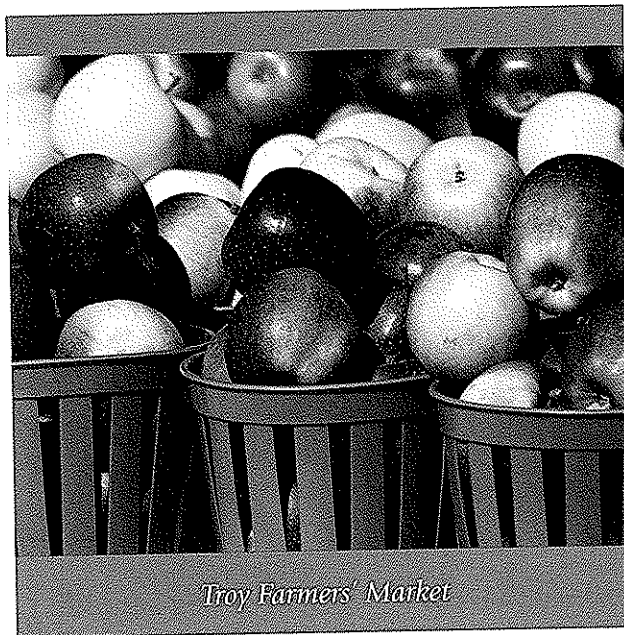
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Smart Homes – Designing and Redesigning Homes for Aging in Place

By Patricia E. Salkin, Esq.

Introduction

Communities must be welcoming to a variety of housing options as residents age. While media images conjure two ends of a spectrum—acute care nursing homes for people unable to care for themselves and high-end choices for active, healthy seniors who are also affluent—the reality is that so few people need or can afford these options. A common myth, often dispelled, is that as people age and eventually retire, they move in large numbers to warmer and drier climates in the South and West. Yes, some people do either permanently relocate or spend winters in other places, but the vast majority of seniors do not fit this pattern. Many studies have demonstrated that people prefer to “age in place,” or stay in the community where they spent a significant part of their life. The National Aging in Place Council defines this concept as “[t]he ability to continue to live in one’s home safely, independently, and comfortably, regardless of age, income, or ability level. It means living in a familiar environment, and being able to participate in family and other community activities.”¹ In addition to the practical challenge of affordability, many homes just are not equipped to accommodate the changing needs of an aging owner. New home architectural designs, including remodeling of older homes, along with the introduction of new home-based technologies are being incorporated into housing projects across the country aimed at aging baby boomers to enable them to age in place more comfortably and safely.



Education and advocacy is needed to ensure that government programs, policies, and regulations encourage the development and redevelopment of aging in place housing. This includes audits of local planning and zoning laws and regulations to determine whether amendments are needed to facilitate the granting of permits on an expeditious basis, since often retrofitting projects need to be done unexpectedly and quickly following a change in physical health; the adoption of plans and regulations to accommodate new state-of-the-art housing designs specifically for seniors; and grant and loan programs to help seniors on fixed and low-income access desperately needed capital to make necessary repairs.

Universal design and retrofitting of existing homes to enable aging in place

Universal design is the idea that a home is designed and functional for everyone, regardless of any sort of physical impairment that a person may have. Few existing homes are automatically suited for people who desire to span the decades in the same residence as their bodies and minds

change with the aging process. However, modifications to both the inside and outside of the home can be made easily to enable this goal. One initial problem in most homes is the ability to enter. Steps and steep inclines may become impassible barriers for people with arthritis, bone and joint issues, and other common physical impairments. Designing and redesigning homes to permit entry by reducing or eliminating steps to an entryway or by installing a ramp can help eliminate the problem. In addition, the installation of external and internal handrails or grab bars (along walkways and hallways and in bathroom showers), ramps, and an easily accessible bathroom can make a world of difference. Other modifications, such as widening doorways to allow access by a wheelchair or electric scooter, may be more costly but necessary.

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One Website offers a checklist of things seniors can do to make their homes more age friendly that includes, in addition to the above mentioned items: changing faucets to allow for floor pedal operated sinks; lowering counters in kitchens; installing an elevator or chair lift in multi-story dwellings; and the repositioning of light switches and outlets no higher than 48 inches from the floor.² Knobs or handles on cabinets can be easily changed to enable less frustrating access, and cabinets can be repositioned to allow for more comfortable use. The National Association of Home Builders now offers certification for an Aging in Place Specialist (CAPS), which indicates that the person has the technical, management, and customer service skills necessary to assist the public with home modifications for aging in place.³

When designing a new home, a number of companies now promote floor plans and building options that are specifically designed to allow for aging in place.⁴ Single story ranch style homes with wide hallways and open spaces, as well as details similar to those discussed above for retrofitting homes, are common design elements. In addition, level flooring and level transitions from carpeted areas to tiles or other floor coverings are smoother.


Smart homes for seniors

Technology has evolved from the early 1990's version of LifeCall or LifeAlert where a pendent is worn by the senior so he or she can summon emergency help when getting to a telephone is not possible. Now, motion sensors and other high-tech devices can be used to notify emergency responders even when the senior is unable to push a button because the senior may be unconscious or injured. In addition, sensors and wireless communication devices can be installed in homes to monitor vital signs and this information can be conveyed electronically to medical providers, caregivers, and/or family members regardless of geographic location. Pressure sensors strategically placed on the floor can register how much a person weighs and if the person is walking with a limp, and sensors placed in a bed can register how well a person slept and when the person gets up. Another technology, Stove Guard, is available to turn off a person's stove when it is left on for too long. In addition, installed home-based technology can monitor whether a person

has visited his or her medical dispensers and what medication was taken and when. Robots are now being used to assist people challenged with memory loss to remind them to eat, sleep, and take medication. Vibrating bracelets are also being used to remind seniors when it is time to take a pill. Another technology that will soon be available in homes is an updated caller ID-like system that will flash a picture of a caller and the relationship to the person who suffers from memory loss.

New technology can be installed to improve an individual's ability to navigate the home. For example, one company builds houses that employ some of the newest technology, such as a front door that can only be accessed by a fingerprint scanner. This eliminates the need to find keys and the difficulty of getting the keys in the appropriate locks. Other technology used includes sensors that activate lights on the floor to create a lighted walkway for the homeowner. This can be especially helpful when someone awakens during the night to go to the bathroom. Another technology helps to control every light and electronic device in the house with one remote. An automatic door feature benefits people using wheel chairs, scooters, or walkers and those who cannot physically open a door. Another benefit of the use of technology to assist with closing doors and windows and turning off lights when not needed is the savings realized from greater energy efficiency.

Conclusion


The advent of computers and the internet have enabled the refinement of many affordable technologies and modifications to enable the design and redesign of "smart homes" that can maximize independence and the ability to live longer and more safely and comfortably in one's own home. State and local government programs should recognize the importance and availability of these opportunities and ensure that senior homeowners can expeditiously acquire needed approvals and building permits to accomplish desired age-friendly home features. Laws, including the Americans with Disabilities Act, already exist that require local governments to make reasonable accommodations in their regulations to permit these types of amenities. Further, existing grant and loan programs should be modified, where possible, to include the types of home repairs/modifications needed to enable seniors to age in place. 

¹ <http://www.naipc.org/Default.aspx?tabid 3>

² <http://www.toolbase.org/Home-Building-Topics/Universal-Design/aging-in-place-checklists>

³ <http://www.nahb.org/category.aspx?sectionIDH6>

⁴ http://www.familyhomeplans.com/search_results.cfm?collectionE&mc&action=1&OrderCode

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