

ACCOMMODATIONS FOR SENIORS

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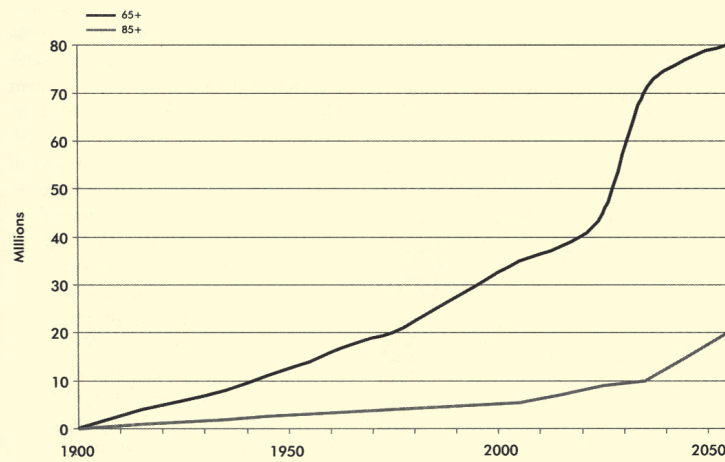
INTRODUCTION

According to the U.S. Census Bureau, the elderly population will more than double between now and the year 2050 to 80 million. That means roughly one out of five adults in the United States will be over the age of 65. More people are living longer, and growth of the over-100 age group is even more startling. In 2000, approximately 100,000 people were over 100 years old, and by 2050 this figure is expected to reach almost 1 million. As a result, one of the biggest challenges in the next 40 years will be how to meet the demand for quality living environments and care needs for the growing population of older adults.

The increasing numbers of seniors, combined with changes in the way they want to live out their later years are creating the need for new care and housing options. Thus, new ideas about senior care and housing have developed that look at these environments not simply as health care facilities, but as seniors' homes. The increasing emphasis on social aspects in health care is a major challenge. People want to spend their

old age in a cozy, home-like place, not someplace where they are treated like bothersome patients.

Abandoning the concept of isolation has consequences on the building's design. Anonymous entry halls, blind passages, and the lack of transition zones between collective and private spaces are not designs that help people feel at home. Seniors want their living quarters to radiate hominess and be recognizable as a personal residence. The conventional home for the elderly has served its turn and is being replaced by more modern arrangements combining both living and care functions. In this type of environment, people preserve their independence as much as possible. Architects need to no longer restrict their plans to functionality, efficiency, and economic profit. They must integrate social aspects as well. This mini-monograph, taken from NCARB's monograph *Senior Living* reviews the three aspects of senior living: interior design, landscape design, and wayfinding.



Total number of persons age 65 or older in the United States, by age group, 1900 to 2050, in millions. U.S. Census Bureau, Decennial Census Data and Population Projections.

Note: Data for the years 2000 to 2050 are middle-series projections of the population. Reference population: These data refer to the resident population. Source: U.S. Census Bureau, Decennial Census Data and Population Projections.

CONTINUING EDUCATION

Use the following learning objectives to focus your study while reading the semi-annual *Direct Connection/Professional Development (PDU)* and AIA Continuing Education (CEU) HSW credit article. To receive credit, go to the NCARB web site: www.ncarb.org, click on "Publications and Resources," then "Mini-Monographs," fill out the registration form and payment information and you will be given an online access number and be able to take the quiz for credit online.

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LEARNING OBJECTIVES

After reading this article, you should be able to:

1. Learn about the new ways architects are responding to the needs of the elderly resulting in more modern designs combining both living and care functions.
2. Understand how interior design is a critical component to a facility's success as an appropriate setting for the aging.
3. Evaluate and design the hierarchy of spaces as one makes the transition from indoors to outdoors, adding interest and support memory.
4. Examine the criteria needed to determine the critical selection of furniture to accommodate the physical effects of the aging process.

INTERIOR DESIGN

INTERIOR DESIGN FOR SENIORS

For many seniors the interior design of their home or health-care facility can be more important than any other aspect of senior living. Besides the importance of the overall plan and systems (structural, mechanical, electrical, etc.), the interior design is a critical component to a facility's success as an appropriate setting for the aging. For example:

- The wrong mounting height for an appliance or handrail can make it unusable.
- An incorrectly shaped handrail, especially one that is too narrow, can be hard for an arthritic hand grip.
- Some floor patterns with strong contrast can be perceived as a hole or step impeding mobility for those with restricted vision.
- A poor selection of lighting fixtures can create glare that can effectively blind residents.
- Many chairs and couches are too deep or do not have arms that permit a frail person to rise from them without assistance.
- The wrong carpet will trap stains and colors created by incontinence.

These are just some of the hundreds of interior design issues that a sensitive, informed interior design can overcome.

The following list represents common goals for the basic quality-of-life issues.

- A safe and comfortable environment that is supportive of the resident's need to maintain independence.
- Design that seamlessly incorporates the necessary support devices (such as grab bars and handrails) in an unobtrusive manner.
- An interior environment that avoids the institutional stigma associated with traditional medical and hospital settings.
- 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.

As described in NCARB's *Senior Living* monograph, there are a myriad of different types of living care environments for the older adult population including; geriatric clinics and adult day care, skilled nursing facilities, assisted living, Alzheimer's/dementia residences, independent congregant living and continuing care retirement communities. Although there are many differences between the types, there are also factors to keep in mind for all interior spaces designed to meet the needs of older populations. They include:

- Installing evenly distributed non-glare lighting with appropriate foot-candle levels specific to tasks by area.
- Providing contrast between the horizontal and vertical planes to provide better visual discrimination that will improve the sense of balance. For example, a corridor whose floor and wall finishes were a similar color and value were perceived by the residents of one facility as a "muddy river."
- Being sensitive to acoustics when designing and selecting finishes; choose those that reduce background noise for improved hearing at social gatherings.
- Flushing transitions from one flooring material to another are vital. Plan for slab recesses to reduce trip hazards.
- Avoiding sharp corners or edges in millwork, wood trim, furniture, hardware, and other interior elements.
- Choosing flooring products that have patterns without high contrast and with colors close in value. Otherwise there is a potential for vertigo and falls.
- Selecting textiles and wall coverings with easily recognizable patterns that will not be perceived as objects, faces, or animals.

There are a myriad of different types of living care environments for the older adult population.

The overall goal of interior design for seniors is to provide an environment that does not feel institutional. Even the most acute level of care in a skilled-nursing facility should not feel hospital-like as it is the resident's home, not a place where they are staying short-term. The current buzzword is "feeling." Rooms should feel residential, with the style and quality of a hotel and the comforting detail of a home. The design must incorporate a variety of spaces that support varying levels of contact, such as large-scale spaces for holidays or special events, and small cozy spaces for family gatherings and quiet times.

Each facility type, whether assisted living residences, long-term care, adult day care, rehabilitation, etc., share basic quality-of-life goals, but each must address different issues specific to each stage of aging.

FINISHES

		Floor	Base	Wainscot	Wall Below Wainscot	Wall Above Ceiling	
LONG-TERM CARE							ACT=acoustic ceiling tile CPT=carpet CT=ceramic tile CT/B=ceramic tile base CT/P = Ceramic Tile and Paint GYP=gypsum board P=paint VB=vinyl base VCT= Vinyl Composition Tile VCT/P=Vinyl Composition Tile and Paint VS=sheet vinyl VS/B=flash cove base (integral with flooring) VWC=vinyl wall covering WWC/B=wall-covering border WD=Wood
Resident room	Basic	VCT	VB	P	P	ACT	
	Average	VS	VB	P	P & VWC/B	GYP	
	Above average	CPT	WD	VWC	VWC	GYP & ACT	
Resident bathroom	Basic	VS	VS/B	P	P	ACT	
	Above average	CT	CT/B	CT/P	P & VWC/B	GYP	
Resident corridor (with handrail)	Basic	VCT/P	VB	P	P	ACT	
	Average	CPT	VB	P	P	ACT & GYP	
	Above average	CPT	WD	P	VWC	ACT & GYP	
ASSISTED LIVING							
Resident room Tea kitchen	Basic	VCT	VB	P	P	ACT	
	Average	VS	VB	P	P & VWC/B	GYP	
	Above average	WD	WD	VWC	VWC	GYP & ACT	
Bathroom	Basic	VS	VS/B	P	P	ACT	
	Average	CT	CT/B	CT/P	P & VWC/B	GYP	
Living area	Basic	CPT	VB	P	P	GYP	
	Average	CPT	WD	P	P	GYP	

- Specifying colors that are not so dark that they are perceived as black or so subtle that they appear dreary to the aging eye.
- Choosing floor finishes that are not slippery or have a high-gloss appearance.
- Installing carpets with fiber construction and moisture-barrier backing systems appropriate for the aging population with incontinence.
- Limiting use of mirrors on walls to create the illusion of space, as this can cause confusion and disorientation.

Finishes provide the backdrop for a residential setting. Many issues influence the choice of finishes. For designers the aesthetic appearance is a primary consideration; however, cost, appropriate construction for the function of the area, durability, maintenance requirements, visual effects of patterns, and the mobility constraints of the surface must be considered as well.

Consider that contrast can improve seniors' ability to locate assistive devices such as grab bars in the shower and doorways. Color is more than a decorating tool, if used properly it can be used as a visual identification system. Too many bathrooms are white on white, making it difficult to clearly see grab bars and the exact location of the toilet or the edge of the shower. The transition between different types of flooring must be as close to flush as possible to avoid trip hazards. Wall-protection systems, such as corner guards and

rub rails, should be strategically integrated into the design of high-traffic areas so they do not detract from the residential feeling of the interior. Strong primary colors can be pleasing at first, but can become tiring. Strong colors should be used as accents. Too much color can feel just as monochromatic as neutral, similar colors.

The key issue in finish selection is to choose appropriately for each facility type. The accompanying chart illustrates the basic application finishes in two facility types providing a higher level of care.

The choice of finishes for independent living is very much budget-driven, depending upon the location and market demands. Usually, due to financial constraints, prospective renters or buyers are offered a basic level of finish with associated upgrade packages available at additional cost. Many communities allow the resident to do their own upgrades with a clause that the unit must be returned to the original condition at the request of management. The kitchen and bathroom offer the widest range of potential upgrades.

Furniture selection should start in schematic design. In the programming and planning phase it is critical during test layouts to use properly dimensioned furniture. The furniture shown in the drawings should reflect the actual items to be used so the area planned is large enough to provide the

proper accessibility clearances for wheelchairs or supportive devices such as walkers. The most common mistake is to use prepackaged furniture templates available in CAD programs, particularly in dining and activity spaces. The chairs typically included in the template are only 18 inch square, when a chair with arms is at least 22 inch square in width and depth. Multiply this 4 inch difference by 60 to 80 occupants and the room becomes too small to accommodate the furniture. Another problem with the typical CAD templates is the size of a table for four. Many times it is only 36 inch square. Depending on the type of facility, tables as large as 48 inch square are required if meals will be served on trays. When planning the dinner areas, it is crucial to understand the food-delivery system to be used, since it directly affects the size of the table needed, and thus the square footage per occupant ratio used for planning purposes.

It is recommended that a variety of seating choices be provided to accommodate two, four, and six persons. There are furniture options such as table for four with leaves that flip up to create a round table for six. It is suggested that the table for two have the same dimensions in one direction as the table for four, so that they can be joined for flexibility. Review the height of the table to determine if wheelchair accessibility is required. Adjustable-height tables are available, but in most cases the bases are not aesthetically pleasing. Some manufacturers have introduced wooden pedestals that are adjustable.

When selecting furniture for various types of senior housing and care, the physical frailty of the users must be kept in mind. Although the occupants using each level of housing and care option will vary, it is better to err on the safe side by selecting for the frailest keeping in mind that aging in place is a common aspect of most facilities. The physical effects of the aging process can be addressed by selecting furniture that meets the following criteria:

- Proper dimensions: seat height 18-19 inches, seat depth 20 inch maximum, arm height 25-26 inches; style of arm: the arms must extend to the front of the seat so that they will support the weight of residents who lean on them in order to stand or sit unassisted.
- Density and firmness: The cushions must be supportive so that the bottom of the seat will not sink much lower than the height of the occupant's knee.
- Upholstery issues: To address incontinence, the current trend in upholstery is a woven material known as Crypton, which is sealed to repel stains and prevent the passage of moisture through to the cushion. This can be an attractive alternative to stiff and sticky vinyl upholstery. There is upholstery material made out of nylon that has the same protective top layer as the traditional vinyl material, but is soft and supple like leather.
- Durability of construction: Although a residential appearance is desirable, the construction must be of commercial quality with bracing and sturdy joinery. Chairs for dining should have cross support stretchers to prevent the legs from loosening due to the constant pushing and pulling from residents sitting at and rising from the table. Casters can be added to the front legs to reduce the stress on the structure of the frame and assist the resident when pulling up to the table. For safety reasons, however, casters should be placed on the front legs only.
- Appropriate weight: Furniture to be placed in rooms with multiple functions and flexibility, such as stackable chairs, need to be light enough for the occupant to move while still providing a safe stable frame with arms that will not tip over when the seated person tries to rise. Tables that fold need to have mechanisms that lock in place for stability without any sharp edges or movable parts that can cut and pinch when set in place.
- Rockers: Studies have shown that rocking chairs have a positive effect on the well-being of senior populations. There are safety concerns associated with the standard rocking chair, however. They are a trip hazard, and there is the possibility of rocking over someone's foot. The safest way to provide the benefits of the rocking motion is a stable rocker that will not tip forward when the resident uses the arms for support. There are many manufacturers of this type of seating.
- Code: In skilled nursing, state health codes often mandate the minimum furniture to be provided in each resident room: typically a bed, a wardrobe, a chair, a nightstand, and a bulletin board.

Some important interior details that should be considered in most facilities include:

- Package/purse shelf: A convenient shelf adjacent to the corridor side of the resident-room door on which to set a small package while looking for the key to the unit; also used to personalize the unit entry.
- Outboard-mounted sliding doors: Mounting the door on the outside of the wall to eliminate the space that a door swing can take also makes it easier to operate, clean and maintain than a pocket door, which is mounted within a wall.
- Hardware: Size and configuration should be carefully chosen to make use easier for those with arthritis or other limitations.
- Memory boxes: Provided adjacent to a resident unit entry to house personal items that are used to aid a resident in recognizing his or her room.
- Plate shelf: A narrow ledge, usually mounted 65-68 inches from the floor, used to display personal items or memorabilia, create variety and help a resident to recognize his or her room from the corridor.

LANDSCAPE DESIGN

LANDSCAPE DESIGN FOR SENIORS

In every community it is desirable to provide settings that stimulate the senses, both inside and outside a building. In continuing care retirement communities and active adult communities, landscaped and natural areas should be developed for walking, contemplation, golf, lawn sports, shuffleboard, gardening activities, fishing and other recreational activities.

Outdoor spaces should resemble their interior counterparts, responding to the site and to the cultural and activity needs of the specific residential setting. A hierarchy of spaces, as one makes the transition from indoors to outdoors, might include the following:

- Indoor-outdoor blend: spaces within the building that have an indoor-outdoor character or porches that extend from the building to provide shelter, shade, security, vistas, and an experience for residents who do not want or are unable to venture from the building. For those with dementia, spaces that feel like rooms are more easily understood.
- Paved program area: areas large enough to accommodate community activities such as a concert, barbecue, etc.
- Meaningful walk: pathways with things of interest, including an area for butterflies, bird feeder, benches for resting, water fountain, etc.
- Landmark destination: an outdoor structure such as a gazebo, which can serve as a small-group activity spot, an enticement to venture further outdoors, or as a landmark for those returning to the building from a walk.
- A nature walk: if site space permits, a natural walking path that allows for greater exercise and a more natural experience.
- Children's play areas: attractive places for grandchildren to play while their parents are visiting.
- Outdoor exercise/therapy: areas, site details and equipment to support appropriate exercise, stretching, and physical therapy.

If residents are frail, cognitively impaired or vulnerable, these outdoor areas must be carefully planned and landscaped. Among the issues to consider when designing these spaces are the following:

- Use of flowering trees, shrubs, and perennials that provide seasonal change to reinforce awareness of life's rhythms and cycles. Features such as bird feeders to attract wildlife will stimulate the senses and provide a focus of interest.
- Accessible outdoor areas for ambulatory residents with Alzheimer's or other forms of dementia. The ability to walk freely has been found to slow the physical deterioration that often comes with the disease, and it also reduces agitation.
- Incorporating outdoor areas into an activity program can be important. Gardening can be a popular activity that reinforces memories and a garden can be designed to provide an outdoor physical therapy area.
- Shade, since older individuals are more vulnerable to skin damage and vision problems caused by too much direct sunlight. A mix of umbrellas, vegetation, and building elements, such as porches and trellises, provides effective means of introducing shade.
- Seating that includes backs and arms near entrances encourages socialization.
- Tables and chairs for picnics or snacking, or just for resting.
- Entrances to gardens and the width of pathways should accommodate walking side-by-side.

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WAYFINDING

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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 persons who are not as agile and are facing a significant change in their lifestyle, it is particularly important that finding their way around their residential or care facility is as effortless as possible. This makes wayfinding an important issue for seniors.

A wayfinding system should go beyond simple signage to become a multi-layered system of spatial cues. Multiple wayfinding cues reinforce a sense of security for residents who might feel intimidated by spaces they cannot easily navigate. Wayfinding is not something pulled from a kit and applied. It is the integration of an intelligent plan that coordinates various architectural and interior design tools including lighting, selection of finishes, artwork, floor coverings, shelves, and accent furniture or objects. It is a total system that must be considered as early as the initial planning and design sessions. If residents feel secure and know they will find their way back home, they will venture out of their living quarters more often, gather, and be more physically active.

The type of flooring is another device used to assist residents' ability to find their way. Color schemes developed around the flooring product may be alternated from floor to floor or area to area. The carpet product used in the public common spaces can have a significantly different appearance from the carpet located in the resident wings. Accent colors, artwork, and carpet design features, such as a border around the circumference of the elevator lobby, are all part of the multilayered system of wayfinding devices.

Lighting design and wall finishes should also be integrated parts of the wayfinding concept. A decorative sconce at each entry not only provides additional light, but also serves to mark the location of each unit. In addition to the sconce, the ceiling design and lighting can create a recognizable event at a cluster of resident entries. Like a change in light, a change in wall finish also signals entry into a new area and becomes another layer of the wayfinding system.

Persons with Alzheimer's benefit from multiple layers or cues that can be accommodated within the wayfinding system as they generally have trouble storing newly acquired information, but find it much easier to elicit memories from their past. Thus, residents in special-care units often have difficulty recognizing their units. One solution to this problem is the installation of a memory box or package shelf outside the door to each unit where residents can place personal objects, such as photographs or keepsakes, to trigger recognition. Alternatively, a device as simple as a hook that let residents hang objects on the door can serve this purpose. Dutch doors are another useful room-recognition tool; they allow residents to see into their room and recognize their belongings prior to entry. Inside the living quarters, the provision of plate shelves, deep windowsills, and furniture brought from home enable residents to personalize their rooms and provide further opportunities for personalization and recognition.

Researchers are still learning which visual cues are most effective in guiding residents with Alzheimer's back to their house or neighborhood. Subtle single-layered cues such as color changes have not worked well. Current research indicates that staff stations, where familiar caregivers are visible, major landmarks (for example a grandfather clock), and cues that engage other senses (such as a sense of smell) are more effective.

A wayfinding system should go beyond simple signage to become a multi-layered system of spatial cues.

Begin with the overall layout of the facility. The layout must be organized in a supportive configuration that responds to function, program, and circulation in a logical progression, guiding residents from space to space. If the basic plan is confused—for example, creating a maze of corridors—wayfinding devices cannot operate effectively.

Visual cues are an essential aspect of wayfinding. For example, interior windows and half-height partitions permit residents to see into adjacent spaces. Integration of feature furniture pieces, such as curio cabinets and artwork, with recognizable objects at decision-making intersections, become cues that help to orient the residents.

CONCLUSION

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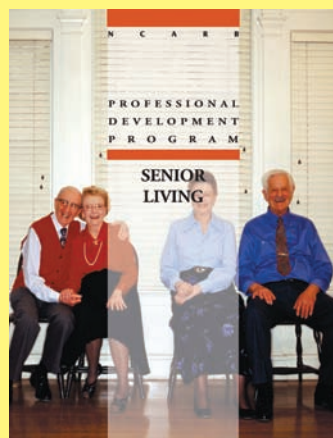
In recent decades, the direct impact of design on our aging population has become more widely recognized by both the general public and design professionals. Prior to this time, the elderly who could no longer live in their own homes had few, if any good alternatives; and most saw a shared room at an “old folks home” as the only option. For the majority, it was a dreaded choice as tens of thousands of families can tell stories of the trauma of having to place mom or dad in an institution. By 1980, there was a growing demand for more attractive options to meet health and supportive service needs within more residential settings. Lifestyle options for retirement communities have adapted to a changing clientele of people who are older with more needs, but expect higher-quality housing and activities than even a decade ago.

Older adults are looking for more options. Today’s 70-year-olds are better educated, generally have more money than their predecessors, and expect to be physically and intellectually stimulated. Baby-boomers, products of postwar consumerism have quality, service, and delivery expectations that do not fit with traditional patterns of health care and aging service delivery. NCARB’s *Senior Living* monograph provides an overview of the major issues involved in planning, design, and development of specialized environments for this new group of aging Americans.

For a more in-depth guide, refer to the NCARB *Senior Living* monograph. *Senior Living* outlines eight major building types and challenges associated with these types of communities. They include: assisted living residencies, dementia/Alzheimer’s care, independent/residential living apartments, continuing care retirement communities, and active adult communities.

This excellent resource also includes chapters dedicated to special equipment and technologies, international challenges, interior issues, energy/environmental challenges, and evolving concepts.

Each chapter includes charts, photographs, and floor plans to complement the ideas and content. *Senior Living* can be ordered from the NCARB web site at www.ncarb.org/publications/pdpmonographs.html.



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