

Designing for Dementia: An Approach that Works for Everyone



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1 Introduction

It has long been understood in the design community that the built environment can have a profound effect on the occupants of that environment. As early as the first century B.C., Roman Vitruvius wrote that architecture should resolve three values: functionality (*utilitas*; it should be useful and function for the people using it), durability (*firmitas*; it should stand up robustly and remain in good condition), and beauty (*venustas*; it should delight people and raise their spirits) (Pollio, 1914). Two millennia after Vitruvius' tome was published, it can be argued that following these design principles provides environments that mitigate the effects of dementia within the built environment. But understanding how to translate both large and small details of design for dementia into a holistic and inclusive community can often be problematic.

The recent COVID-19 pandemic has provided an increased focus on senior congregate living facilities and how their design can alleviate the spread of any disease providing a healthier environment. It has also offered an opportunity to consider how senior living environments can serve as partners in the quality of senior care, particularly for those with dementia. There have been numerous articles and white papers produced examining how designers can be more conscious of the spread of disease within the confines of a congregate living facility. Many of these approaches easily cross over as effective elements in designs that contribute to a higher quality of life and greater independence for those with dementia. The design community has collected a broad knowledge base from which to draw when considering environments for those with dementia. The design principles from this base, while

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derived for those with dementia, can also effectively contribute to environments for any elderly congregate living facility.

Whether a design is meant specifically for those with dementia or for the broader elderly resident population, in the end, that design is meant to not only create a home for the residents but also, through that design, create a community (Cohen & Weisman, 1991). In order to be successful, that community's design needs to contribute to the residents' senses of place, purpose, independence, safety, and choice. This contribution must be telegraphed intuitively through the included design elements individually and their collective familiarity to the residents. Having followed the principles of completed gerontological environmental research, there are a number of completed senior living designs that have adhered to the tenets of "making home" and "making community" that can be utilized as examples to follow by designers for both environments for dementia and other senior living congregate designs. This chapter does not necessarily review the specific completed research, but rather how elements of that research have been successfully incorporated into completed environments.

1.1 A Design Vocabulary for Those with Dementia

Following a lengthy period when designers were little interested and did not understand designs for long-term care that were aimed at creating "home" for residents, several environmental gerontologists, led by M. Powell Lawton, began exploring and researching how built environments affect human behavior and in particular the aging and those with dementia (Lawton, 1980). As the presentment and recognition of dementia increased, perhaps due to the extension of life expectancy, designers and providers realized that the segregation of this group of residents might serve to improve their care. Basically, the newly created "dementia units" simply became a wing of those facilities that was secured by means of locked entrance doors to the wing. Of course, this tended to exacerbate the agitation of the residents in these "units" as the environment was certainly not a replication of the home from which they came.

Sometime following the middle of the twentieth century, academic interest in the cause of elderly dementia, and specifically Alzheimer's disease, rose significantly. The causes of cognitive disorders became clearer along with the manifestation dementia took in individuals. This knowledge and the accompanying interest by care providers to improve built environments for these individuals led to a significant increase by environmental gerontologists to research efficacious environmental design responses to elder cognitive losses. Academicians and practitioners alike began publishing their groundbreaking work, both in research and in-place environmental modifications and design (Lawton, 1980; Calkins, 1988; Cohen & Weisman, 1991).

However, this early work tended to focus on specific manifestations and efficacies of dementia such as incontinence, unproductive wandering, agitation, and

rummaging, and not on the total effects on an individual. These design efficacies, which are so well documented in the seminal work by Margaret Calkins and further amplified by Elizabeth Brawley through specific discussion of age- and dementia-related physical deterioration, were and remain quite useful for designers. They provide insight into the physical manifestations of aging as well as the cognitive manifestations of dementia and how those manifestations affect an individual's relationship to the built environment (Calkins, 1988; Brawley, 1997; Brawley, 2006).

Although this research tends to discuss the environment as a whole, many designers have unfortunately tended to utilize it simply as a menu from which selections could be made, and they have not necessarily considered them as a holistic design approach. Applied in this way, the efficacies could lead to stereotyping individuals with dementia and to not treating residents as individuals. In addition, the resultant environments become specifically tailored to a group of residents rather than one that can serve all elderly residents.

The environmental interventions suggested by this research included some very simple and commonsense approaches. These included the following, as well as others:

- Clear visual access to bathrooms that reinforces their location and use in order to avoid incontinence incidents.
- Display areas for resident memorabilia to identify individual bedroom occupancy and spark long-term memories.
- Minimization of “dead-end” corridors to eliminate a wandering resident's anxiety when they are faced with no choice to continue.
- Open serving kitchens that replicate residents' homes and provide the aroma of food being prepared and served.
- Use of visual design and artwork landmarks to provide orientation cues for residents.
- Allowing residents to bring their own furniture into their bedrooms to add familiarity to the space.

While these are just a few of the proactive design elements, they, as well as others, have in the years since their publication been utilized effectively throughout the senior living design world.

In subsequent years, many designers began to understand that everyone with dementia was indeed an individual, one with individual physical needs, individual cognitive losses, and individual personalities. Bolstered by Uriel Cohen and Gerald Weisman's research (Cohen & Weisman, 1991), designs of congregate living facilities and care programs began to take shape which were more “homelike” while maintaining specific elements of design that assisted the cognitively impaired and designed more to accommodate the culture and personal history of the individual residents. Designers began to understand the individual need for a sense of place, belonging, and community. It would take the design thrust of the small house design movement to bring to light a more holistic approach to built environments for those with dementia.

2 Translating Research into Reality

One of the first dedicated dementia environments that was constructed following this initial research was Woodside Place of Oakmont in Oakmont, Pennsylvania. First occupied in 1991, this assisted living environment is divided into 3 small households of 12 residents each along with a large central community area. Each household has two shared occupancy resident rooms and eight private rooms along with a household great room and serving kitchen. The central community area provides back-of-house functions and spaces for large group activities and other spaces for smaller and individual activities. Each household has a “front porch” and front door defined through architectural elements reflecting single-family design and that clearly announced the entry to a “home.”

The design incorporates the ability to display resident memorabilia on plate rails within the resident room and portrait photos of the resident as room signage. Dutch doors to the resident rooms are utilized so residents can feel secure but also visually recognize activities that may be taking place outside their rooms. Within the corridors, tactile artwork is hung to orient residents as they traverse to their rooms as well as heighten their sense of touch.

The three households are laid out in a manner that creates two secured courtyards accessible by the residents in good weather. Within the central common spaces, there are areas designed where residents can participate in individual art activities or simply sit in front of the fireplace, read a book from the library, or visit with a family member. The operational model is tailored to the individual allowing choice of mealtimes, access to areas outside the household, and interaction of visiting family members anywhere in the environment.

Throughout the built environment of Woodside Place, the design intentionally calls upon residential architectural elements which are at an individual human scale. From the moment of entry, the occupant feels comfortable and intuitively understands a feeling of home. This senior environment is built upon the evolving research of the time and has added its own research to the collective knowledge base while providing dementia care that allows residents safety of place and supports efficacies for their memory losses. A community of residents is created at Woodside Place through the environmental design and the care program that interacts with that design (Anderzhon et al., 2007).

2.1 *The Small House Concept*

Although the small house design concept, such as Woodside Place, emanated from a variety of sources as a response to the traditional medical model of senior congregate care, it was broadly brought to designers’ attention in the early part of the twenty-first century by Dr. Bill Thomas’ Green House® movement. This approach provides a significant move forward to creating an environment that respects and

embraces the typology of home and, in particular, the principles espoused by Christopher Alexander's "*A Pattern Language*" (Alexander et al., 1977). The Green House® concept clearly delineates public, public-private, and private domains within the residential environment and thus allows for a more intuitive sense of place by the residents. The small number of residents within the environment, along with consistent staffing and encouragement of family members to participate in the care program, also provides a sense of belonging and continuity for the residents.

The first Green Houses® constructed in Tupelo, Mississippi, were a successful move forward toward community for dementia care and away from the traditional, staff-oriented, medical model of care. The objective was to create an appropriate environment in which residents could be as independent as possible and staff could be empowered to provide superior care. Additionally, the small house design intent was to enable the care environment to be translated into any residential location and to be an essential part of the surrounding community (Robert Wood Johnson Foundation, 2007).

These small houses are limited to 10 residents and foster the "family" experience through both physical environmental design and care operations. The house layout allows each private room visual access to the center public-private portion of the house where activity gathering takes place. Additionally, the open kitchen promotes resident participation, either actively or vicariously, in meal preparation, allowing the aroma of that preparation to invigorate resident's appetites. The large single community dining table where residents and staff dine together promotes social interaction around mealtimes.

Design of the Green Houses® includes all the elements that previous research had indicated would be efficacious for individuals with dementia, allowing them more independence, choice in life's activities, and a resultant-reduced anxiety. As such, it could be argued that this original design was one that was the complete package for senior congregate living specifically for those with dementia. Bringing these elements into a single design that also integrates a coordinated care program which fully involves residents in the decision-making process is a major step toward forward-thinking dementia care. In a study completed in 2007 to determine the effects of this built environment on residents' outcome and quality of care (Kane et al., 2007), it was found that residents achieved a higher level of satisfaction with their environment and had better emotional well-being, a lower incidence of decline in activities of daily living, and improvement in meaningful activities and relationships.

These first Green Houses® are unfortunately built in an area significantly remote from the remainder of the life plan community campus. Community integration beyond their enclave of small houses is somewhat difficult, and, as a result, residents are still faced with some segregation from an embedded larger community sense of place (Anderzhon et al., 2007). However, the concept has become a benchmark for all senior living design that provides residents with an intuitively familiar environment, continuity of the lifestyle, enhanced choice, and increased independence.

There are obvious benefits to small house senior living environments beyond those that have to do with dementia. Empirical evidence during the COVID-19 pandemic showed that spread of the virus was less in small house settings largely due to the ability to segregate the small number of residents and fewer staff within the small house. Consistent staffing and the ability to quickly test residents and staff along with restrictive control of vendors and visitors diminish the spread of COVID-19 or any other disease. These benefits combined with sensible design utilizing efficacious elements for those with dementia point to the logical consideration of small house design for any senior living congregate facility. One must keep in mind, however, how a small house or group of small houses can become a viable community outside of the house in the broader community.

As originally conceived, the Green House[®] concept was meant to be adaptable in any neighborhood as, architecturally, it is simply a large house and thus can be placed on any single-family lot assuming local zoning regulations allow. With this design approach and a collaborating programmatic approach, connection to the larger community could be expedited and celebrated (Fig. 1).

The Green House[®] approach, while somewhat regulated by the Green House[®] organization, allows freedom of architectural design depending on location. But each building, regardless of location, incorporates the principles and elements that best serve those with dementia as previous research conclusions provided. These first Green Houses[®] were designed to be specifically for individuals with dementia. But the small house design concept, following the typology of home, has spread widely throughout senior living design to serve the elderly regardless of acuity levels.



Fig. 1 The large household dining table provides opportunity for social interaction during each meal. (Photo courtesy Jeffrey Anderzhon)

2.2 *Adding to Community*

Shortly after the Green Houses® in Mississippi opened, Park Homes, a life plan community in central Kansas, chose to replace their aging skilled nursing facility with the small house concept, but in a manner that would maintain the connection of the residents to the larger campus community. The campus in this small rural town sits amid a mid-century single-family housing development and is often the center of activity for community residents.

Understanding that while only a few residents are diagnosed with dementia, most of their resident population are of an age where their cognitive memory is at least partially diminished. The client's building program was to construct free-standing small houses that function well for their elderly population regardless of physical or mental acuity. It was also decided that when complete, the population would not be segregated according to memory loss but allow residents to maintain the social relationships they had established over the years within the community.

The design of the houses, along with the repurposing of the existing traditional nursing facility, provides both a sense of place for the residents and, through the built environment, a variety of opportunities for social interaction. It also creates a familiar setting for the residents by means of simple residential architecture surrounded by exterior spaces replicating those within the larger community.

The siting of the new houses around the repurposed skilled nursing building provides two distinct and secure courtyards or backyards to the houses. The smaller one is designed to be a "passive" courtyard with plantings that attract butterflies and small birds. Contemplative seating areas around the courtyard provide serendipitous social opportunities, and both sunny and shaded areas are included within the courtyard as a part of the houses' design. The larger courtyard serves as the "active" one with playground equipment for grandchildren and exercise stations for residents. These courtyards are fully secured allowing residents access without overt staff oversight (Fig. 2).

The small houses accommodate 12 residents, but the large private rooms are sized to allow two resident occupants when couples move in. Residents are strongly encouraged to bring their own familiar furnishings to their rooms. Extra storage space is accomplished by window seat benches in some rooms. Full bathrooms, including no-barrier showers and large vanities, are finished with ceramic tile, a finish with which most residents would be familiar. Visual access is provided to the bathrooms from most areas of the resident rooms. Electrical wiring in the rooms is done in a manner that allows easy change of overbed lights when the resident wants to rearrange their furniture.

The house design provides a layout that complies with a resident's home typology including a distinct front door that leads to the living room, or public-private space, complete with an iconic fireplace. Beyond this public-private space, there is an open plan serving kitchen, dining room, and family room that are fitted with a variety of natural and artificial lighting levels that allow staff to lower anxiety levels or assist in promoting resident circadian rhythms. The bedroom entry points are



Fig. 2 The siting of the Park Homes provides passive and active secured courtyards. (Image courtesy of Jeffrey Anderzhon)

clearly a part of the private space of the house with small transitional living or social spaces for each four-bedroom grouping. This transitional space introduces an additional layer of community for residents.

Residents can sit at the lower-level kitchen counter to assist staff in meal preparation or to simply observe the meals being prepared and enjoy the aromas of cooking that may serve to enhance their appetites. As meals are not served on a rigid schedule, this is where residents can take a late breakfast or a midday snack enjoying conversation with the staff or other residents.

In good weather, residents are free to leave the house to enjoy the outdoors. They can sit on the shaded patio or freely wander through the secured gardens. These have been specifically designed with surfaces and plantings that are appropriate for the level of cognition experienced by the resident. As a safety measure, staff has full and adequate visual access to these areas from most locations within the house and thus can provide covert oversight and rapid response, if necessary, of resident activities within the garden areas.

The built environment at Park Homes is completed with simple architectural design but in a manner familiar with that which the residents have known. The houses' layout complies with an intuitive residential one and staffing within the houses is consistent. The design includes elements that are efficacious for those with dementia as indicated in early research. The result is a modified institution more readily accepted not only by the residents and staff but also by the surrounding community (Anderzhon et al., 2012).

2.3 *Extending Community*

In 1692, Sir Christopher Wren, the well-known early British architect, completed the design for the Royal Hospital Chelsea on the banks of the Thames River in London, UK. This early senior living community was intended to be a retirement home for veteran non-officer pensioned soldiers who had no other living or care arrangement choice. For the following 300 years, the Royal Hospital struggled to provide care service for residents who, after living in the facility for many years, found their health deteriorating significantly. (Note: The terms “hospital” and “infirmary” as used in the United Kingdom do not always refer to acute care provided as it does in the United States and elsewhere but refer more to the resident living arrangement combined with some level of care.)

In 2009, the Royal Hospital completed the Margaret Thatcher Infirmary on the 67-acre in-town site adjacent to Wren's architecture. This building now houses residential care, nursing care, and dementia care residents. While these care levels are segregated within the building, there is little difference in design between each care level within the three-story-square donut-shaped structure.

Wren's original design of berths (small sleeping rooms) for the pensioners is rich with wood finishes and details, and each private berth includes a Dutch door enabling the pensioner to sit in his room and visually connect with activity occurring just outside the room. The design for the new infirmary replicates those attributes by extensive use of wood finishes. But more cleverly, the new design includes full doors with upper glass vision panels glazed with integral blinds controlled in a way that allows the resident to leave them open to view activity outside the room. Additionally, if the blinds are closed, staff can open them with a special key in order to briefly check on the resident without fully opening the door and disturbing them (Figs. 3 and 4).

Fig. 3 Berths in Royal Hospital Chelsea, designed by Sir Christopher Wren in 1692. (Photo courtesy Jeffrey Anderzhon)



Fig. 4 Replicated pensioner berths in Margaret Thatcher Infirmary. (Photo courtesy Jeffrey Anderzhon)

The care programs are divided into small houses that merge seamlessly with one another. Living and dining areas are conveniently located so residents have very little distance from their room to an activity or social area. The designers replicated the small gathering and seating areas from the main hospital in the infirmary but with a more contemporary feel. The dementia households have direct access to the center courtyard formed and secured by the building's shape. This also allows care staff to have continual visual access to this nicely landscaped exterior area from the centrally located social areas.

Each resident room is fitted with a "memory case" where residents generally display memorabilia from their time in the military service. This design touch replicates the Wren design of the resident berths where there was a small shelf at each berth for pensioner memorabilia. The original Wren hospital design has an oak-paneled covered colonnade with built-in benches facing the hospital parade ground where pensioners can sit and enjoy the view toward the Thames. As a clear reference to this design element, the infirmary has a wood paneled enclosed "colonnade," complete with built-in wood benches that allow residents to also sit and admire the views through large windows.

As most residents of the infirmary have spent several years on the Royal Hospital campus, the infirmary design required a continuation of the gained sense of place for both those with dementia and those who simply needed additional health care. This is accomplished by providing design elements with which residents are familiar but in updated, more contemporary ways. The pensioners are already accustomed to a level of socialization with each other which is well supported within the design layout of the building and building's exterior spaces. The dignity, independence, sense of place, and sense of community are clearly supported by the design.

In its exterior design as well as its interior layout and finishes, the Thatcher Infirmary completes the community of the Royal Hospital. It does so with respect to the Wren original but, more importantly, in a manner with which residents are familiar and comfortable regardless of their care level.

2.4 Replicating Community

Contemporaneously with the Green House® concept and the Park Homes design, The Village at Waveny Care Center in New Canaan, Connecticut, embarked on the construction of a new dementia care environment that includes assisted living residency and adult day care for those with dementia. These two programs are physically separated by a large "main street" space for activities, social events, and commercial replication of the New Canaan main street. The main street provides a meeting place for both programs and larger community events.

Understanding that the residents of the new environment would predominantly be from the New Canaan community in which they have resided most of their lives, the designers were tasked to provide a familiar environment. This was considered a way to ease resident move-in and orientation. Replicating the community's main

street, complete with storefronts for a convenience store and ice cream parlor, would also provide residents opportunities for an outing away from their rooms and small house functions.

The new main street serves another purpose beyond simple familiarity: it has become a meeting place for residents and family members with spaces for both privacy of conversation and engagement with others. It is a popular location for birthday celebrations that involve the entire community, for concerts from local high school bands and choirs, and for simply taking a stroll from “home” to the garden at the end of the street. Simply put, the Waveny main street has become a broader center for community engagement allowing residents and day care clients a continuation of their community involvement.

Unlike other, subsequent design attempts at providing a “main street” experience for dementia residents, the Waveny design is neither contrived nor artificial. The design elements utilized are drawn directly from those present in New Canaan and with which the resident would be familiar. Their integration into the campus community becomes much easier and expedient. Their ability to understand the community and maneuver through it also becomes easier. Staff provides both active and passive activities on the main street that fully engage residents and day care clients and that promote independence and purpose and an enhanced sense of place and purpose.

The residential portion of the project is a two-story structure divided into two small houses on each floor of 13 residents each. Resident rooms are large, enabling residents to bring and arrange their own furniture to personalize their private space. Each small house has a living room and serving kitchen. Residents can choose to eat in their house or enjoy a meal in a larger restaurant-like dining room located just outside the small house.

Each resident room has ample built-in storage and display space for personalization as well as a full bathroom with barrier free access and easy visual access from the resident room. Within the small house, residents can easily access the many activities or social gatherings that take place in the common spaces. While the small house does not fully follow the tenets of household typology, each set of four resident rooms is accessed through a transitional space that residents can claim as their own, and not directly from a common corridor.

The Village at Waveny Care Center provides the New Canaan community with a dementia care environment that not only enhances the care for residents within a familiar environment but also adds a community gathering center for the entire town. It has easily become an integral part of the larger community and thus has extended the sense of community and belonging to residents.

2.5 Creating a New Community

In 2009, the not-for-profit Dutch senior living provider Vivium Hogewey had become dissatisfied with an older dementia environment they operated. They had extensive experience in dementia care for seniors and through that experience had

amassed knowledge of better methods and better environments in which to provide dementia care. They thus began a journey to reinvent dementia care in the Netherlands and eventually created an approach that is now looked upon internationally and often studied as the benchmark for creation of dementia care program and environment that provides residents with familiarity of place, enhanced independence, and choice all within a complete community.

De Hogeweyk[®], located in Weesp, Netherlands, is a result of Vivium's disruptive and forward-thinking desire to provide a deinstitutionalized setting for the care and housing of those with dementia. Simply put, De Hogeweyk[®] is built as a fully functioning community that meets the needs of the residents but is not segregated from the surrounding community.

Built with 23 small houses for residents, the community is inward looking without disassociating itself from its surroundings. The construction fills a site about a block square in a residential area and is two stories in height with the outside façade appearing to simply be a nice-looking residential block, not unlike any of its neighbors. The outer edges of the building reach the extent of the lot, and the façade design is varied in order to scale it to a residential level and to provide indication of differing uses beyond.

Within that façade, there is a vibrant and extensive use of courtyards, building layouts, main streets, and side alleys. Each of the households within the structure is a home for six residents and is entered off one of the interior streets, either at grade-level street or at the elevated level directly above the first. Households are self-contained complete with great room, kitchen, and private resident rooms. While the resident rooms do not have en-suite bathrooms, the arrangement of them is more like a small house with a shared bathroom off the corridor near all the bedrooms and becomes quite familiar to the residents' experience in their previous homes. Households have well-appointed private entry courtyards that are inviting and are often utilized by residents for their morning coffee.

The system of "streets" leads in a logical way to the main boulevard and then to a plaza around which is a small grocery, a restaurant with a bar and streetside dining, a post office, a theatre, and the main entrance for members of the surrounding community. The boulevard and plaza have resting benches, umbrella tables, information kiosks, water features, tricycles for anyone's use, and areas for concerts and art displays. Residents are completely free to navigate the small, complete village at their leisure (Fig. 5).

Staffing in the households is consistent, and, along with the residents, each household really becomes a family. Encouraged to assist in meal preparation, laundry, and other household chores, residents quickly are filled with a sense of purpose. The households are furnished and finished in traditional Dutch fashion with residents allowed to bring personal memorabilia and small furnishings into their rooms.

The inwardly focused design of De Hogeweyk[®] provides a sense of safety and security. The design also enhances the sense of belonging as the households are small, "family"-oriented, and closely adjacent to one another. This proximity encourages residents from adjacent households to socially congregate in the small entry courtyards for morning conversations.



Fig. 5 De Hogeweyk® interior streets lead to the plaza and offer many activities for the entire community. (Photo courtesy of Vivium Hogewey)

The belief that an individual's life does not occur solely within the confines of a home or a bedroom is the foundation of De Hogeweyk's® design. Understanding the principles of designing for those with dementia have, for the most part, been implemented within this environment. But to its credit, the design goes further. The project, simply put, created a full and vibrant community that allows residents a greater sense of independence without overt staff oversight. The design promotes social interaction among residents by providing that community with physical locations to socially interact in an unstructured manner, not unlike similar opportunities in the environments from which the residents came.

Vivium De Hogewey provided, within their building program, a design framework that by all standards has been accomplished:

- A favorable human-scaled and familiar physical surrounding where confusion and anxiety of place are minimized.
- Providing for life's pleasures and for a meaning and purpose of life.
- Experiencing a high quality of living and well-being.
- A favorable lifestyle, determined by the resident.
- An enjoyable and fulfilling place for caregivers and volunteers (Anderzhon et al., 2012; Godwin, 2015; Sodo & Winters, 2021).

3 Conclusion

As the twentieth century ended, senior living designers understood the built environment, as we had known it, was generally not providing the quality-of-care elders deserved, particularly for those with dementia. Part of that understanding was that

most senior environments traumatized residents as they moved from a familiar home and community environment into an unfamiliar, regimented, and mostly homogenously designed congregate setting, one void of individuality and choice. It was also understood that most senior living environments were institutional in nature, were designed for staff efficiency rather than resident needs and comfort, and were unresponsive to specific needs of those with dementia, stereotyping the needs of the elderly. These underlying principles tended to lead to designs that ignored individuals' sense of purpose, sense of place, belonging, independence, dignity, and choice.

There is really no question that the understanding of dementia as well as the design of environments for dementia has significantly advanced over the past few decades. The knowledge base of how environments for those with dementia can affect residents has grown significantly, continues to increase, and is widely available to designers. Unfortunately, many designers are still focused on designing for a stereotype or with their own unsubstantiated perspective of how a building should function and look. Regardless of whether the design is for dementia or simply the elderly, ignoring the individuality of occupants is an unproductive and an antithetical approach to serving the occupants of the environment.

Current quality, sensible designs for dementia have also led the way in "cross-over" senior living designs. Small houses have been shown to be operationally highly efficient with less staff turnover and a greater ease in maintaining full census. During the pandemic, small house residences have demonstrated less likelihood to spread virus to a wider audience and easier to isolate residents while even allowing a higher level of family visitations. They continue to demonstrate a higher level of resident wellness and physical and emotional well-being.

The fundamentals promulgated through research have, over time, been shown to assist in the independence of not only those with dementia but also any elderly individual in a congregate setting. Utilizing those principles, combined with the design typology of home, also allows providers the versatility of moving quickly from nonspecific dementia care to a household specifically for dementia without major financial outlay.

Providing design that is familiar to residents translates into faster orientation and an easing of trauma associated with moving into a new environment. Allowing residents to bring their own furnishings into that environment goes another step further in this process of orientation and independence. Utilizing visual cues and furnishings and finishes that enhance residents' visual and tactile senses promotes and stimulates individual intellectual well-being. Resident innate spatial layout familiarity of "home" is promoted with logical and familiar building layout.

It is neither difficult nor technically challenging for designers to apply the well-researched principles to new elderly design projects. The result, regardless of the level of care intended, will be more of a home for the residents and an extension of the community from which they have come. It is a design approach that works for everyone.

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