



Excellence in Design: Optimal Living Space for People With Alzheimer's Disease and Related Dementias

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Cognitive impairment is a growing, wide-reaching, and universal issue that impacts all different cultures and races—

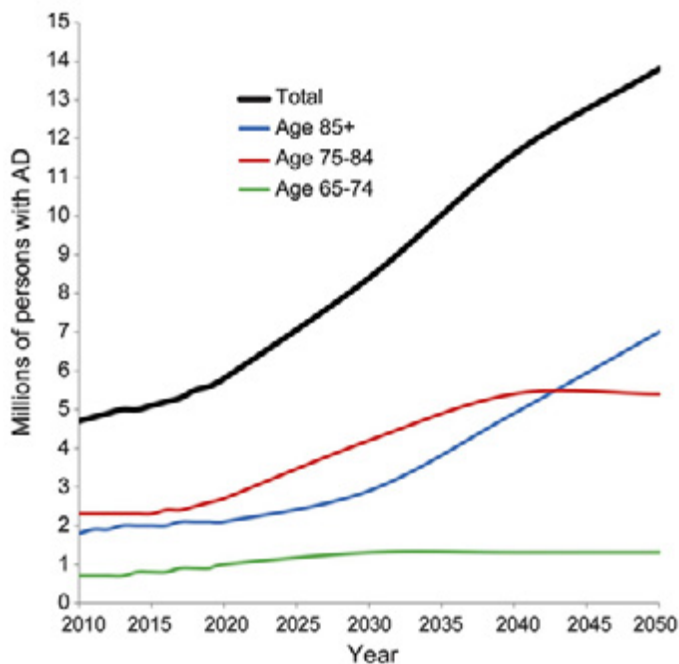
even different age groups, not just adults 65 and older. Cognitive decline may be a result of Alzheimer's disease, which contributes to 60 to 80 percent of cases of dementia,¹ or it could be due to another factor, like Parkinson's disease, Down syndrome, traumatic brain injury, or excessive alcohol consumption.

For the purposes of this paper, the term "Alzheimer's disease" refers to Alzheimer's disease and related dementias. Related dementias include frontotemporal, Lewy body, mixed, and vascular dementia. This collective definition of Alzheimer's disease is consistent with the approach both Congress and the U.S. Department of Health and Human Services (HHS) use in the National Alzheimer's Project Act.²

The term dementia describes "a group of symptoms that result from the death of the brain's nerve cells, or neurons, including changes in memory, behavior, and one's ability to reason and think clearly."³ Many forms of Alzheimer's disease proceed in stages, gradually affecting memory, communication and language, reasoning and judgment, and visual perception.^{4,5} The effects of the disease can vary greatly between individuals, and even day to day for the same person. Typically, the disease progresses for an average of eight to 10 years from diagnosis, ultimately leading to a person's inability to perform activities of daily living (e.g., bathing, dressing, eating), followed by total loss of independence and death.

People with Alzheimer's disease may live in a private home or within a senior living care facility. Senior living residences specifically designed to support people with Alzheimer's disease vary widely, both in form and programming. Some residences are provided in assisted living settings and others in skilled nursing facilities. They can be called anything from a special care unit (SCU) to a memory support program. Some long-term care chains have even adopted branded names for the areas that house people with Alzheimer's disease. Where people with cognitive impairment live and how they are cared for and supported is a growing concern in the U.S.—particularly as the baby boom generation ages.

With advanced age being the greatest known risk factor for Alzheimer's disease,⁶ the aging of the baby boom generation is heavily influencing the projected increase in incidence of the brain disorder. "By 2050, excluding the development of medical breakthroughs to prevent, slow or stop Alzheimer's disease, it is projected that the number of individuals in the U.S. aged 65 years and older with the disease will triple, from 5 million to 13.8 million. During this same time, the number of persons aged 85 years and older with the disease is projected to reach 7 million, accounting for half (51 percent) of the 65+ population with Alzheimer's."⁷ Currently there are no effective treatments to prevent or reverse Alzheimer's disease, and a cure is not yet within reach.



The projected number of adults 65 and over in the U.S. with Alzheimer's disease will increase greatly by 2050.

Courtesy of: Hebert, L.E., Weuve, J., Scherr, P., and Evans, D. (2013). Alzheimer disease in the United States (2010–2050) estimated using the 2010 census. *Neurology*, 80(19): 1778–1783.

There is a significant economic impact directly associated with Alzheimer's disease care, from increased hospitalizations⁸ to increased costs for delivery of care and the treatment of other co-existing conditions, such as heart disease and diabetes—both risk factors for Alzheimer's disease. "The annual healthcare costs associated with dementia (including formal and unpaid care) are as high as \$215 billion, rivaling the most expensive major diseases, including heart disease and cancer. If the age-specific prevalence rate of dementia remains constant, this figure could double by 2040."⁹

Alzheimer's disease also has a tremendous impact on the country's population of family caregivers—spouses, adult children, teens or other relatives who are caring for someone with Alzheimer's disease. Family caregivers' quantity and quality of work are also influenced, from lost wages due to days off of work to having to take a leave of absence or even retiring early.¹⁰ People across the senior care and Alzheimer's disease realms have witnessed and listened to stories about family caregivers being both physically and mentally exhausted from caring for a loved one with Alzheimer's disease—a situation dubbed the "36-hour day."¹¹ Studies show that caregivers of people with Alzheimer's disease suffer from more physical and mental health issues and premature mortality than caregivers of people with another disease.^{12,13,14} It has been said that "without respite, the caregiver becomes the second victim of the disease."¹⁵

Impact On Work Life Due To Caregiving Responsibilities



The effect on work caused by caregiving for someone with Alzheimer's disease is varied and significant.

Courtesy of: The Alzheimer's Foundation of America (AFA) and Harris Interactive, Inc. (2008). *Investigating caregivers' attitudes and needs (ICAN 3): Life of a sandwich generation caregiver* [PowerPoint Slides]. Retrieved from <<http://www.alzfdn.org/Publications/surveys.html>>

With all these factors converging, the U.S. is facing a growing and unprecedented need to support people with Alzheimer's disease. As we await advancements in medical science, we can proactively support people with Alzheimer's disease and their caregivers by bolstering both hands-on care and the physical environment in which they live, whether in a private home or through the sensitive design of specialized memory support facilities. Integral to providing person-centered Alzheimer's disease care is ensuring that individuals' physical home environments are maximally supportive.

This white paper, *Excellence in Design: Optimal Living Space for People With Alzheimer's Disease and Related Dementias*, addresses the evolving needs and desires of the growing population with cognitive impairment and their families by presenting recommendations for the design of care settings that would facilitate high-quality, comprehensive, person-centered care. The goals of this report are to:

- present a philosophy of both care and design that will help change the long-term care landscape to meet the needs of all stakeholders—residents, family and professional caregivers, facility management, and communities;
- reinforce to both designers and care providers the importance of maximizing the remaining strengths of residents with cognitive impairment so that they may live in a dignified, homelike (rather than institutional) environment; and
- foster, through raising awareness, the development of a cadre of architects and interior designers interested in specializing in the design of supportive and therapeutic residential settings for people with Alzheimer's disease.

Simply, it boils down to one truth: **Everyone wants—and deserves—a supportive place he or she can call home.**

A Brief History of Alzheimer's Care Facilities

Just as advocates are increasingly raising awareness of Alzheimer's disease, from the symptoms to the importance of better and earlier diagnosis and treatment, there has also been an evolution in the philosophy and environments of care. You may even consider it a revolution, considering where the industry is now compared to where it was not too long ago.

From the early-1900s to late-1950s, people with Alzheimer's disease were typically admitted to institutional mental hospitals. In the 1960s, the shift from mental hospitals to nursing homes began. The passage of Medicare and Medicaid in 1965 provided the financial support necessary for many individuals with cognitive impairment to move into skilled nursing facilities. In the 1970s, facilities began to introduce active therapies to focus on helping people maximize remaining abilities. In addition, researchers and family members alike began to call for improvements in the physical environment to compensate for people's functional and cognitive losses. There was also a dramatic growth in the nursing home sector that was, in part, fueled by accommodating people with Alzheimer's disease.

However, even into the early-1980s, for people with Alzheimer's disease, there were few specialized care facilities; behavioral issues were treated with physical or psychotropic restraints; and there was a debate about segregating versus integrating people with Alzheimer's disease into the overall long-term care populations—particularly because people with Alzheimer's disease were viewed by some care providers as “problems,” as people who did not fit in at existing long-term care communities.

In the mid- to late-1980s, advocates and families began mobilizing grassroots efforts to further improve senior living residences for people with Alzheimer's disease. In 1987, President Reagan signed the Nursing Home Reform Amendments of the Omnibus Budget Reconciliation Act¹⁶ (OBRA 87), which set a national minimum standard for the care and rights of people living in certified nursing facilities, including legislation on “new opportunities for potential and current residents with mental retardation or mental illnesses for services inside and outside a nursing home.”¹⁷

Although senior living communities were making progress toward providing optimal care for people with cognitive impairment, not much was being done to ensure that the physical environment of long-term care settings was appropriate for individuals with Alzheimer's disease. Then, in the late-1980s, the architecture firm Perkins Eastman joined the Presbyterian Association on Aging (now called Presbyterian SeniorCare) to ask a simple, but very important question: *“How can we do this better?”* This led to a collaboration between the two organizations to develop Woodside Place, located in Oakmont, Pa.

Woodside Place: A Model of Residential Care

The Woodside Place project began with the formation of a multidisciplinary team, including specialists in dementia, geriatrics and architecture. The team saw the need for a better kind of therapeutic environment to address the increasing number of people with mid-stage Alzheimer's disease who were being placed in nursing homes—despite their otherwise good physical health—because limited other options were available to them.

To find a better solution, the team explored the limited number of existing alternatives in the U.S., as well as around the world. The research team visited the state-of-the-art facilities of the time, including the Corinne Dolan Alzheimer Center in Chardon, Ohio; Gardiner House in Gardiner, Maine; Lefroy Hostel in Bull Creek, Western Australia; and Woodside in Birmingham, England.

Influenced by these site visits and many interviews with academics, gerontologists, service providers, and people in regulatory positions, the team conceived of a non-institutional, resident-focused model with 10 key principles:¹⁸

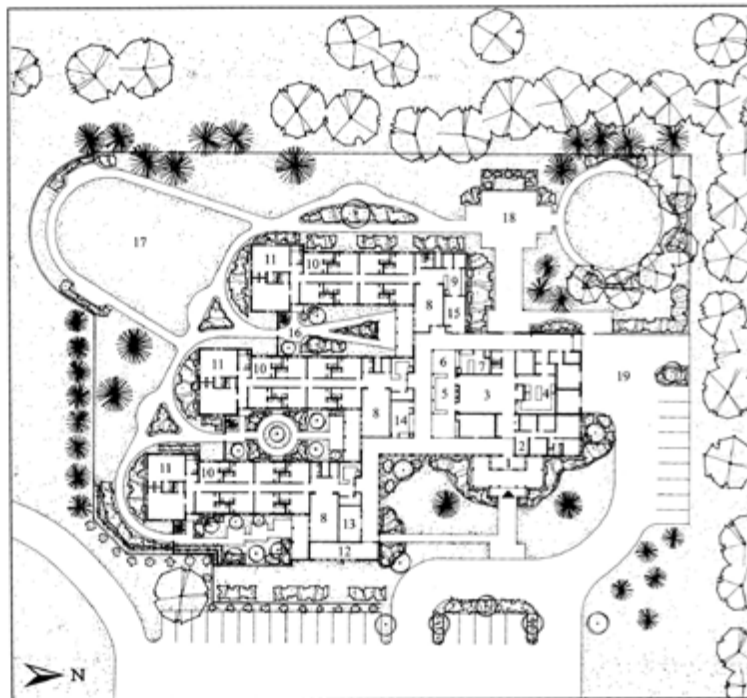
- Enable residents to maintain their independence for as long as possible, without jeopardizing their safety
- Respect the dignity of every person
- Acknowledge each person's need for both privacy and community
- Provide individualized care and embrace flexible daily rhythms and patterns
- Offer focused and appropriate stimulation, avoiding excessive distraction as well as sterile monotony
- Find opportunities to engage residents along their walking paths instead of trying to discourage wandering
- Create small group environments that support relationship-building
- Introduce alternative wayfinding systems into the environment (i.e., environmental cues to help residents navigate through the building)
- Design a residential (non-institutional) environment in layout, scale, and architectural language
- Encourage family and professional caregiver participation

The resulting residence opened in 1991. Woodside Place became one of the first of its kind in the long-term care industry where design goals directly connected the physical environment to the philosophy of care. Woodside Place is a freestanding assisted living building designed to serve a small population (36 individuals) with mid-stage Alzheimer's disease. There are 23,000 square feet of interior space and about 8,000 square feet of secure landscaped gardens. The building is divided into three household wings, with 12 residents in each wing.

Each household includes a small dining room, sitting spaces, and a residential kitchen that create familiar settings for familiar experiences. Most resident bedrooms are single occupancy and all have direct access to a private half bathroom. The environment also recognizes the difference between public and private spaces, like you would find in a traditional home: Bedrooms are off of more private hallways, away from the common core. To further respect the hierarchy of privacy, the building provides specialized common spaces (such as larger activity rooms) outside the households, which all residents can use.

Woodside Place

1. Entry
2. Administration
3. Great room
4. Main Kitchen
5. Library
6. Sitting Area
7. Country Kitchen
8. Living Room/Dining Room
9. Pantry
10. Single Bedroom
11. Double Bedroom
12. Quilt Room
13. Music Room
14. Arts & Crafts Room
15. Entertainment room
16. Secure Courtyard
17. Secure Wandering Area
18. Patio
19. Service Yard



Woodside Place, designed over 20 years ago, embodies the principles behind today's cultural change movement.

Courtesy of: Perkins Eastman

Compared to other dementia facilities of the time, the scale at Woodside Place went from a large institutional setting to a much smaller building. The health care/medical model changed to a “residential Alzheimer’s facility” that was licensed as a personal care home. The care philosophy switched from attempting to pull people with Alzheimer’s disease into our world (known as “reality orientation”) to our going into their world and allowing residents to be who they are (e.g., using validation and/or reminiscence techniques). The setting supports a model of care that empowers people and improves the quality of residents’ lives.

The Legacy of Woodside Place

The pivotal insight from the development and evolution of Woodside Place was that a social model of care, rather than a medical model, would better sustain the residents. A medical model of care views the resident as a patient—a person with a disability or “problem” that could be addressed through medical intervention. This problem belongs to the afflicted individual. For example, in the medical model, if a person with Alzheimer’s disease could not recall how to get back inside the building after strolling through the senior living residence’s garden, it would be the person’s problem.

A social model of care takes an alternate approach: The resident is limited by the societal context and infrastructure that surrounds him or her. So, for the same example of a resident who is unsure of how to re-enter the building, the social model recognizes that the design of the garden could be used to reduce confusion and help lead the resident back to the doors inside. (See section 8 “Secure Outdoor Spaces” for guidelines about exterior environments.) “There is a recognition within the social model that there is a great deal that society can do to reduce, and ultimately remove, some of these disabling barriers, and that this task is the responsibility of society, rather than the disabled person.”¹⁹

The social model of care used at Woodside Place supports residents by affirming their personal dignity and supporting their capabilities, instead of focusing on their deficiencies. Though innovative at the time, this concept is fairly standard practice now. In fact, it is central to today's culture change movement. It is currently much more common to blend programs, operations/ care, and environmental setting in a balanced approach to surround and support the individual with Alzheimer's disease.

According to the Pioneer Network, a non-profit organization that advocates for person-centered care, culture change is "the national movement for the transformation of older adult services, based on person-directed values and practices where the voices of elders and those working with them are considered and respected. Core person-directed values are choice, dignity, respect, self-determination and purposeful living... Culture change transformation may require changes in organization practices, physical environments, relationships at all levels and workforce models—leading to better outcomes for consumers and direct care workers without inflicting detrimental costs on providers."²⁰

To understand which Woodside Place design principles have stood the test of time, the Perkins Eastman Research Collaborative conducted a 20-year retrospective study in 2012. By evaluating Woodside Place and three other buildings designed along the same model, the team found that "the Woodside Place model had been successfully adapted to a variety of contexts, populations and programs."²¹

The post-occupancy study identified 10 fundamental design features that are still valid today:²²

- Personal relationships are supported by households of 10 to 14 residents with shared living areas
- Residential kitchens are a key part of enhancing home-like experiences
- Common areas should be flexible to embrace various resident activities
- Circulation paths can link activity areas and people
- Residents should have direct access to secure outdoor spaces
- Private hallways help distinguish private bedroom areas from common living spaces
- Single-occupancy rooms offer residents privacy, independence, control and dignity
- The non-institutional environment is supported by materials and furniture that are durable while still residential in appearance
- Wayfinding cues throughout the building are necessary
- Adaptability is important since new research and approaches to Alzheimer's disease care are emerging all the time

Design Considerations for Alzheimer's Disease

Based on industry research, copious feedback from the personal experiences of a wide variety of family and professional caregivers, Perkins Eastman's more than 20-year history of designing residences for people with dementia, and the Alzheimer's Foundation of America's expertise, the following is a summary of what Perkins Eastman and the Alzheimer's Foundation of America consider best practices in design for care settings for people with Alzheimer's disease.

The following guidelines are not meant to be a primer on senior living design for Alzheimer's disease and do not presume to anticipate issues related to federal, state or local licensing regulations, building codes, local climate, geography or other variances. Regulations and building codes vary state by state and depend on the type of facility. Many questions, decisions, trade-offs and best practices related to senior living design, Alzheimer's disease design, and universal/accessible design may still arise, though not necessarily covered by this document.

Although each person's lifestyle and health are unique, physiological and psychological changes are commonplace as people age. In fact, social and psychological effects of aging may affect a person's quality of life just as much as physical limitations. Designing senior-friendly environments means taking such changes into account to facilitate everyday activities and minimize obstacles to a good quality of life.

When designing for an older adult population, the main objective is to provide: a safe and comfortable environment that is supportive of the resident's need to maintain independence; a design that seamlessly incorporates environmental supports in an unobtrusive manner; spaces that encourage good nutrition, physical fitness, continuing meaningful roles and responsibilities, and social connections; and a design that addresses the six characteristics of aging that have the largest impact on older adults' relationship to their environment—loss of balance, cognitive impairment, loss of strength, visual impairment, hearing impairment, and increased sensitivity to cold, drafts, and direct sunlight.

Furthermore, this document addresses the physical environment—not operational practices, though the two often go hand-in-hand. (For greater insight into national standards of excellence in care in Alzheimer's disease settings, please refer to the Alzheimer's Foundation of America's [Excellence in Care Program](#).) In addition, the following design guidelines are not all-encompassing. They are intended to offer guidance and be used as a starting point for good design. (For greater insight on best practices for designing for seniors, please refer to [Building Type Basics for Senior Living, 2nd Edition](#) by Perkins Eastman.)

While the recommendations put forward in this white paper are most directly applicable to small-scale residential care facilities for people with Alzheimer's disease, many of the best practices can be translated to other senior living building models. As well, though focused on supporting a population of residents with Alzheimer's disease, many guidelines provided herein could support any person, regardless of their age or cognitive abilities.

Research and multiple post-occupancy studies have yielded important information about designing for people with cognitive impairment.²³ It has been shown that the physical environment along with therapeutic activities can lead to “improved quality of life, a slowed rate of progression of the disease, delayed institutionalization, and reduced need for medication.”²⁴ The guidelines presented herein provide a roadmap to support a person’s remaining abilities and are intended to provide a safe, supportive, enriching, empowering, and person-centered care environment for people with Alzheimer’s disease, their families, and professional caregivers. By adopting these recommendations, care providers may find cost savings and increase their marketing edge, while, most of all, offering people with Alzheimer’s disease an improved quality of life.

1. Households

People with Alzheimer’s disease can easily be overwhelmed, confused and/or distracted when faced with large groups or spaces.²⁵ This applies to activity participation, meal times, and even residential living arrangements. Residents can often function better in quieter, smaller groups. In addition, these small-sized groupings support resident-centered care and personal relationships among the residents, their families, and professional caregivers—an important factor given that social support has long been known to affect an individual’s emotional and physical health and general well-being.^{26,27}

The household model is a current trend in skilled nursing and assisted living (typically memory support) environments, where the model of care is focused on a person-centered approach. The physical environment of a household supports: flattened hierarchical operations and organizational structure; interpersonal relationships in ways that create an atmosphere of home; and clear opportunities for older adults to direct their own lives. Households typically include eight to 12 private residential bedrooms organized around a shared living/dining/kitchen area, plus additional staff support and storage spaces. A household can be a wing of a building or may be a stand-alone facility. When stand-alone, the building is often called a “small house.” Usually, several small houses are grouped together to allow for shared support spaces and staff efficiencies.

Recommendations:

- 1a Create small-sized groups of people, forming clusters or “households” of 10 to 14 residents.

Households can be arranged as stand-alone buildings—see the U.S. Department of Veterans Affairs Community Living Centers (USVA CLC) site plan and case study on page 43, or grouped to create neighborhoods with shared common spaces—see the NewBridge on the Charles floor plan and case study on page 41.

- 1b In addition to bedrooms, households should provide a shared, resident-accessed kitchen, dining area, and living room, plus secure outdoor space. Additional areas for residents within the household may include (but are not limited to) a spa/bathing room, small den and/or activity space.



This sample household includes 14 bedrooms, a small meeting/activity room, screened porch, a common living/dining room and kitchen.

Courtesy of: Perkins Eastman

- 1c Within the household, provide small group spaces with some visual and acoustic privacy. These spaces can be used by residents who get easily overwhelmed by crowds and noise, a common symptom of Alzheimer's disease that can result in behavioral issues and distractions. For instance, large, noisy dining spaces have been linked with an individual's reduced food intake.²⁸
- 1d Avoid multi-purpose rooms. Though the general concept of flexibility is important so the building can evolve over time, multi-purpose spaces are not recommended since a person with Alzheimer's disease may not adapt to the room's changes in use and expected social patterns. Instead, provide small group spaces that are distinctive, like in a home. There should be designated zones for pastimes such as casual conversation, dining, cooking, and watching television.

Best practices for senior living recognize that households are becoming the new norm in long-term care environments. Along with supportive adaptations in the physical environment, operational practices empower professional caregivers to make decisions, improve the quality of life for residents, and develop personal relationships with residents. In addition, the physical environment of a household allows for "smaller, family-size social groupings with shorter walking distances to common living spaces, giving residents a greater level of independence and access to more social experiences."²⁹

2. Residential Qualities

A setting that has an institutional look and feel is not a “home.” The residential quality of the building is very important, inside and out. Building massing (i.e., the building’s volume and shape) and internal layout, hierarchies of space and circulation (i.e., hallways, stairways, elevators, lobbies), materials and furnishings, color palettes, inaudible alarm/alert systems, and even room names (e.g., a “living room” or “den” versus a “lounge”) can make a big difference.

Recommendations:

- 2a Exterior massing should be articulated (with distinct elements and walls that jog to create different planes, rather than a solid, monolithic façade) and at a scale that relates to a person (i.e., “human-scale”), with residential detailing and materials appropriate to the building’s locale.



The exterior of this small house helps convey “home,” through its residential massing and scale, articulated façade, architectural details, materials and color palette.

Courtesy of: Penny Heinnickel/Perkins Eastman

- 2b Elements that make an interior environment residential (as opposed to hotel-like or hospital-like) should be incorporated, including: a residential color palette and materials (e.g., carpeting, wood, upholstered furniture); providing diversity (e.g., of furniture styles, types and styles of lighting, varied ceiling planes); soft as opposed to hard surfaces; and details (e.g., artwork and accessories, window treatments).
- 2c Interior layout and hierarchies of space and circulation should reflect conventional residential layouts. For instance, in modern Western cultures, this layout usually consists of a public-to-private transition of entry foyer to living room to dining room and kitchen, with bedrooms in the most private zone. The kitchen/dining/living area is the “heart” of the home, with the hearth a central place of activity. In addition, Western-style homes rarely use corridors. Rooms are arranged enfilade, which means walking through rooms rather than hallways to get to a place (e.g., walking through the living room to enter the dining room). Small hallways are usually only offered as a way to access private areas, such as bedrooms or back-of-house spaces. (Note that when creating small household clusters, this kind of layout is feasible.) By replicating typical home layouts, the building design can help residents feel comfortable, safe, less frustrated, and reduce challenging behaviors.

Two kinds of household layouts are typical today: One version groups the residents' bedrooms together and locates them away from the common spaces, creating a more private area in the household (see the NewBridge on the Charles floor plan and case study on page 41). In the other scenario, the bedrooms wrap the common core (see the USVA CLC floor plan and case study on page 43), with the intent of minimizing walking distances and maximizing visual connections to promote residents' and professional caregivers' participation.

- 2d As a person with Alzheimer's disease progresses through the disease, more incontinence events are likely to occur.³⁰ Accordingly, the flooring should be very easy to clean and maintain, while still promoting mobility and a homey appearance and texture. Available options to achieve these goals have improved greatly over the past 20 years.



Interior finishes and furnishings can be easy to maintain and durable while still looking residential.

Courtesy of: Casey Dunn

- 2e Furnishings in common areas should allow for flexibility. For instance, rather than providing one large table, consider several smaller square tables that can be pulled apart or pushed together depending on the activity and number of participants. Furniture should also be light enough and/or small in scale so it can be moved.

- 2f There should be glare-free natural lighting, residential lighting fixtures and bulbs, and table/floor lamps in addition to overhead lighting. Not only will glare-free lighting serve to create a home-like and non-institutional feel, it will also reduce the likelihood that a person with Alzheimer's disease will misperceive the environment (e.g., light shining off a wooden floor may be mistaken as water or a wet spot) and cause confusion or even injuries.

For more information about proper lighting for older adults, refer to the latest edition of the Illuminating Engineering Society of North America (IESNA) RP-28, Recommended Practice for [Lighting and the Visual Environment for Senior Living](#). For more information about lighting design specifically for people with cognitive impairment, refer to [The Alzheimer Knowledge Exchange Dementia-Friendly Design Considerations on Lighting](#).

- 2g Operational equipment (e.g., med carts, fire alarm panels, extra mobility assistance devices) should be hidden from view. An alternative is to accommodate such equipment within the household, when appropriate. For example, store medications in a locked kitchen cabinet. Likewise, locate a computer workstation at a desk in the den—just like someone would have in a private home. Be aware, however, that some residents may take apart or inadvertently damage equipment left unattended (see recommendation 13b).



A locked cabinet in the kitchen can be used to store supplies (e.g., confidential files, medications).

Courtesy of: Sarah Mechling/Perkins Eastman

- 2h To promote personalization of the residents' bedrooms, offer a neutral color palette (a "blank canvas"). Also, consider providing a plate shelf (a narrow shelf attached to the wall used for the display of personal objects) or other environmental cues to decorate the space. In addition, room layouts and junction boxes/data ports/outlets should accommodate placement of residents' personal furnishings—from moving in the bedside table that an individual has used for the last 40 years to deciding on which wall to place the bed.



Residents' bedrooms should encourage personalization.

Courtesy of: Randall Perry

Best practices for senior living recognize that, while offering "home-like" interiors does not necessarily equate to a sense of home, the senior living environment (inside and outside the building) should have a residential appearance. Considerations include: human-scale elements; culturally-appropriate residential spatial layouts and hierarchies; residential-style materials and detailing; residential color palettes that are not so dark that they are perceived as black or so subtle that they appear dreary to the aging eye; furnishings that are varied, flexible, sturdy and anthropometrically suitable for older adults; the ability for residents to personalize their environment; glare-free surfaces; slip-resistant flooring with minimal transitions at thresholds and between materials; and residential-style lighting that addresses the needs of older eyes.

3. Wayfinding and Orientation

Wayfinding consists of three key components: knowing where you are, how to get somewhere (having a “mental map”), and recognizing when you have arrived.³¹ The wayfinding system in any building can be an important aspect of resident and visitor comfort, especially for those who may feel insecure in their environment. For older adults who are not as agile, experiencing balance or gait issues, facing changes in visual acuity and depth perception, and/or who are dealing with a significant change in their lifestyle, and for people with Alzheimer’s disease who may also have more difficulty adjusting to a new environment than people without cognitive loss, it is particularly important to be able to find one’s way around a building as effortlessly as possible. If residents feel secure and know they will find their way back home, they may venture out of their residence more often, socialize with others, and be more physically active.

Sociologist John Zeisel, Ph.D. explains, “For people with dementia, the concept of wayfinding should be thought of as ‘place knowing.’ People with dementia know where they are when they’re there; they only know where they are going if they see the destination; and they realize where they were going when they arrive. The in-betweens—the connections between destinations—are lost on them.”³² Accordingly, the physical environment needs to support an individual in those in-between moments. Furthermore, not only is spatial orientation necessary, but the environment should also offer cues for temporal/seasonal orientation.

Recommendations:

- 3a Spaces should be distinct, both in appearance and overall layout. Repeating or mirroring floor plans can be confusing for some people, since they may perceive households as the same. Residents may be found in the “right” room, just in the wrong household wing.³³ Getting lost is sometimes due to mistaking which *household* to go to, rather than which *room* to go to. The building layout should minimize wayfinding choices to reduce confusion and disorientation.
- 3b At each decision-making point, such as hallway junctions, there should be orienting landmarks to help with wayfinding. Since distinctive cues are more memorable than subtle changes (e.g., a change in finish color), landmarks should be unique and varied, such as recognizable objects, artwork, or a view to a specific outdoor feature.

While walking through the household, a resident may forget that he or she was on the way to the kitchen for a snack, or that he or she needs to turn left at a hallway junction to get to the kitchen. However, if the resident can see the kitchen or can see a distinctive landmark down the hall (e.g., a large painting of a bowl of fruit), it may help the person remember that is the intended destination.



Distinctive cues at decision-making points, like this grandfather clock, can help with wayfinding.

Courtesy of: Curtis Martin

- 3c Allow for personalization at bedroom entrances, since residents respond more to personalized landmarks than generic ones.³⁴ For instance, a generic cue like a change in carpet or wall color is less effective than a memory box with personal photos. In fact, memory boxes (where the content remains static) have been shown to aid in wayfinding and can also be used to spark conversation, discovery and fulfillment.^{35,36}
- 3d Allow for personalization and/or provide distinctive landmarks at entrances to each household cluster. Providing these kinds of cues at household entrances can offer the same wayfinding benefits as the memory box at the bedroom door, especially when the building layout is repeated (see recommendations 3a and 3c).



Personalized memory boxes and/or personal photos outside bedrooms aid in wayfinding.

Courtesy of: Tim Wilkes

- 3e Provide orienting views through spaces and between destinations. Residents who do not know where they are or cannot recall what they are searching for may choose to redirect themselves or join an activity if they can see into a room.
- 3f Identify things and spaces by names and numbers in addition to other kinds of cues, since research has shown that people with Alzheimer's disease typically retain recognition of words and numbers longer than many other kinds of memory.³⁷
- 3g Since Alzheimer's disease progresses differently in different individuals, and some individuals may lose their ability to read or comprehend words earlier on, pair pictures with written signs for things and spaces. Likewise, provide visual cues for important activities, such as eating or toileting. Glass-doored kitchen cabinets stocked with healthy snacks could cue a resident to eat. Being able to see a toilet from the resident's bed or near an activity space (while maintaining privacy, of course) might minimize incontinence issues.
- 3h To control access into spaces, consider using Dutch doors (a door divided horizontally into two portions that can be opened or closed separately), curtains on interior and/or exterior windows, and dim lighting to deter resident entry.
- 3i Offer views to the outdoors. These vistas not only act as landmarks, but can also offer temporal orientation,³⁸ from seeing what time of day it is by the quality of light to the seasonal changes evidenced by the flora and weather. Outdoor views can also promote use³⁹ of exterior spaces and walking (see recommendation 4c); and natural light helps regulate circadian rhythms, helping with sleep disorders, sundowning, and seasonal depression.^{40,41,42}

Best practices for senior living recognize that circulation routes (i.e., hallways, stairs, elevators, lobbies) should be easy to travel, with minimal distances and places to stop and rest. Plans should be legible (i.e., the layout of the space or building is easy to understand) and multi-layer wayfinding cues are provided to help people orient themselves (e.g., landmarks, signage, views). Circulation routes should accommodate mobility assistance devices. The lighting (including emergency lighting) should be designed to address the needs of older adults.

4. Independence, Control, and Flexible Rhythms

While cultural differences and personal preferences certainly exist, many people—regardless of whether or not they have Alzheimer’s disease—value autonomy and want to live life their own way, at their own pace. A noninstitutional program based on small, informal groups and flexible schedules can allow this. The physical environment can help support this kind of philosophy of care. Someone with Alzheimer’s disease can opt to sleep in and get breakfast when he or she is ready to eat, or participate in an activity as desired.

“Because people with Alzheimer’s [disease] and related dementias often have trouble adapting to changes and transitions, settings should conform to their needs and preferences, rather than demand conformity.”⁴³ From self-determined daily routines to accommodating mobility assistance devices, resident autonomy “and the link between independence and the way [professional] caregivers and family treat residents, is central to providing residents with high quality life despite their dementia.”⁴⁴ Furthermore, remaining autonomous (among other factors) can actually contribute to successful aging.⁴⁵

Recommendations:

- 4a Have food in the household’s kitchen available at all times. Healthy snacks should be accessible; a warming cart or warming drawer could make meals available during a wider range of times as well as facilitate a greater variety of dining choices.
- 4b The environment should offer sensory cues to encourage residents to eat, from sightlines into the kitchen to smelling food being prepared. Participatory meal prep and cooking programs can also be effective.⁴⁶
- 4c Important items and spaces for daily activities (e.g., toilets, food, towels, even access to the garden on a nice day) should be easily seen and located to promote use⁴⁷ and reduce frustration due to memory loss. Provide visual cues to highly-used items and spaces (see recommendation 3g).



Glass-fronted cabinets allow residents to see what’s inside, helping people find things without having to rely on memory.

Courtesy of: Perkins Eastman

- 4d Separate residents' bedrooms from activity areas or other noisy spaces so people can nap without disruption (see recommendation 2c).
- 4e Residents' bedrooms should include a closet/wardrobe unit with two compartments: One side provides limited access to seasonally appropriate or sometimes even just the day's clothing, and open-wire drawers enable socks and undergarments to remain visible. The second compartment stores additional clothing and can be locked as necessary (e.g., for people who rummage or hoard—common behaviors in people with Alzheimer's disease). Keeping extra clothing in the locked portion of the closet is helpful for residents who need reassurance that their property is still there; the door can easily be opened upon request. Also available are closet units with sequential, ascending hanger rods to cue a person with Alzheimer's disease to put undergarments on first, then clothes, then shoes, etc., allowing a person to dress him/herself.⁴⁸

Best practices for senior living recognize that “flexibility is crucial: residents must be able to choose when and what to eat, when to bathe, the types of household activities, and whether to participate in them. The result is a community in which residents and [professional caregivers] all have choices and can make meaningful contributions to their environment.”⁴⁹



5. Safety/Security

There are two aspects of safety and security: actual and perceived. Not only is it important for residents to be safe and secure, but they must also feel that way. This can be a challenge since Alzheimer's disease often produces anxieties and paranoia,⁵⁰ which in turn affects someone's health and well-being, sense of home and comfort level, ability to concentrate, participation in activities, etc. The physical environment, accordingly, needs to offer both actual and perceived safety and security so that residents can feel confident and calm in their home.

Recommendations:

- 5a Staff should be able to unobtrusively monitor residents throughout the interior and exterior common spaces. However, this does not mean that the setting requires institutional hub-and-spoke building layouts with centralized nursing stations—quite the contrary (see recommendation 2c). Instead, it suggests including features such as windows or wall openings between spaces for visual connections, minimized hallway distances, and areas that promote staff presence.



Open layouts and visually connected spaces, inside and out, allow caregivers to unobtrusively monitor residents.

Courtesy of: Christopher Lark

At NewBridge on the Charles (see case study on page 41), there is a common sitting area that links the hallways of the two bedroom wings. Because this gathering space is frequented by residents, the professional caregivers are motivated to walk through—and therefore monitor—the households as they travel between the kitchen/dining/living room hub and this other detached space.

At NewBridge on the Charles (see case study on page 41), a back hallway and sitting area connects the two households and encourages the professional caregivers to travel through and monitor the households.

Courtesy of: Perkins Eastman



- 5b All water faucets should be installed with hot water mixing valves, where the water temperature can be remotely fixed to prevent residents from scalding themselves. Otherwise, a resident may burn him/herself, thinking that he or she turned on the cold water, not the hot water.
- 5c Though residents should have free access to things in the household (just as they would in a private home), items like cleaning products, medicines, delicate electronics and certain utensils should be stored safely away for the residents' protection. Accordingly, provide lockable drawers, cabinets, and other storage spaces throughout the building. Adequate storage throughout the household will also help to reduce clutter, promoting a calm environment and reducing fall risks.

The physical environment can help reduce a person's exposure to potential hazards. In House for Betty (see case study on page 49), spaces like the kitchen, bathroom and laundry/utility room include drawers and cabinets with keyed locks that can be used to restrict access to harmful chemicals, medicines, equipment, etc. The building also provides caregiver-controlled power switches for appliances and keyed electrical outlets.

- 5d Sometimes residents need to be restricted from a certain space due to safety and/or sanitation issues. In these circumstances, a gate or sliding door can temporarily close off that area. For instance, when a meal is being prepared in the household's kitchen, code and sanitary regulations may require the kitchen be blocked off to residents.



If necessary, a gate or sliding door can be used to temporarily block off a space.

Courtesy of: Emily Chmielewski/
Perkins Eastman

- 5e In addition to the slip-resistant and glare-free flooring that is typical of senior living environments, avoid contrasting light and dark areas on flooring (e.g., carpet borders). Similarly, lighting and shadows cast on horizontal surfaces should not create light/dark patterns. These kinds of contrast variations may be perceived as a step or a hole. The perceived changes in depth may cause a resident to try to step over or around an apparent barrier, which could result in a fall. It may also hinder circulation if someone fears crossing a perceived barrier. Similarly, textiles and wall coverings with patterns should have designs that are easily recognizable and are not perceived as abstract objects, faces or animals, which can be confusing for people with cognitive impairments.

Best practices for senior living recognize that it is important to maintain residents' independence and flexibility while still providing a safe and secure setting. Of course, regulations surrounding fire protection, means of egress, and additional hazards (known as Life Safety, or NFPA 101) and other codes must be met. However, a senior-friendly environment can go even further by providing environmental supports (that may even be quite subtle) to improve residents' quality of life.

Considerations include: glare-free surfaces with contrasting-color edges; clear circulation paths and slip-resistant flooring with minimal thresholds; anti-scald fixtures and regulated water temperatures; lockable storage spaces for hazardous materials; restricted window openings and garden fences at least six feet high; non-toxic plants; sturdy furniture that is not likely to tip over; horizontal surfaces and support bars that are strong enough to be used as lean rails and grab bars; lean rails or handrails on both sides of hallways (to accommodate people's varied strengths and sidedness); emergency call systems; emergency lighting and automatic doors with extended times for people who may move slower; appropriate lighting levels for aging eyes (inside and outside the building); nighttime lighting from beds to bathrooms; and many other factors.

6. Entry and Egress

Though residents with Alzheimer's disease typically do not leave the building or sometimes even the wing they live in, many people feel the need to wander or sense that they are supposed to be somewhere, leading to agitation or elopement attempts.⁵¹ In addition, seeing people come and go, and not having that same freedom, may cause frustration or anxiety if the resident does not recognize the person approaching his or her home.⁵² Accordingly, entrances and exits need special consideration—from providing an appropriate level of safety/security to helping to prevent anxieties.

Recommendations:

- 6a Direct entrances toward staff and visitors, not residents (who may become agitated or frustrated by seeing people coming and going). The entrances should be welcoming, but screened from active resident areas. Views to the parking lot should be blocked, as well.

To help minimize resident confusion or agitation, staff and visitors at NewBridge on the Charles (see case study on page 41) enter through a den located away from the main common spaces. Similarly, at Marian's House (see case study on page 46), a vestibule and inconspicuous entry (hidden from sight by a dividing wall) allow employees and visitors to arrive discretely. In addition, high ceilings and large windows in the main rooms of the house open to the garden, directing resident attention away from the entry and into the secure garden area.

- 6b Disguise egress points, in order to minimize anxiety and decrease the chance of elopement. Entrances could be located in dimly-lit alcoves, deterring resident access (see recommendation 3h). Doors should be off-axis (i.e., not the focal point at the end of a hallway); and could be painted and have trim that match the surrounding walls.

Locating egress doors off-axis and/or disguising them to blend into surrounding walls can help minimize elopement attempts and frustration with locked doors.

Courtesy of: <<http://pam-nelson.com/artwork.asp?giid=289>>, edited by Perkins Eastman



- 6c Secure emergency exit doors with an electric deadbolt that releases in case of a fire, allowing residents to exit to an enclosed garden or other secure area of safety.
- 6d Use technology, like personal GPS tracking systems with silent alarms, to unobtrusively give staff information about residents' whereabouts or notify staff when a resident needs redirection (e.g., if someone is trying to exit through a locked door). Having a silent alarm is key since a loud noise will be very disruptive for residents and can increase anxiety and withdrawal.⁵³
- 6e Restrict window openings to no more than six inches.
- 6f Provide secondary layers of security so if a resident gets past the first layer of security (e.g., egress door, secure garden walls), he or she is still in a safe place. For instance, if someone exits the household, the person would still have to go through the administrative space before leaving the building.

Some residences for people with Alzheimer's disease have created inventive solutions to avoid elopement, such as the "bus stop to nowhere" at the Benrath Senior Center in Düsseldorf, Germany. At this site, a bus stop (bench and sign) was installed right in front of the building to attract residents who have eloped or to escort those who feel an urgent need to be somewhere (a staff member will bring the resident to the bus stop and sit with them until the urge passes).⁵⁴



The "bus stop to nowhere" at the Benrath Senior Center in Düsseldorf, Germany has helped retain residents who have tried to elope.

Courtesy of: <http://cdn.slidesharecdn.com/ss_thumbnails/rcamethodslaboveratom2-111102074414-phpapp02-thumbnail-4.jpg?1320238432>

Best practices for senior living recognize that residents benefit from covered entrances that are protected from sun, wind and precipitation. Doors should be automatic or require minimal force and manual dexterity to open. The entrances and entry experience should also communicate the style and quality of the community—this is where the first impression happens.

7. Spa/Bathing

Though there are many design guidelines for senior-friendly bathrooms, there are several specific recommendations for a population with cognitive impairment. For someone with Alzheimer's disease, the toileting and/or bathing experience has the potential to be stressful or overwhelming, and can be complex for caregivers to optimally manage. From helping to prevent falls and incontinence issues to helping to preserve dignity and assuage fears, spa/bathing spaces need special consideration.

Recommendations:

- 7a In each bedroom, include an attached private bathroom, with a shower and enough space for an assisting staff person. Private bathrooms are much less institutional than shared or group bathrooms. A familiar and comfortable setting offers greater quality of life for both residents and professional caregivers. In addition, currently, assisted bathing typically only happens inside resident rooms. Separate tub rooms often go unused, though they are still sometimes required by code or made available to residents who prefer baths to showers.



Resident bedrooms are provided with adjacent, private three-fixture bathrooms.

Courtesy of: Sarah Mechling/Perkins Eastman

- 7b Provide a direct visual connection from the bed to the toilet since a visual reminder may reduce incontinence and nighttime accidents.⁵⁵ (See recommendation 3g.)
- 7c Bathing spaces—whether private bathrooms or shared spa/bathing rooms with therapy tubs—should be as calm and peaceful as possible to alleviate anxiety, since most people with Alzheimer's disease have a fear of bathing and water.^{56,57} This may include providing familiar-looking fixtures (e.g., no scary-looking institutional therapy tubs), soothing lighting, peaceful music, and even aromatherapy.



Noninstitutional bathing rooms can help mitigate resident fears.

Courtesy of: Creative Sources Photography

- 7d Provide lockable storage cabinet(s) and/or drawer(s) for toiletries, razors and other items that residents should not have direct access to (see recommendation 5c).
- 7e Head off hoarding. Because symptoms of Alzheimer's disease (e.g., paranoia, delusions, hallucinations) may prompt a person to hoard, a resident may try to hide items in unlikely places.⁵⁸ Accordingly, shower and sink drain cover plates should be the screwed-type and difficult to remove. Also, toilets should be easy to unclog in case a resident flushes articles down the toilet (believing he/she is hiding or throwing items away).
- 7f Consider installing shutter doors over vanity mirrors, which can be closed if necessary. This feature is important since some people with Alzheimer's disease do not recognize themselves when confronted with their reflection in a mirror, which can cause agitation.^{59,60}

Best practices for senior living recognize that many design guidelines exist to make bathrooms usable and safe for an older adult. Considerations include: bathroom location (e.g., proximity to common spaces and along circulation paths, as well as visibility of the toilet from the bed); clearances and thresholds; noninstitutional-looking grab bars at the toilet and bathing areas; towel bars that have sufficient wall blocking and strength to act as—but not be a substitute for—grab bars; toilet and vanity heights; contrasting-colored edges; glare-free and slip-resistant surfaces; drawer and cabinet pulls and faucet controls that are levers or handle-types, rather than knobs that can be difficult to operate for people with arthritis in their hands or other limitations; medicine cabinets located on the wall to the side of (not at the back of) the sink so that it is easier for someone to reach and for light to shine into; appropriate lighting and acoustics; and many other factors.

8. Secure Outdoor Spaces

Providing unrestricted access to secure outdoor spaces—even for residents with elopement issues—is vital since it can reduce agitation and frustration, relieve stress, and improve physical fitness (from walking to exposure to sunlight that regulates mood, circadian rhythms, etc.).^{61,62} By giving residents a secure place to go outside, it can even help reduce elopement attempts since residents do not feel as cooped up.⁶³

While safety and security are always a concern and must be taken into consideration, the outdoor space should be designed so that staff and families are comfortable with the residents' unaccompanied access to the outdoors, when appropriate. There are several things that can be done to make the outdoor environment safer, more comfortable, and even more inviting—providing residents with the freedom, independence and autonomy that any person needs.

Recommendations:

8a Give residents unrestricted access to a secure outdoor space, when appropriate.

At NewBridge on the Charles (see case study on page 41), people have direct access to the outdoors, even though there are two floors of residences. On the ground level, residents can visit a secure courtyard garden. People living on the second floor may also visit the courtyard with a professional caregiver or family assistance, as well as have access to a screened porch at any time.



Residents of NewBridge on the Charles (see case study on page 41) can access the outdoors by visiting a screened porch and secure garden courtyard.

Courtesy of: Laurie Butler/Perkins Eastman

8b Consider using mini-blinds or other coverings on windows and glass doors to screen the view of the outside wandering garden during poor weather (e.g., when it is too hot or cold and on inclement days).

- 8c Provide views to the outdoors from interior spaces to help caregivers unobtrusively monitor residents who have gone outside.



The secure garden can be seen from inside the household, encouraging resident use and allowing for unobtrusive caregiver observation.

Courtesy of: Chuck Choi

- 8d Locate outdoor spaces in serene settings (e.g., *not* on a busy street) since “older people with dementia generally enjoy going out, but anxiety, disorientation or confusion can occur in complex, crowded or heavily-trafficked places or when startled by sudden loud noises.”⁶⁴
- 8e Secure outdoor spaces with perimeter fencing at least six feet high, and camouflage the fencing with landscape design features such as trees or shrubs so it does not attract residents’ attention or feel prison-like. In addition, the fence and landscaping should not have ladder-like elements that could be used for climbing. Likewise, the plan and furnishings should also prevent a resident from scaling the fence (e.g., dragging a chair or table to the fence to help climb over it).
- 8f Construct walking paths that are continuous and loop back to building entrances. There should be “multiple cues that reduce demand on the user, [allowing] one to enjoy walking in a natural environment without the frustration of figuring out how to return.”⁶⁵



Garden paths loop back to building entrances.

Courtesy of: Rick Rebottini/
Perkins Eastman



- 8g If there is a service gate, a solid pathway should not link the gate and the garden's circulation loop.
- 8h Provide path and perimeter lighting in case someone leaves the building at night—both for monitoring residents as well as so people can adequately see the paths and their way back into the building.
- 8i Ensure that all plantings are nontoxic and have no sharp edges or abrasive leaves, thorns, etc.

Best practices for senior living recognize that outdoor spaces and paths on the site, and the connections to the surrounding neighborhood, should be easy to get to and get around in once there. Many factors need to be considered within the domains of wayfinding, safety/security and accessibility. Considerations include: direct and universal access from inside the building (preferably from a major circulation route and/or multiple common areas); provision of shade and protection from cold winds and heat from the sun; flat and smooth pathways to reduce the risk of falls; path edges defined by a change in texture so that someone with poor vision can recognize when he or she is off the path (though avoid raised edges since they can pose a tripping hazard); paths wide enough for two wheelchairs to pass; providing different lengths of routes so that people with limited mobility or those who just want a quick walk have an option; benches or other seating at the entrance points and along the pathways, giving residents both the opportunity to rest and to promote social interactions; handrails for people who have unsteady balance, where necessary (e.g., at stairs, sloping paths, drop-offs), but that are not at a height or location that would block the view of someone seated (e.g., on a bench, in a wheelchair); avoiding materials that create glare (e.g., light concrete) and that can radiate heat (e.g., asphalt); and many other factors.

9. Active Engagement

People of all ages and abilities need meaningful engagement. Purposeful activities and being able to practice remaining skills—from gardening to cooking, chatting to playing music—can promote feelings of self-worth and stave off depression and anxiety.⁶⁶ People with Alzheimer’s disease, however, may need cues to initiate activity. They also need to be protected from distractions that could hinder engagement or that may become stressful and overwhelming.⁶⁷ The goal is to create “stimulation but not stress.”⁶⁸ By creating a physical environment that supports people’s abilities and enhances their remaining skills, residents can have a greater quality of life.

Recommendations:

- 9a To minimize overstimulation or distractions, control noise and provide options for various group sizes, including smaller groups for residents who need calmer surroundings (see recommendation 1c).
- 9b Offer an assortment of designated activity spaces that can support different-sized groups, in order to accommodate residents’ varied interests, desired level of stimulation, and comfort levels (see recommendation 1d).
- 9c Activity zones should be familiar, tapping into residents’ long-term memory. Spaces should support activities/programs that act as a continuation of life activities, such as the former homemaker who wants to fold laundry or the retired office worker who wants to do “paperwork.”
- 9d Activities and related materials should be easy to find and access. If a resident can find things without opening cupboards (see recommendations 3g and 4c) or going through a lot of doors or spaces, the person will be more inclined to participate in or initiate an activity.
- 9e Residents should be able to preview activities before joining in (e.g., seeing an activity from an adjacent room or hallway when walking by). This may inspire someone to join the activity or allow the resident to passively participate by watching from nearby (known as “sideline” participation).



Being able to look through and into spaces allows residents to preview activities.

Courtesy of: Sarah Mechling/
Perkins Eastman

- 9f Design the kitchen/dining area to include a large table and/or countertop where residents could sit to help prepare meals, participate in cooking programs, or interact with staff as they work in the kitchen. Staff may also use this space for charting, etc.



Residents seated at a kitchen table or low countertop are able to interact with professional caregivers and participate in kitchen activities.

Courtesy of: John Smillie

Best practices for senior living recognize that resident engagement can range from watching an activity (i.e., “sideline” or “passive” participation) to being actively involved. Regardless of a person’s desired level of engagement, the physical environment should support the resident—offering both opportunity and choice. To encourage use, activity spaces should be: along a major path of circulation; close to other common spaces (creating a “hub” that draws people for varied purposes); flexible in order to serve various groups of people and different events/activities (yet not too multipurpose, in that the space is so diverse that it actually cannot accommodate any one function well); and full of natural light, with pleasant views to the outdoors. Where appropriate (e.g., classrooms, presentation spaces), an audio/visual system and appropriate room finishes should address the auditory and visual limitations of older adults, with the acoustics balanced for speech and/or music. A range of room sizes should also be provided to accommodate the varying events/activities that will occur, as well as to provide a level of flexibility as interests and programs change over time. So the room can be used for other purposes, there should also be good storage for tables, chairs, supplies for various activities, and any in-process projects.

10. Private, Quiet Spaces

Just as it is important for facilities to include areas that support resident activity and engagement, it is also necessary to provide quiet, peaceful spaces. In a way, it is two sides of the same coin—allowing for focused and appropriate stimulation.

Recommendations:

- 10a Provide each resident with a private bedroom where the person can be alone and keep personal belongings, helping the resident to feel secure and express a degree of territoriality.
- 10b Locate private bedrooms in a residential zone, away from noise (see recommendations 2c and 4d).
- 10c Ensure that the layout of private bedrooms and bathrooms reduces obtrusive visual observation since people with Alzheimer's disease may behave immodestly (e.g., undressing or using the toilet without closing a door).
- 10d Use Dutch doors, which when the upper half is left open limits actual entry but allows staff and residents to look into private bedrooms for monitoring and orientation. Though people can see into the bedrooms, Dutch doors help maintain residents' sense of privacy and territoriality since the visual connection prevents people from entering the space to see what is behind a closed door. When the lower portion of the Dutch door is kept closed, it can also limit resident access to other people's rooms in order to help reduce rummaging in others' belongings.



Dutch doors allow visual connectivity while limiting physical access into resident bedrooms.

Courtesy of: Robert Ruschak

- 10e Consider providing a controlled multisensory environment for therapy or other programming. For example, a Snoezelen® room typically consists of: items to stimulate the visual system (e.g., bubble tubes, fiber optics, projectors); a variety of mats, cushions and textures that stimulate the tactile system; different sounds (e.g., relaxing music) and smells (e.g., aromatherapy); soft furnishings and wall padding; and therapy props.⁶⁹ Snoezelen® rooms have been shown to reduce agitation, wandering and other symptoms of Alzheimer's disease.⁷⁰

Best practices for senior living recognize that residents may want to be alone or enjoy quiet, calm activities in places other than their bedroom/residential unit. The building should offer quiet, contemplative spaces (inside and out), such as a window seat to watch the comings-and-goings of neighbors, a bench tucked back from the garden path, or an overlook with a lovely view.

11. Engaged Wandering

Active walking/strolling is a frequently-observed behavior in people with Alzheimer’s disease. Sometimes this action becomes purposeless wandering, where a person is in search of a destination or object that may be unclear or unknown. When wandering and/or rummaging reflect a person’s desire for mobility, autonomy and/or activity, these behaviors should be supported—not discouraged. However, it is important to redirect these behaviors into safe, engaging and purposeful activities. To this end, the environment can be used to help reengage people or redirect purposeless wandering. The goal is to provide opportunities for *engaged* wandering, not meaningless walking, since “a well-designed walking path in a secure setting offers an opportunity for a person to release excess energy, stay in shape, get some sunshine, and explore.”⁷¹

Recommendations:

- 11a Provide multiple walking routes—both inside and out. Several intersecting loops are preferable to a single one. Include assorted lengths and locations, not only to provide interest through variety, but also to offer options for people with diverse physical and/or cognitive abilities.
- 11b Promote access to “safe” areas (including the outdoors), while redirecting people away from “unsafe” areas (see recommendations 3h and 5d), since residents may wander or try to explore all areas of the household.
- 11c Do not terminate circulation paths in dead ends. Looping paths and end-of-hall destinations (e.g., sitting area, activity room) can help redirect or engage a resident. Likewise, do not terminate halls with egress doors (see recommendation 6b).
- 11d Walking loops should offer more than just an unencumbered, circuitous path for residents to follow. There should be opportunities for meaningful engagement along the way.^{72,73} The loop should pass next to or through designated activity zones. For example, residents should be able to happen upon—and perhaps join—an activity in the living room or pass by the kitchen and grab a snack. In addition to passing activity zones, the walking loop should also allow residents to preview activities (see recommendation 9e) or look into—and even walk out to—the secure garden. “Creatively weaving rooms into the wandering path can facilitate orientation and provide activity spaces as destinations.”⁷⁴
- 11e Provide seating and other places for residents to socialize along the loop, since “social walking” and “front porch” socializing are common along walking paths.⁷⁵



- 11f Toilets should be easily seen and able to be frequently accessed along the walking loop, for convenience as well as to provide visual connectivity that may reduce the chance of incontinence.⁷⁶ (See recommendations 3g and 4c.)
- 11g Residents should be able to be (unobtrusively) monitored along the walking loop (see recommendation 5a). Professional caregivers and families report that they like being able to see where residents are without feeling that everyone has to be in the same place.⁷⁷ The openings that visually connect the common spaces along the circulation paths are also critical to the vitality of the households.⁷⁸

Best practices for senior living recognize that well-designed pathways can contribute to the richness and meaning in life needed by people of all ages and abilities, offering the cues and connections often necessary to engage a person in activities.⁷⁹



12. Supporting Family Involvement

Social support is critical to a person's well-being,^{80,81} whether or not they have Alzheimer's disease. Features in the physical environment that support and encourage visitation may bolster residents' psychological and even physical health. The building can also be designed to support the greater community, becoming a neighborhood resource for dementia-related services.

Recommendations:

- 12a Provide small private or semi-private group gathering spaces so residents can spend time with visitors outside of their bedrooms. These spaces can also be used for family conferences, holiday parties, staff meetings/training, community support groups, etc. In addition to providing space to accommodate these gatherings, also consider the room's furnishings, including flexible arrangements, such as moveable tables and chairs that can accommodate different activities (e.g., from lectures to casual chatting).

A smaller, quiet room (e.g., a den) can be used for family visits, private meetings, small group activities and calming residents. Moveable, flexibly arranged furniture adds to the space's usefulness.

Courtesy of: Sarah Mechling/Perkins Eastman



- 12b Allow for seating in each resident's bedroom. In addition to a bedside chair, consider a window seat bench, which can also be used for added storage.

A window seat bench in the bedroom can provide additional seating and storage.

Courtesy of: Sarah Mechling/Perkins Eastman



- 12c Consider including a sleeper sofa in the den. This, along with access to a private bathroom, can enable a visiting family member to comfortably spend the night.
- 12d Consider ways to engage visiting family members and residents together. For instance, include some extra seating space in the dining room so that family members can join meals or a group activity.
- 12e Plan how the dining and living areas can accommodate multiple visitors as families and friends join residents to celebrate special occasions, such as a holiday meal or birthday party.
- 12f Consider how the building might be used by the greater community, such as providing a resource library, publically-accessed clinic, or space to host educational workshops or support group meetings. Explore how the provider's outreach program can be supported or even expanded, making the building a neighborhood resource.

In addition to offering day and respite care for people with Alzheimer's disease living at home, Marian's House (see case study on page 46) is also a community resource center. In evenings and on weekends, when the building is typically not used, classes and discussion groups can meet. People can gather around the large dining room table, transforming the dining area into a conference room. Media and technology equipment has been integrated into the space for presentations and training videos. Casual conversations and consultations can also occur in the den.

Best practices for senior living recognize that visitors (e.g., residents' family and friends) have needs and are stakeholders in the project, as well. Guests must be made to feel welcome, with amenities and supports in place to encourage repeat and extended visitation. Considerations include: easy access to/from the building; easy to understand floor plan layouts and wayfinding cues to assist getting around; a place to get a drink and snack (including outside of regular meal times); a place to work or make a private call; and a space for grandchildren or other young visitors to play, such as a small playground outside or an activity room that has child-sized furniture and storage space for children's toys.

13. Supporting Professional Caregiver Involvement

Professional caregiver involvement has grown leaps and bounds as a result of the culture change movement, with its modified operational practices and greater emphasis on person-centered care. There have been changes in job responsibilities, such as the universal worker (i.e., a professional caregiver cross-trained to meet residents' needs in a variety of areas, such as housekeeping, cooking, personal care, and running activities) who is empowered to act upon both what he or she is seeing and resident needs. More continuous staffing (i.e., staff assigned to one household and at consistent shift times) is also allowing professional caregivers to form deeper relationships with residents. Many of the ways professional caregiver involvement can be promoted is through organizational expectations, operations and management. The physical environment should, however, support these policies. "If the primary responsibility of the direct-care staff is to attend to residents, then the facility should be designed to minimize time spent at other tasks."⁸²

Recommendations:

- 13a Organize households to promote staff communications and teaming. Household connections become important particularly as residents age-in-place (with a greater number of frail residents) and/or as residents' cognitive abilities decline.⁸³ As the cognitive and physical abilities of residents progressively decline, the professional caregivers' responsibilities increase. Facilities may find it cost-prohibitive to hire more staff, so proximity, communication and teaming become that much more important.
- 13b Integrate the staff workstation into the household—not behind closed doors or within a designated (institutional) nurses' station. Consider providing a residential-style desk or adequate space and equipment (e.g., data ports) at the kitchen counter. Note, however, that the workstation's papers, equipment, etc. should be able to be stored away, since some people with Alzheimer's disease like to rummage or take things apart. A lockable drawer or file cabinet can protect, for example, a laptop and confidential paperwork, as needed.



The professional caregivers' workstation may be integrated into the household's living space.

Courtesy of: Perkins Eastman

- 13c Locate the staff workstation along the main circulation path so that professional caregivers can more easily interact with and monitor residents and participate in everyday activities.
- 13d The staff workstation should include space for social seating. Residents will be drawn to staff and may even want to do “paperwork” alongside the professional caregiver (see recommendation 9c).
- 13e Include a system for electronic record keeping so that professional caregivers can perform such tasks as activity and household-based planning while remaining actively engaged with residents. This allows more face-time with residents and less time stuck behind a desk (or hiding behind a nurses’ station). Only detail-oriented tasks and duties that require concentration/quiet or privacy to meet HIPAA requirements (e.g., medical management) should occur away from the life of the household.
- 13f Locate supplies that professional caregivers regularly use close at hand to minimize trips away from the household. Strategically located and lockable storage cabinets, drawers, etc. allow staff to quickly and easily access equipment, supplies and medications. This is not only more convenient, but also keeps the professional caregivers engaged with residents rather than off on some errand.



A nurse server (i.e., a lockable cabinet at the entry to a resident’s bedroom) provides easy access to meds and supplies, allowing the professional caregivers to stay engaged with the resident rather than off running errands.

Courtesy of: Sarah Mechling/
Perkins Eastman

- 13g Consider the location of staff support space. While direct care activities occur in the household, there still needs to be a private workroom and/or retreat space for professional caregivers, healthcare professionals, and supervisors. This space can be used for private meetings or phone calls, collaborative work, record keeping and storage (e.g., medical supplies). This workspace should be strategically located for easy access by staff in order to minimize time away from the residents. This space should also be adjacent to administrative areas and back-up services (e.g., photocopying).

Best practices for senior living recognize that staff performs higher quality work by presenting the expectation that every employee has a professional contribution to make and fostering a respect for people's work, regardless of their position/department. Accordingly, not only should staff be supported in their day-to-day tasks, but the physical environment should also foster collaboration and teamwork, provide opportunities for professional growth, and let the staff know that—like the residents—they matter, too. Staff should have access to: places that offer visual and acoustic privacy, so that employees are not disturbed when they need to deal with confidential issues or tasks that require concentration; spaces where they can work individually or meet in small groups; spaces where education and training can occur; opportunities to control their environment (e.g., through personalization, the ability to achieve thermal comfort, task lighting); and natural light and views to the outdoors. In addition, providing more than the typical back-of-house break room conveys to staff that they are expected to perform at a high level of professionalism, and offers a place where people can rejuvenate themselves, socialize and learn. Furthermore, by providing a place where staff *wants* to go, employees from different parts of the facility will be more likely to come together, thus promoting inter-departmental communications.



Case Studies

To better understand how to apply the design guidelines outlined in this white paper, we present four case studies. These projects, designed by Perkins Eastman, vary in scope, location, cost per square foot, and many other factors. However, they all share a physical environment that supports people with Alzheimer's disease. Common attributes include home-like settings that encourage family-like relationships and everyday household experiences, support diversity and choice, and promote independence. (For more information about these or other dementia-specific projects, contact [Perkins Eastman](#).)

[Hebrew SeniorLife | Gilda and Alfred A. Slifka Memory Care Assisted Living Residences at NewBridge on the Charles, Dedham, Mass.](#)

Opened in 2007, this assisted living building for people with Alzheimer's disease is part of a 162-acre intergenerational residential care campus for 750 aging adults. The Alzheimer's-specific households are attached to an assisted living building that has a strong connection in both physical distance and design to the campus' community center. This proximity allows the community's frailer residents to access the retirement communities' plentiful amenities and maintain a strong sense of belonging.

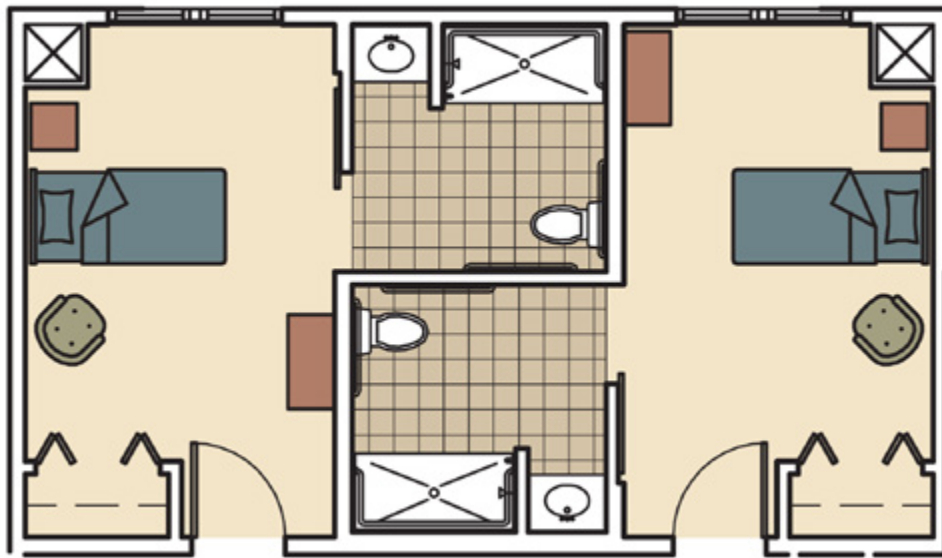


Floor plan, NewBridge on the Charles

Courtesy of: Perkins Eastman

The assisted living building for people with Alzheimer's disease is 27,367 square feet in size, with a cost per square foot of \$250 (in 2007 dollars). There are 40 bedrooms, divided into four households of 10 residents each. Each of the two floors contains two neighborhoods consisting of two households apiece. The two households on each floor share a family-style kitchen and a large gathering and activity room. Residents enjoy small-scale dining connected to a family kitchen, great room, living room, screened porch, and covered terrace for outdoor connections.

The building was designed around the concept of creating an optimal living environment that is grounded in the belief that an individual's life, although not defined by his or her functional ability, will be enhanced by an environment that supports his or her needs. The environment supports choice, diversity and individuality.



Resident bedroom plans, NewBridge on the Charles
Courtesy of: Perkins Eastman



Common living space (as seen from the dining room), NewBridge on the Charles
Courtesy of: Chris Cooper

U.S. Department of Veterans Affairs | VA Illiana Health Care System Community Living Centers, Danville, Ill.

This example of the VA Illiana Health Care System Community Living Centers is part of the U.S. Department of Veterans Affairs' plan to create new or renovated Community Living Centers (CLCs) on many of its medical campuses throughout the country. The projects are designed under the VA's CLC guidelines;⁸⁴ the residences at Danville are among the VA's first CLCs that are also certified by The Green House[®] Project, which offers a model for long-term care designed to "look and feel like a real home."⁸⁵

Opened in 2011, each of the two CLCs in Danville is approximately 8,400 square feet in size (excluding the 800 square foot garage), with a cost per square foot of about \$270 (in 2011 dollars). Each house includes 10 private bedrooms surrounding shared common spaces. The CLCs feature open living areas that provide an inviting place to gather, with an aim to combat loneliness. Open kitchens provide an opportunity to see, smell and participate in food preparation. Short hallways and bedrooms with a direct view to the common area lead to increased communication and decreased dependence on mobility assistance devices.

Residents have access to all areas of their home, including a physical therapy room, spa, den, garage, and front and back outdoor patios. They have the ability to participate in housekeeping and activity programming as they please, returning control to the residents and encouraging them to leave their rooms. The small scale of each house has led residents to report an improved quality of life and satisfaction with life circumstances. Administrators have reported fewer declines in activities of daily living, prevalence of depression, incontinence, and unexplained weight loss among residents. Professional caregiver turnover has also decreased.



Site plan, USVA
CLC – Danville
Courtesy of: Perkins Eastman



Floor plan, USVA
CLC – Danville
Courtesy of: Perkins Eastman



Exterior, USVA
CLC – Danville
Courtesy of: Sarah Mechling/
Perkins Eastman



Common living space
(as seen from the
living room), USVA
CLC – Danville

Courtesy of: Sarah Mechling/
Perkins Eastman



Resident bedroom, USVA
CLC – Danville

Courtesy of: Sarah Mechling/
Perkins Eastman

Jewish Senior Life | Marian's House, Rochester, N.Y.

Located on a residential street, Marian's House is an extension of Jewish Senior Life's community-based services. The single-family house-sized building opened in 2013 and is 5,323 square feet in size, with a cost per square foot of \$182 (in 2012 dollars). The building supports people with Alzheimer's disease still residing at home, and their family caregivers. Marian's House accommodates day visits and occasional overnight respite care in a contemporary, warm residential setting. The program offers meals, activities, supervision, and specialized activities for people with Alzheimer's disease. After hours, the building also serves as a community resource center.

In essence, the building consists of two interconnected houses on one site: There is a one-bedroom apartment suite for a 24-hour live-in professional caregiver, and a two-bedroom guest house that is used for day visits, overnight respite stays, and during evening hours as a place for training, classes and discussion groups to support family caregivers. The building sits comfortably among neighboring homes, reflecting simple gables and residential materials that help to visually reduce its larger size to passersby.

The interior layout of Marian's House is specially designed for both one-on-one interaction and group activities, with a large, open kitchen and eating area; great room for activities; dining room for shared meals or caregiver support meetings; den with a soothing, calm environment; screened porch overlooking the public street and front yard; fenced-in garden for safe outdoor access; two guest bedrooms for overnight respite stays; and an apartment suite for the professional caregiver.



Floor plan,
Marian's House

Courtesy of: Perkins Eastman

Marian's House has an openness that allows guests and caregivers to maintain connection with one another, whether preparing meals in the kitchen, sitting in the breakfast nook working on a puzzle, walking the garden paths, or relaxing in the living room. A vestibule and inconspicuous entry allow people to arrive discretely, while high ceilings and large windows in the main rooms open to the garden, directing resident attention away from the entry and into the secure garden area. Great attention was given to being welcoming and open, and encouraging residents to explore—while using design tools as the mechanism to create safety with multiple sight lines.



Exterior, Marian's House

Courtesy of: Rick Rebottini/
Perkins Eastman



Common living space (as
seen from the kitchen),
Marian's House

Courtesy of: John Smillie



Common living space
(as seen from the living
room), Marian's House
Courtesy of: John Smillie



Secure wandering garden,
Marian's House
Courtesy of: Rick Rebottini/
Perkins Eastman

Perkins Eastman | House for Betty (Conceptual)

Designed as a national prototype, the House for Betty is a conceptual single-family home for a couple where one individual is showing early symptoms of Alzheimer's disease or may have a genetic predisposal to Alzheimer's disease. The house supports someone as he or she ages-in-place, as the person may become cognitively and/or physically frailer—with the goal of delaying or preventing a move to a nursing home.

The house includes 1,920 square feet of interior living space, with an additional area of secure outdoor space (extent depends on the property size). The design replicates the look and feel of an active adult market-rate home, and allows the couple to age-in-place with dignity, hopefulness and a higher quality of life. Not yet constructed, the cost per square foot would depend on when and where the project gets built as well as the type of finishes/materials the owner selects (e.g., wood floors that cost more than vinyl, or granite countertops that are more expensive than plastic laminate).

The house is residential, marketable and indistinguishable from other homes on the block. Driving down the street, you would not be able to point out a House for Betty. However, during the design process, the designers created a room manifestation matrix for every single space in the house, listing the cognitive, social and physical needs that “Betty” and her spouse or another caregiver could face. More than 300 dementia-specific design features have been incorporated into the house to create the highest odds of keeping Betty at home.

Environmental supports inside and out are subtle, yet effective. For example, at the entry to the house, there is a separated foyer that can be closed off and has dim lighting and no windows to discourage entry. Good acoustics in this vestibule absorb noise from a short-term guest; and there is a separate, secondary entrance to allow for deliveries without disturbing Betty. In the kitchen, bathrooms and laundry room, there are glass-faced doors and labeled drawers to help Betty find what she is looking for. Other cabinets and drawers can be locked to store potentially hazardous items, like cleaning products.



Floor plan, House for Betty
Courtesy of: Perkins Eastman

Many other instances of smart technology and thoughtful design throughout a House for Betty allow the home to adapt over time to meet Betty's increasing care needs. The environment is peaceful, secure and flexible. The design honors people with Alzheimer's disease by providing them with a non-institutional atmosphere that allows them to age-in-place, and supports the spouse and/or other caregivers. Perkins Eastman's hope is that this unique design will create a more meaningful life for people in the early stages of Alzheimer's disease, and revolutionize thinking about appropriate design for memory loss neighborhoods.



Exterior, House for Betty
Courtesy of: Perkins Eastman



Living room,
House for Betty
Courtesy of: Perkins Eastman



Dining room and kitchen,
House for Betty
Courtesy of: Perkins Eastman



Bedroom, House for Betty
Courtesy of: Perkins Eastman

Conclusion

The evolution of care for people with Alzheimer's disease has come a long way in the last few decades, with meaningful initiatives taking root across sectors to promote health, wellness and high quality of life for this population. Despite a growing emphasis on person-centered care, however, designers and senior living providers are still struggling with how to best support the increasing number of people with Alzheimer's disease.

Critical issues that need to be addressed include how to support couples, without separating them, when one person is living with Alzheimer's disease and the other person takes on the role of caregiver; how to create physical environments that support intergenerational, supportive living for families; how to create affordable options; and how to meet the emerging trend, especially among baby boomers, to age-in-place, which may involve retrofitting private homes to accommodate a person with Alzheimer's disease as cognitive abilities and acuity levels progressively decline.

To successfully age-in-place, a majority of these individuals will need outside support and engagement, provided by community resources and/or outreach programs. For some, their care needs will eventually evolve to a point where they will require a physical move into a long-term care residence to receive the necessary level of care. At Perkins Eastman, we recognize this need and are beginning to ask: "How can providers reach out to these aging adults, support the community of would-be residents who currently live outside their walls, diversify their revenue bases, extend their brands, and develop customer relationships *before* adults with cognitive impairment need care that requires a move?"

We are currently exploring answers to this question, working with both providers and older adults to identify the varying needs of those who choose to remain in their homes. One possible answer stems from our recent work designing Marian's House (see case study on page 46).





Perkins Eastman is looking to partner with a care provider to create environments and programs that offer support throughout the continuum of care. Combining a Marian's House-style guest house and respite center, with a home care element, plus a community of small houses where one house provides assisted living memory support would very simply create a full spectrum of dementia support.

People facing early- to mid-stage Alzheimer's disease, who are still living at home, and their family caregivers would be supported by the Marian's House-style guest house. Those in mid- or late-stages of the disease could move into the memory support small house, a familiar environment that they may have become acquainted with through their day visits to the adjacent guest house. And lastly, if a resident could not be accommodated in the small house, a long-term care environment on a neighboring campus or within another specialized small house, run by the same provider, could provide end-of-life care. Adjacent grouped offices/staff support spaces and education and outreach spaces for community programming would round out the offerings. Through this kind of progressive care environment, we believe that providers and designers can, together, create holistic solutions to support and engage people aging-in-place, while developing enduring relationships with senior living providers.

Alongside aging-in-place, many people with Alzheimer's disease and their families are facing rising costs of care. As of 2012, the national average cost for custodial care in a private room in a skilled nursing home was \$81,030 annually; the national base rate for an assisted living residence was \$42,600 annually.⁸⁶ The challenge of affording residence in a long-term care setting is compounded by the fact that families, until the point of transitioning, may have spent months or years providing informal care to their loved ones, with the per-person cost of informal Alzheimer's disease care estimated at \$41,689 to \$56,290 annually.⁸⁷

Given the increasing costs of formal and informal Alzheimer’s disease care, the heavy financial burden on family caregivers, and the Affordable Care Act, which requires better patient experiences and improved medical outcomes at lower costs, it is important to also consider the financial benefits that can derive from a well-designed physical environment. As seen in the studies conducted on The Green House Project® small houses, residents living in these environments, compared to residents of traditional senior care settings, have lower Medicare and Medicaid expenditures as a result of staffing and operational efficiencies, fewer/shorter lengths of stay in hospitals, and residents maintaining their functional status longer.^{88,89}

However, for many individuals with Alzheimer’s disease and their families, the cost of care in the communities described in this paper is simply prohibitive—especially since only 16 percent of people older than 65 with incomes above \$20,000 have long-term care insurance that covers costs.⁹⁰ Families may find themselves in the situation of placing their loved ones in a nursing home setting prematurely due to financial reasons, rather than care reasons, since most skilled nursing facilities accept Medicaid, the only public benefit that helps to pay for custodial long-term care. In contrast, many assisted living communities and other residential care communities do not accept this benefit.

This leaves stakeholders with the challenge of determining how we can create greater access to living environments that integrate best practices for individuals with Alzheimer’s disease across the economic spectrum—not only for those individuals who are affluent, have long-term care insurance, or receive public benefits. This may include advocating for changes in the Medicaid and Medicare reimbursement systems to incentivize assisted living facilities and personal care homes to more widely accept these benefits. It may also include raising awareness among long-term care administrators about the cost savings to both facilities and families that can result when design best practices help avert other incidents from occurring, such as minimizing falls, elopement and other safety issues.

It is also important to address the need for greater access to the kinds of communities that would utilize the best practices laid out in this white paper. While assisted living environments, including those with specialized communities for residents with Alzheimer’s disease, are, on average, a more cost-effective model of care and offer greater levels of autonomy than skilled nursing, the “right fit” for one individual with Alzheimer’s disease may not be right for another person with the brain disorder. Many practical factors enter into choosing the type of community and the specific residence, including finances, insurance, location, availability, and the resident’s care needs.

As described in this white paper, the philosophies and environments of care for people with Alzheimer’s disease have evolved—and they will continue to evolve as the incidence of Alzheimer’s disease escalates, as senior care providers embrace optimal care and design as the norm, and, hopefully, as advances in medicine change the landscape of prevention, diagnosis and treatment of Alzheimer’s disease. Some senior care providers have been ahead of the curve, others are more recent adopters—but many more are still on the fence or exploring ways to improve their outdated facilities. Even with the progress in the industry over the past two decades, we recognize that we can push culture change and person-centered models of care even further—such as having more facilities adopt excellence in design standards, reaching out to the aging-in-place population, creating more affordable options, and developing a diversity of solutions to address the varied needs of people with Alzheimer’s disease. Perkins Eastman and the Alzheimer’s Foundation of America plan to stay at the forefront of these solutions.



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About the Author

Emily Chmielewski, EDAC, is a founding member of the Perkins Eastman Research Collaborative, an industry-forerunner of practice-based environment-behavior research. Chmielewski is an advocate for research in practice and assists clients and designers in creating better-built environments by pushing the boundaries of professional knowledge and improving environmental design. In addition to conducting in-house research, she offers a valuable service that has resulted in multiple client-funded and grant-sponsored studies.

Chmielewski's current area of focus is researching senior living environments. Her experience ranges from concise environmental audits that gather major lessons learned to more in-depth research studies that evaluate multiple aspects of a facility's physical environment and building occupants' satisfaction and use patterns. She has also established a standard procedure for post-occupancy evaluation as part of Perkins Eastman's project completion process.

Investigations performed by Chmielewski under the Collaborative have included a study on the impact of senior living environments on residents' sense of home and community; the development of design guidelines for two senior living providers; and researching an intergenerational, environmentally sustainable senior living/high school project, which won the AIA/AAHSA Design for Aging Special Recognition Award for research in 2007. Since 2008, she has conducted biennial data analysis studies for the American Institute of Architect's Design for Aging Knowledge Community, receiving the AIA Design for Aging Publication Award for research in 2009.

Chmielewski is EDAC certified and has a Master of Science in Applied Research in Human-Environment Relations from Cornell University and a Bachelor of Science in Architecture from The University of Michigan.

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About Perkins Eastman

Perkins Eastman is among the top design and architecture firms in the world. With more than 750 employees in 13 locations around the globe, Perkins Eastman practices at every scale of the built environment. From niche buildings to complex projects that enrich whole communities, the firm's portfolio reflects a dedication to inventive and compassionate design that enhances the quality of the human experience. The firm's portfolio includes education, science, housing, healthcare, senior living, corporate interiors, cultural institutions, public sector facilities, retail, office buildings, and urban design. Perkins Eastman provides award-winning design through its offices in North America (New York, N.Y.; Boston, Mass.; Charlotte, N.C.; Chicago, Ill.; Pittsburgh, Pa.; San Francisco, Calif.; Stamford, Conn.; Toronto, Canada; and the District of Columbia; South America (Guayaquil, Ecuador); North Africa and Middle East (Dubai, UAE); and Asia (Mumbai, India, and Shanghai, China).

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About the Alzheimer's Foundation of America

The Alzheimer's Foundation of America (AFA), based in New York, is a leading national nonprofit organization focused on providing optimal care and services to individuals with Alzheimer's disease and related dementias and their families. AFA's programs and initiatives are founded with the goals of: raising awareness of the disease; educating the public, healthcare professionals, and policymakers; meeting the diverse and growing needs of individuals and family members throughout the progression of the disease; advancing best practices in care in all types of settings; promoting early detection and proper treatment; prompting greater utilization of community resources; and ultimately improving quality of life. AFA's services include a toll-free hotline staffed by licensed social workers, educational materials and conferences, a free quarterly magazine for caregivers, Young Leaders of the Alzheimer's Foundation of America division, and a year-round memory screening initiative. Its Dementia Care Professionals of America division provides training, qualification, and membership to all levels of professionals; and its Excellence in Care program evaluates dementia care settings based on AFA's national standards of excellence in dementia care. AFA unites more than 1,700 member organizations nationwide that offer hands-on programs and services to meet the practical, educational, emotional, financial, and social needs of people impacted by dementia.

For more information about AFA, call toll-free 866-232-8484, visit www.alzfdn.org, follow us on Twitter ([@alzfdn](https://twitter.com/alzfdn), [@AFATeens](https://twitter.com/AFATeens) or [@AFAonCampus](https://twitter.com/AFAonCampus)), or connect with us on [Facebook](https://www.facebook.com/alzfdn/).

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For More Information:

www.perkinseastman.com/senior_living

Perkins Eastman's senior living practice is focused on ideas, innovation, and leadership. Whether your organization is looking for solutions in planning and design, strategic visioning, board education, partnership development, program management, or post-occupancy research, Perkins Eastman offers big ideas for a better vision.

www.alzfdn.org

Alzheimer's Foundation of America is a leading national nonprofit organization whose mission includes raising the bar on care and advancing best practices in all types of settings.

www.excellenceincare.org

Excellence in Care was established by the Alzheimer's Foundation of America as an initiative that involves evaluating and granting "Excellence in Care" status to dementia care settings based on national standards of dementia care—incorporating care, operational, and design elements.

www.careprofessionals.org

Dementia Care Professionals of America (a division of the Alzheimer's Foundation of America) trains, qualifies, and offers membership to all levels of healthcare professionals, with an eye on providing optimal care to individuals with dementia.

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