

OLDER PERSONS EXPERIENCING HOMELESSNESS

THEIR PERCEPTIONS AND NEEDS INFLUENCING SUPPORTIVE INTERIOR DESIGN AND ARCHITECTURE

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INTRODUCTION

America's homeless population is growing older. On city streets as well as in food banks, soup kitchens, and shelters, we are witnessing an increase in the numbers of gray-haired, stooped, and frail bodied individuals experiencing homelessness, some navigating their way with the assistance of canes, walkers, or wheelchairs. Federal statistics also confirm the upward trend in the number of older persons facing homelessness. While in 1990 the median age of the U.S. adult homeless population was 35 years old; today, it stands at age 50 (National Health Care for the Homeless Council, 2013).

Each year, the U.S. Department of Housing and Urban Development (HUD) gathers data from communities across the country and produces an Annual Homelessness Assessment Report to Congress (AHAR). Part 1 of the report offers a conservative snapshot of the size and composition of the U.S. homeless population, sheltered and unsheltered, by means of a point-in-time count on a single day in January throughout our nation's communities. Part 2 compiles information on nationwide patterns of shelter utilization, emergency shelters¹ and transitional housing² during a 12-month period. Analysis of the annual HUD point-in time counts for the decade of 2007 to 2017, for example, revealed

that the share of homeless individuals over the age of 50 increased 10 percentage points, rising from 22.9 to 33.8 percent of the total estimated population, outpacing the rise in poverty during the same period (HUD, 2018). The most recent point-in-time count found that among the 367,585 adults experiencing homelessness alone (versus with a family) on a single night in January 2018 slightly more than one in every three was older than 50 (HUD, 2018).

A trend analysis of the AHAR Part 2 reports from 2008 to 2016 by the National Alliance to End Homelessness (NAEH, 2018) highlighted that emergency shelters are increasingly serving a more vulnerable population. The share of the shelter client population that is older, has a disability, and/or come directly from unsheltered locations (i.e. streets, abandoned buildings, cars, tents) has grown substantially in recent years. Sadly, the most recently released AHAR report (HUD, 2018) found no change in this upward trajectory; of the 848,819 homeless individuals using emergency shelters, approximately 33% were 51 and older, 45% had a disability, and 27% entered a shelter having last slept on the street.

Some positive gains in reducing homelessness are occurring, however. We find, for instance, that in 2018 there were 113,000 more permanent supportive housing (PSH) beds nationwide for chronically homeless individuals than in 2010, a 200% increase (HUD, 2018). Spurring many of these gains is a mounting national dialogue that everyone has a fundamental human right to housing that ensures access to a safe, secure, habitable, and affordable home throughout their lives (National Law Center on Homelessness & Poverty, 2011³; Sheffield, 2014). This expanding human rights perspective has contributed to a fundamental shift in our nation's approach to homelessness—from “managing homelessness” to “eliminating homelessness” (Henwood et al., 2015).

Achieving the goal of ending homelessness requires the development of coordinated community response systems, which include diversion prevention and intervention strategies that are targeted toward homeless individuals and families of all ages. Importantly, emergency shelters and transitional housing are, and will continue to be, a crucial part of communities' network of systemic responses to a housing crisis. They provide an immediate place to stay as well as offer the opportunity to connect individuals with an appropriate level of services for their needs. Shelters represent a vital bridge to reconnecting people with stable and secure housing.

The graying of the homeless population, however, is creating daunting challenges for public and

nonprofit agencies. The reality is that many of our nation's shelters are currently ill-prepared for the changing demographics of individuals who find themselves chronically homeless. As these individuals become older and more disabled, shelters' physical facilities, policies and program that were originally designed for a younger male population have become outdated (Grenier et al., 2016). Furthermore, there is also a greater female presence among shelter seekers. The share of women among single adults experiencing sheltered homelessness climbed to about 30% in 2017 (HUD, 2018). One negative outcome of this mismatch is that older men's and women's shelter stays are significantly longer in length than their younger counterparts (HUD, 2012; Grenier et al., 2016).

A movement now exists (e.g. National Alliance to End Homelessness, 2019) to strengthen the implementation and impact of emergency shelter to:

- promote the dignity and respect for every person seeking or needing shelter
- divert people from the homelessness service system when possible
- adopt a housing first or rapid housing approach and create low barrier access to emergency shelter
- equip emergency shelters to serve as a platform for housing access (USICH, 2015; USICH, 2017)

The purpose of this report is to advance the above-identified agenda by serving as a central summary

resource on the design of built environments for older persons experiencing homelessness. Included are commentaries on practical research findings, best practices and related content that can assist professionals operating support organizations, architecture and design practitioners, as well as students and researchers. Key to this report is identifying practices that emergency shelters and transitional housing can implement to meet older adults where they are and provide person-centered care that focuses on personal strengths.

The report is organized into three sections; part 1 provides a profile of older adults who are experiencing homeless, part 2 reviews the physical and psychological characteristics that are important to understand when designing for these individuals, and part 3 provides specific strategies that can be applied to shelter design (or any housing or service environment) intended to support older adults. Throughout the report, we weave in the voices and perspectives of older adults navigating the streets and shelter life. Our hope is the report leads readers to think creatively about ways to transform shelter environments to not only support older adults' "residential comfort" (i.e., a warm place to sleep, meals to eat, social engagement) but also increase their sense of "residential mastery" (i.e., control over one's security, safety, privacy, autonomy) (Golant, 2011).

A PROFILE OF OLDER ADULTS WHO ARE EXPERIENCING HOMELESSNESS

What does older mean in the context of homelessness? Consensus is that age 50 be used to mark the beginning of old age for individuals who are chronically homeless. Using 50 as the benchmark rather than 65, the standard marker of old age, is based on the fact that adults who are homeless tend to prematurely age; they often exhibit physical, cognitive, and mental health characteristics that are more consistent with housed individuals that are ten to fifteen years older than them (Cohen, 1999; Gonyea, Mills-Dick, & Bachman, 2010). Chronic illnesses and geriatric conditions, such as difficulties with activities of daily living (e.g., bathing, dressing), falls, urinary incontinence, and memory loss, which are associated with a greater risk of institutionalization and death, are found to be more prevalent among homeless adults than in housed adults 20 years older (Brown et al., 2016). Older adults that are in stable housing can often adjust their environments to accommodate various chronic illnesses and geriatric conditions, supporting their ability to maintain independence and quality of life. In contrast, older homeless adults living in unsheltered places (i.e., the street, parks, vehicles) or moving frequently (i.e., emergency shelters, temporary stay with family and friends) face considerable obstacles to altering their environment and thus are at much greater risk for poor outcomes from geriatric conditions.

Older individuals who are homeless, sheltered and unsheltered, confront demanding living conditions that worsen their health, including exposure to extreme heat and cold, lack of a restful night of sleep, and a poor diet or the inability to follow a prescribed diet. Additionally, broken, lost, and/or stolen adaptive equipment, such as eyeglasses, dentures, hearing aids, canes and walkers exacerbate daily life challenges. Indeed, the percentage of homeless individuals that are elderly might be larger if not for the fact that persons who experience chronic homelessness do not reach old age as often as the general population. A comparative study of homeless populations' mortality rates in seven cities in North America and Europe found the average life expectancy for individuals who lacked permanent housing was between 42 and 52 years of age, far below each country's average life expectancy (O'Connell, 2005). The vast majority of the U.S. older homeless population is between 50 to 61 years of age; only about 8 percent of homeless adults is 62 and older (HUD, 2018).

Older adults who are homeless are a diverse population, yet they typically follow one of two pathways or trajectories into homelessness. The first pathway is that of an adult with a history of stable housing that experiences homeless for the first time in later life.

These persons' narratives often center on certain "trigger events" or "a series of recent misfortunes" that upended their conventional lives. For instance, Jill (pseudonym), a woman in her fifties currently living in a women's transitional shelter shared the way in which a relatively rapid series of events--family illnesses and deaths coupled with the losses of a family wallpapering business and income—led to homelessness (Gonyea & Melekis, 2017, p. 6).

I've never been homeless before . . . I had been taking care of my mother who had dementia . . . my husband and I moved back into my mother's house . . . and then my husband ended up with cancer. So, at one point, I had two hospital beds in the house, one for my mother and one for my husband and they both died within three and a half weeks of each other . . . then my cat died three weeks after that--- so I had three deaths in six weeks . . . I tried to commit suicide before I came here [the shelter].

The second pathway is characterized by individuals with a history of periods of homelessness in their earlier adulthood who simply "age into" the older homeless adult category. These individuals often speak of the myriad of problems that prevented them from "breaking this cycle" of precarious or unstable housing (National Health Care for the Homeless Council, 2013; Gonyea et al., 2010). Peter (pseudonym), a man now in his 60s who was homeless for more than twenty years and now lives in supportive housing, described a life influenced by addictions. In fact, Peter began a narrative of his life by sharing that when he was twelve his father went to prison for making moonshine, a time when Peter dropped out

of school to work. Throughout the years, Peter held a series of jobs; however, his own addiction often led to periods of unemployment. Even when employed, money often went to drugs first as opposed to housing (Mills-Dick, 2012):

For me it's the drinking, drinking and drugging you know? I know that all the troubles that I've had through the years, alcohol had something to do with it... I had my own place, I had a good job . . . And ah, I had a friend workin' with me and he drinks every morning. . . So one day he offered me, you know, come on, have a drink. And ah I fell right in it and ah . . . I started missing work and [sic] ah' boss kept warning me, you know, you got to come to work. Got to the point where I wasn't able to go to work, all I wanted to do was drink... I lost my job . . . lost my place to live.

The pathways to homelessness in later life are remarkably similar for both genders. Men and women that experience homelessness prior to age 50, for instance, often report having faced negative life experiences in their young- or mid-adult years (e.g., mental health issues, substance use, trauma) and less attainment of typical life course milestones (e.g., educational degrees, marriage, steady employment). Both genders frequently cite eviction as the primary reason for their homelessness. Reasons for evictions are varied but do not always involve problems with personal behaviors. Yet, the narratives of older homeless adults often highlight the complexity of personal, relational, and structural

and societal factors leading to homelessness. For example, women’s eviction stories are typically more complicated than the loss of a physical home. For some, it represents the end of a caregiving relationship—whether informal or formal (paid) caregiving—as well as the loss of meaningful social bonds and connections. In Jill’s narrative, for instance, we hear the deep pain she experienced as her life unraveled with the illnesses and then the deaths of the two people she loved most—her husband and her mother. For many older women, homelessness is associated with poverty emerging from family circumstances such as abuse, violence, illness, and death as well as their concentration in low-paying occupations (Gonyea & Melekis, 2017; Grenier et al., 2016). For example, Eva (pseudonym) shared:

I am currently homeless due to an accident and no work, plus I was also in an abusive toxic relationship. I went back to him, but then I left again. I live in my car. . . Every now and then I go to a shelter to shower, to wash my hair. . . The resources suck, they are always full, and no beds, so this is why women like me sleep in our traveling four-wheel home.

Homeless older men’s narratives often center on the barriers to finding employment and housing due to the challenges such as their declining health, the inability to perform physical labor, ongoing struggles with addictions, a criminal record and/or estrangement from their families (Caton et al., 2005; Grenier et al, 2016). For instance, Lee, a Viet Nam veteran and licensed social worker, decided to return to Boston (a city to which he has strong ties) after an attempted robbery in which his kneecap was broken with a baseball bat in another state. At the time of his return, Lee’s expressed objective was, “I’ll get my knee operation and I’ll get me a job.” However,

with six knee surgeries in the past five years, Lee has been unable to work as he is in significant pain and cannot move his leg without assistance. Furthermore, he has diabetes and high blood pressure and suffers from post-traumatic stress disorder (PTSD). Throughout his health ordeal, Lee lived in a series of local shelters and medical respite facilities; he now resides in an assisted living facility (Mills-Dick, 2012).

While a slight majority of homeless adults are White, African Americans are greatly overrepresented among the numbers of adults who are homeless. African Americans account for 13% of the overall U.S. population, however, they represent almost 40% of single individuals experiencing homelessness nationwide (HUD, 2018). Racial discrimination in housing and employment are obstacles frequently reported by many older homeless adults of color. For example, Janice (pseudonym), a Black woman with a British accent spoke about repeated experiences of being rejected from rental housing due to her race (Gonyea, 2017):

I had housing discrimination, lots of, and it was really, really impacting me. . . And when I address it or bring it up, then they would they would tell me, ‘Oh, you’re being oversensitive. . . I’ve reported ah, some of the agencies or property managers that have been discriminating. So, for example, I see an apartment listed, and I’d phone, and when I show up, they see someone different. Because they said, ‘Oh, you speak so beaut- oh, it’s you.’

Winnie (pseudonym), a Black woman in her fifties staying at an emergency shelter, shared a similar perspective (Gonyea, 2017):

The way I look at it, any black person in any time, because of the, because of the discrimination, can lose their housing. Even if you have a good job and everything. It's just over the centuries, that's the way it's been. So you know, you have to always be very kind of anxious.

Given the complexity of challenges that they face, many older homeless adults join the ranks of the chronically homeless population⁴ (HUD, 2018). The above shared narratives highlight that a sizeable proportion of the older homeless population are coping with issues of trauma, substance use, physical health and mental issues intertwined with poverty. Yet, for a significant portion of older adults, their homelessness is primarily about aging into poverty. Based on the 2017 Supplemental Poverty Measure (SPM), approximately 7.2 million (14.1%) of US adults aged 65 and older were living in poverty; however, this number climbs to 21.4 million (42%) when the 65-plus population that is below 200% of the SPM poverty threshold is included (Cubanski, Koma, Damico, & Neuman, 2018). The reality is that too many older adults are spending too large a proportion of their incomes for basic necessities, leaving little or nothing for an emergency and placing them at high risk of homelessness. Notably, the lack of affordable housing consuming much of their meager resources represents one of the greatest challenges that they face.

The National Low Income Housing Coalition's (NLIHC) 2018 report, *Out of Reach: The High Cost of Housing* underscores the magnitude and scope of this crisis. Its analysis shows a current national shortage of 7.2 million rental homes affordable and available to extremely low

income (ELI) renters, whose income is at or below the U.S. federal poverty guideline or 30% of their area median income (AMI). While metropolitan areas often have larger gaps, it is important to stress that every state, including the District of Columbia, has a housing shortage for ELI renters (NLIHC, 2018). With regard to the older members of this group, almost four out of every 10 ELI renters are heads of households that are 65-plus (24%) and/or have a disability (15%). Additionally, reflecting racial disparities in income, 35% of ELI renters are black and 29% are Hispanic. Sadly, the availability or supply of housing assistance falls far short of needs, and this gap continues to deepen as waiting lists for public housing, privately-owned subsidized complexes, and housing choice vouchers are very long. This means that eligible individuals often have to wait years before they reach the top of the list.

HUMAN CHARACTERISTICS THAT CREATE BUILT ENVIRONMENT CHALLENGES FOR OLDER PERSONS EXPERIENCING HOMELESSNESS

Part 1 of this report demonstrates the experiences of being homeless including the additional losses and anxieties associated with these life stories. This section highlights the physical and psychological characteristics of older adults that can create unique challenges for them as they navigate built environments. In combination, loss, anxiety, and displacement can compound the effects of other mental and physical challenges. Design can plan a significant role in enhancing residential comfort and, possibly more importantly, residential mastery of supportive settings.

Professionals who provide services to individuals who are homeless note that working with older adults is different than working with younger individuals and facilitation is often complicated by older adults' limited capacities to manage the physical and psychological demands of the housing and social service systems (George et al., 2008). Design can be a great facilitator of empowerment, and for older adults experiencing homelessness this empowerment can be critical to moving out of a homeless situation and into stable housing.

An Aging Body and Aging Mind

Aging is a natural biological process that affects every individual in both common and unique ways. Common age-related changes include reductions in vision and hearing, declines in smell and taste sensations, and diminished tactile sensitivity. Muscular strength and stamina also diminish for both men and women after the

age of 40 (Farage et al., 2012; Moody, 2006; Goodpaster et al., 2006). Other changes that may be common but are not considered "normal" age-related declines can include neuro-cognitive decline (dementia) that interferes with function and ability to perform basic activities of daily living (ADLs) (Moody, 2006).

Individuals experience the changes associated with aging at different rates, but in general, adults who experience homelessness demonstrate a more rapid aging process (Gonyea et al., 2010) likely due to heightened levels of environmental stresses experienced for extended periods of time that accelerate cellular decay, and the limited access they have to health care to manage chronic conditions (Moody, 2006). Older adults who experience chronic health conditions are also more prone to poor mental health (e.g. depression, anxiety disorders, and/or post-traumatic stress disorders) and are more likely to have substance abuse issues. Research on older homeless adults report that a significant proportion are struggling with these disabling conditions (Rothwell, Sussman, Grenier, Mott, & Bourgeois-Guerin, 2017; McDonald, Dergal, & Cleghorn, 2007). Older adults experiencing homelessness, especially those that are newly homeless in later life are more likely to be men. This is the opposite for younger homeless populations where there are typically more females (McDonald et al., 2007). Older men are more likely to experience the severity of mental illness and substance abuse (Rothwell et al., 2017) that both contribute to dementia-behaviors. They also

may have more difficulty managing the manifestation of verbal and physical aggression.

Older adults who are experiencing homelessness will require different planning and design considerations for spaces that they need to access in order to receive services. Older adults respond differently to the environment than younger adults and children and they can be “disabled” in unintended ways by simple design features. For example, glare on a shiny floor may be a nuisance for a younger adult who can see well, but for an older adult with vision loss, this glare may create a sense of blindness, or be misconstrued as a wet surface that can result in a fall. The goal of design should be to support the capacity of an individual to act independently and exercise choice. This requires understanding how the total environment may be experienced by the older adult and, therefore, how they may perceive and navigate a setting in certain ways.

In order to understand how to design supportive environments for older homeless individuals, it can be helpful to understand how the body and mind may change as an individual ages. Below, we identify six factors associated with normal age-related changes (National Institutes of Health, 2007) as well as factors frequently related to chronic illness or diseases experienced with greater prevalence in older populations. Since poor physical health in older adults can contribute to homelessness (Bottomley, 2001), these variables should be carefully considered in the context of what an individual may be able to manage. To make these links clear, these factors are then related to specific design strategies that may help mitigate negative functional or behavioral effects. For many design strategies that support both residential comfort and mastery, multiple

physical and psychological factors are likely to apply. Design recommendations provided here can be adopted to a variety shelter and transitional housing settings.



Highly polished surfaces can create reflective glare that creates a difficult visual field for older adults. (HomeFAST: Home falls and accidents screening tools. <https://stopfallsathome.com.au/risks/>)



Musculoskeletal Factors

The major structural system in our bodies are our bones and joints. Over time there is a natural deterioration as connecting tissues begin to break down and we lose some elasticity to our tendons and a decrease in muscle tissue. This type of deterioration can also contribute to common age-related conditions such as osteoporosis and arthritis, which can begin to appear as early at the age of 40. As such, the chances of an older person who is enduring homelessness and adverse living conditions experiencing stiffness and pain in their joints is exceptionally high. This may contribute to difficulty in mobility, slow reflexes, and fear of falling.



Neural Sensorial Factors

Filtering information and interpreting the world around us is possible through what we see, hear, smell, taste, and touch. Aging brings about changes in all of these sensorial processes. Vision is one of the most common changes associated with aging, and perception of color and the ability to detect contrast between values of color also diminish. Even with corrective lenses, the ability of the eye to capture light is reduced as is the sensitivity to depth perception. Hearing also declines by the age of 65 and may be accompanied by tinnitus (internal ringing or roaring in the ear). Sense of smell diminishes as we age as well, especially for men. This can contribute to a lack of detection in unsafe or unsanitary situations.



Integumentary Factors

The skin is the human body's basic protective covering

and consists of multiple layers that are critical to our tactile responses and the regulation of body temperature. As individuals age, the skin's moisture and fatty tissue layers decrease and we see the telltale signs of wrinkles and age-spots. Thinner older skin is also more susceptible to damage and is less responsive to detecting changes in temperatures, which can create dangerous consequences for burns, and/or frost-bite for older persons experiencing homelessness.



Movement and Functional Factors

Related to musculoskeletal issues and sensorial factors, physical movement is impacted by the combination of how the body and mind process information and react to it. As people age, coordination, muscle mass, and reflexes begin to diminish. Coupled with reduction in sight and hearing, response times can be compromised and falls become an increasing risk factor.



Digestive Factors

Internal metabolism changes as the body ages and older adults will commonly experience noticeable changes in digestion, bowel, and bladder functions. It is not uncommon for older adults and especially women to experience challenges with incontinence. These issues can contribute to concerns about hygiene and skin health. For older adults experiencing homelessness, these types of digestive challenges can be compounded by poor nutrition and poor oral health, including problems

with gums and the degeneration or loss of teeth. This in turn can affect food choices.



Memory, Cognition, and Behavioral Factors

Cognitive functions may slow down as a person ages, but memory loss is no longer considered a normal age-related change. It may take a person longer to recall something, but older adults can still be alert and competent as they age if they are not being impaired by dementias, mental illness, drug or alcohol abuse, or by side-effects of prescription medications.

Cognitive challenges are a more common occurrence among the elderly than younger people and dementias can be the result of a variety of neuro-cognitive disorders and diseases including Alzheimer's disease, Parkinson's disease, Dementia with Lewy bodies, and other conditions (which are generally referred to as Alzheimer's disease and related dementias, or ADRD). Some prescription drug interactions especially in combination with other drug or alcohol abuse can also manifest into dementia-like behaviors. Individuals with ADRD typically have memory impairments, specifically short-term memory loss and may repeatedly ask for the same information or rely heavily on memory aids. Most individuals in early stages of ADRD are aware the something is not right and will compensate for their lack of memory by limiting their interactions with others.

Cognitive impairments and dementias are a mental health challenge experienced by a significant number of older homeless adults (Bottomley, 2001). Studies

have shown that the physical environment can have a therapeutic effect on people with dementia, helping them to improve and preserve their well-being, behavior, independence, and functionality (Day & Carreon, 2000; Fleming & Purandare, 2010; Tilly & Reed, 2008). These studies are typically focused on institutional settings (such as long-term care or behavioral health environments) (e.g. Marquardt, Bueter, & Motzek, 2014) but their applications can be translated to the broader design of other spaces elders frequent who may have cognitive loss or other sensory deficits. Specific design features that support cognition are noted in the design strategies section of this report as they apply to the sensory environment, place identity, and wayfinding.

As noted earlier, research on the demographic of older homeless individuals demonstrates two distinct major typologies for older homeless: those who have aged into homeless and those who have just recently experienced homeless at an advanced age (McDonald et al., 2007). Beyond that, however, older homeless are quite heterogeneous in their characteristics; men versus women, younger versus older, veterans versus non-veteran, cultural and ethnic histories, mental and physical health, and duration of homelessness are also important variables in a person's perception of life on the street and their pathway to transitioning to permanent housing (McDonald et al., 2007). These groups of older homeless adults are also like to have different behavioral patterns that should be considered in the design of spaces (Rothwell et al., 2017). Understanding aspects such as cultural norms (ethnic group traditions or customs) and general biographic profiles (e.g. veterans, ex-offenders) can help establish important programmatic criteria for a shelter or other project type.

Collectively, however, many of the patterns of biological aging can be considered when establishing design strategies to serve older populations. These factors are specifically noted in the following design strategies section so design professionals can develop stronger functional programs that support these users through the features of a space.



Older disabled adults, such as veterans often cannot find work and are one group of adults who find themselves experiencing homelessness in later life. Image retrieved from Psychological Benefits Society. Why we can't forget older homeless veterans on Veteran's Day. <https://psychologybenefits.org/2014/11/10/why-we-cant-forget-older-homeless-veterans-on-veterans-day/>

DESIGN STRATEGIES: LINKING AGING FACTORS FOR INDIVIDUALS EXPERIENCING HOMELESSNESS TO THE BUILT ENVIRONMENT

The following section links the physical and psychological dimensions of aging to the realm of design strategies for older adults who may find themselves navigating shelter environments. Some of the strategies are broad conceptual planning considerations, but where possible, specific examples of design details that demonstrate applications are provided. We start first with the role of the sensory environment as it is central to many of the interactions that individuals have with each other and with their settings. Next, we consider the features of place as they support identity. This is central to creating a sense of residential comfort (Golant, 2011). Other practical design applications are addressed in the sections focused on engaging with social support services, wayfinding, and, access, mobility, and reach. Finally, other general design considerations that support holistic wellbeing are presented. **Actionable ideas are shown in bold font.**

It is important to note that policies and operational practices of a setting are integral to creating a comprehensively supportive environment. This is especially true for older adults and individuals with disabilities. Rules that require specific behaviors and actions can create both real and perceived barriers and challenges for people who have diminished capacities.

Service providers should consider the physical and mental stamina associated with natural aging characteristics outlined in Part 2 in combination with the design strategies outlined in Part 3. Designers and architects assisting with construction and remodeling projects should inquire about facilities' operational practices and rules as they assess how to incorporate additional supports that may mitigate their negative impact on older adults and/ or those with mental or physical disabilities.

The Importance of the Sensory Environment in Supporting Function and Behavior

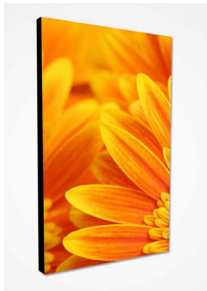


The sensory changes noted above are common for all older adults and are critical physiological processes that provide individuals with information about their surroundings. For older adults with cognitive decline, being able to properly process the sensory environment and interact with positive sensory stimulation through visual, auditory, tactile, and olfactory stimulation reduces agitation and other unwanted behaviors (Marquardt et al., 2014).

Acoustics: Open spaces with hard surfaces create acoustically challenging environments for adults with even moderate hearing loss (which is quite common for

any adult over the age of 60). For homeless older adults the challenge of not being able to isolate sounds that may pose a threat may create additional anxieties that are not likely experienced at the same level by younger adults who have effective hearing. For older adults with cognitive problems these situations can create traumatic experiences and potentially result in behavioral outbursts if they cannot handle the sensory overload. What might simply be “uncomfortable” or annoying to an adult or child who can cope with the noisy environment may be disabling to an older adult with hearing loss and/or cognitive loss. There is strong evidence showing a relationship between high noise levels and unwanted behaviors, while pleasant sounds have been found to be positively stimulating. A comfortable room climate may further contribute to improved behaviors, social engagement, and well-being (Marquardt et al., 2014).

Acoustical panels can be an effective way to control unwanted reverberations and absorb excess sound ways in an open space.



Example of a decorative acoustical panel by Audimate

Some companies also offer acoustical panels with decorative options at reasonable prices. This creates the option to provide a positive visual and auditory environment with a single product.

The Visual Environment: Studies have shown that older adults perform better on ADLs and have strong fine motor skill functions in settings that

apply a combination of increased light intensity and enhanced visual contrast. This can be accomplished through a combination of design decisions including the location of natural light sources, materials, color choices, and lighting design.

Lighting Design: Providing sufficient lighting and avoiding glare should be one of the key design efforts in environments for older people. In addition to increasing function and fine motor skills, adequate general lighting may also lead to decreased disruptive behaviors for individual with cognitive challenges (Marquardt et al., 2014; Farage et al., 2012). **Minimum recommended foot-candles (or lux) for any area where a senior would be expected to perform a basic ADL should be 30 (or 300 lux)** (ANSI/IES, n.d.; FGI, 2014).


High intensity down lighting may be unsuitable in areas where people need to read materials or complete forms because the position of the overhead down lighting may create difficult shadows on reading materials. Task lighting that can be controlled may be more supportive. **Task lighting should provide a minimum of 50 foot-candles (500 lux)** (ANSI/IES, n.d.; FGI, 2014).

Fenestration: Placement of windows and other glazed openings in a direct path of travel such as at the end of hallways can create a difficult visual environment that may be detrimental to safe navigation, especially if flooring materials have a shiny or glossy surface that reflects glare. **Diffusing direct light through window treatments can be an effective means of mitigating problems. Locating such openings to the side of the path of travel may be a better solution** (National Institute of Building Sciences, 2015).

Material Choices: **Flooring materials should be selected that do not require waxing or polishing as part of regular maintenance.** Other surface attributes that affect visibility and safety of elderly and low-vision individuals are sheen or gloss, texture, and pattern (ANSI/

IES, n.d.). Vertical surfaces that are reflective can also be confusing to those with low vision, and individuals with cognitive challenges that create difficulty with depth perception. **Care should be taken to not extend full reflective surfaces (mirrors or glazing) to the floor plane as these can be misinterpreted as a doorway or passage way** (Design for Sight, n.d.).


Color: Color is more than aesthetics – it creates stronger opportunities for visual acuity and depth perception. By strategically applying value contrast, an older adult is aided in perceiving their environment and make sense of it more rapidly. **All stairs should be designed with handrails and nosing that clearly contrast in color and value with treads and risers. A minimum value different of 30 percentage points is recommended between changes in surfaces or levels** (ANSI/IES, n.d.). This helps to reduce safety hazards (Design for Sight, n.d.).

The Thermal and Tactile Environment: Older adults  are significantly impacted by the regional geography and climate of the area in which they find themselves homeless (McDonald et al., 2007). In extreme conditions of cold or heat, older bodies are impacted by reduced nerve ending function and may experience less heat retention, and they are less able to detect high temperatures before damage is experienced (Farage et al., 2012, p. 20). **Caution should be taken when locating heating elements that are intended to provide ambient warmth. Also, scald-guards should be installed on faucets and shower heads to prevent unintentional burns.**

Design solutions for shelters must also be contextual

and respond appropriately to climate and other factors that may have different impacts on older adults (Grenier et al., 2016). For example, access to bathing facilities located in an outdoor area in warmer regions may need to consider how exposure to the elements may affect an older adult and their skin differently than a younger individual.

Materials should be durable, cleanable, and obviously economic in their affordability, but it is impactful if they have properties that create an aesthetic (visually and tactilely) that reminds people who use the space that they have value. Sterile looking and feeling surfaces set a cold tone of a “warehouse” effect and can psychologically reinforce the perception that their lives have been diminished to a level of little worth. Beyond the psychological value, **tactile or textural surfaces may also improve an individual’s ability to grip and hold onto an object, reducing the incidents of dropping items or falling.**

Place and Identity:  **The overall approach to the design of a place, its scale, its aesthetic, its contents and the artifacts that are contained within create meaning and reflect the nature of how users within that space are perceived and valued.** The manner in which place is interpreted can also contribute to behavioral responses. Older adults have life histories that are tethered to memories that they have about the environments they have occupied throughout their life course. **Spaces that become central to their lives contribute to the construction of their own identities** (Gonyea & Melekis, 2017). The design of shelters can play a positive role in restoring a sense of self to adults who are in crisis by embodying

design attributes and characteristics that are **familiar and meaningful to users**. These attributes should be culturally and contextually considered based on regional situations. For example, the simple use of colors and materials that are regionally appropriate will be more readily associated with familiar settings. Designing entrances and social areas with attention to a residential scale is also important. Furniture choices should be durable, but have residential characteristics. Bedding that has pattern and color creates a visual warmth that can be more reminiscent of home, conveying a sense of being valued.

Engagement with Social Services and Spatial Considerations



Strength of physiological and psychological coping mechanisms create different environmental responses to settings for older adults. Comorbidities also play a critical factor for older homeless adults in their ability to manage both their physical and social environments (McDonald et al., 2007; Marquardt et al., 2014). Due to typical declines

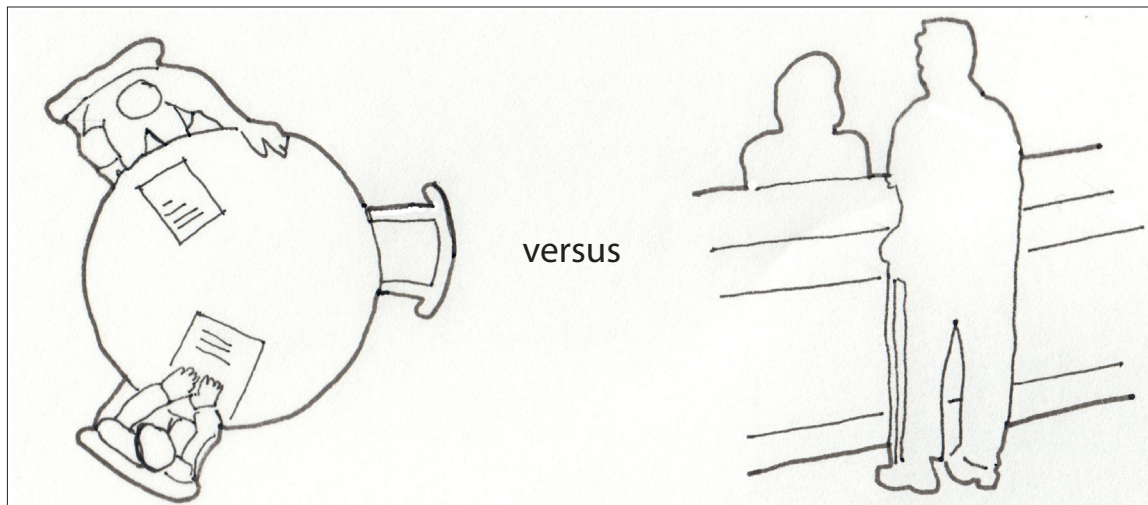


in vision, hearing, and tactile dexterity, the personal space bubble, or sense of personal territorial boundary of an older adult often shrinks as they need to be closer to the source of the information. Older adults experiencing homelessness who are fearful of being victimized, however, may be more likely to keep a larger spatial referent between themselves and anything they perceive as a potential threat due to reduced mobility and diminished reaction time. This creates a constant tension for some adults who may not be able to fully perceive the

environment and environmental cues around them. For example, poor vision may reduce their ability to detect the total size of a room and the locations of exits. Poor hearing may reduce their ability to understand announcements or conversations in large rooms with hard surfaces. Problems with memory can create anxiety in remembering placement of items that are not visible.

As noted in Part 1 of this report, emergency shelters and transitional housing are, and will continue to be, a crucial part of communities' network of systemic responses to a housing crisis. One of the roles of shelter design should be to connect homeless individuals to service providers who can assist them in transitioning to more stable housing options. **These environments must provide the necessary affordances for clients to perceive that the environment is both physically accessible as well as familiar and easily understood by the individual.** This can also include adapting settings so older adults can hear and see information better, and therefore be more empowered to make choices that support their personal goals.

The process of receiving services may also require adaptation in the physical environment and the features where those services are provided. For example, services that require highly organized layouts and patterns of circulation that influence the interactions of staff and clients, such as countertops that create a queue line or separations between the client and the provider may be perceived to be stressful or burdensome for an older adult with poor stamina and/or poor mental coping skills needed to



Furniture should be used strategically to facilitate conversations with older adults. Countertops can create unintended barriers, require that individuals stand in line, and can rush or constrain discussions. Round tables (for no more than 3-4 individuals) promote comfort and an more individualized approach to discussions.

wait patiently in a line. They may feel rushed to absorb information and/or reluctant to reveal confusion with others standing close by.

Assistance that is more individualized is perceived as more accessible by some older adults (McDonald et al., 2007 as cited in Rothwell, et al., 2017). **Therefore, shelters should have spaces that allow staff to work alongside clients in a manner that is approachable, accessible, and attentive to the patterns of use that are likely to be different than their younger homeless counterparts** (McDonald et al., 2007).

An older adult who suffers from vision or hearing loss will likely need to get closer to others in order to have an effective social interaction. If, however, cognitive challenges or mental illness create a sense of fear for older adults, they are likely to want a larger personal space boundary in order to maintain their flight distances against perceived threats. In densely populated situations, older adults who are experiencing cognitive challenges are more likely

to become agitated and demonstrate aggressive behaviors (Marquardt et al., 2014). These negative behaviors may also contribute to their inability to form trusting relationships with people who can assist them (Gonyea et al., 2010, p. 580).

Shelter workers and administrators are pivotal resources for many older adults new to homelessness as they are in a position to form relational connections that could support successful linkages to other required services (Rothwell et al., 2017; Gonyea & Melekis, 2017) For example, shelter workers may facilitate connections to gerontological services such as case management and social and recreational activities to create a stronger support network (Gonyea et al., 2010). This could be done by inviting service providers into the shelter to meet with older adults experiencing homelessness. **Shelter operators need to carefully consider how shelter spaces can be used to provide opportunities where clients can both formally and informally engage with other critical community service**

providers and professionals.

Spaces need to be flexible in their arrangement to provide opportunities for staff and clients to sit privately and discuss needs in a side-by-side configuration. Perceiving that services are (psychologically) accessible may increase their use, and, as a positive consequence reduce behaviors such as avoidance and withdrawal, or defensiveness and aggression, which prevent individuals from obtaining useful information about available services (Rothwell, et al., 2017).

Multi-layered design features/the interconnectedness of the organizational, operational, and environmental features of a shelter and its programming are critical in providing a comprehensively accessible environment for older adults. Services may be available, but if the setting creates real or perceived barriers, older adults (more than their younger counterparts) may remain homeless longer than they might otherwise.

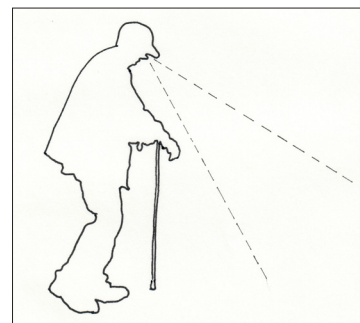
Wayfinding



Multiple studies in skilled care settings for elders with cognitive challenges have demonstrated that scale and building layout are key factors in helping older adults with sensory deficits navigate their environment, reduce agitation and negative behaviors, and support functional abilities (Marquardt et al., 2014; Chaudhury et al., 2016). **Design approaches should consider multiple cueing strategies that are responsive to the diverse wayfinding approaches that elders may use such as**

distinguishable landmarks, effective contrasts in color, and text-based orientation for signage. Direct visual access to relevant places, the integration of reference points, and the implementation of several zones with unique character have been identified as helpful to residents' wayfinding abilities especially when experiencing memory problems.

Signage: When planning signage, **ADA guidelines provide excellent standards for text size, font choices, and contrast requirements.** It is important to recognize that older adults with cognitive impairments have poorer sign comprehension and have trouble with wayfinding signs that use icons only, whereas wayfinding signs with text and icon seem to be better understood, (Scialfa et al., 2008). It is also important to recognize that many older adults with muscular-skeletal disorders (or discomforts) are also likely to slump or walk slightly hunched over. Information that is located above the 60" ADAAG height is likely to be missed. This can be especially critical for exit signage. **Locating supplemental directional signage at the baseboard level can be helpful.**



The viewing angle for older adults may be slightly lower due to changes in posture or use of mobility devices.

Circulation: It is important to also consider the viewing angle of an older adult when locating furnishings or other features at the floor level or along a circulation route. Individual who have muscular-skeletal injuries or limitations may not be able to rotate their head and neck fully and therefore they may not see protruding items below 24". **Walkways should be designed so they do not overlap with storage areas that may result in encroachment of boxes or other furnishings that could lead to falls.**

Where's the bathroom? Locating the bathrooms within easy access is not inconsequential for an older adult. Waking up in a strange place in the middle of the night needing to relieve oneself can be anxiety inducing, especially for an adult with bowel or bladder limitations or conditions. **The spatial consideration of sleeping areas to bathroom areas should account for supporting wayfinding cues, good lighting to aid visual navigation and a sense of security in balance and mobility.**

Mobility, Access, and Reach



Older adults are more prone to muscular skeletal decline that can limit their mobility and range of motion. Chronic diseases and



conditions such as osteoporosis and arthritis can also cause pain and limit an individual's ability to move quickly, keep their balance, or grip items securely. The first consideration for

designing for older adults is **to have a floor surface that is level and free of tripping hazards such as loose rugs or clutter. Tile carpeting can be a good choice because of its contribution to controlling sound and reducing**

glare (see also Sensory Environment Factors), but it should be dense with limited padding to support gait and balance.

Individuals experiencing homelessness often need a place to store their belonging when they need to meet with counselors or service providers, or when they are resting. They want to know that their possessions are secure and yet easily retrievable. When designing storage spaces, limits in range of motion and upper body strength should be taken into consideration. Ergonomic standards for typical adults often do not work as well for older adults with chronic muscular-skeletal conditions that cause pain and or stiffness (Farage et al., 2012, p. 20). Bending and stooping is often difficult as well. **Cabinet or shelving-style storage options for older adults should be placed approximately 24" – 60" above the finished floor for maximum use and function.**



Storage options for older adults should take into consideration the difficulty they may have with bending and stooping as well as difficulties with overhead reach.

Depth of cabinets and shelving should also be carefully considered to minimize the total length that an individual has to reach in to retrieve possessions.

Using lightweight plastic crates can be an effective way to allow for depth with a pull handle at the front for grip and reach.

If locker or closet-type storage is planned, consider using rolling carts with bins to support older adults who have strength limitations to reduce excess bending, stooping, and lifting. Adequate lighting should also be considered in closet/locker type storage options so individuals with low vision can see easily.

Getting up and down

Sleeping Spaces: Bed heights should be considered for ease in sitting on the bed. Older adults are likely to have difficulty accessing the top bunk. Beds that are lower than 18 – 19” are also difficult for an older adult with mobility challenges to get out of easily.



Managing the upper bed of a bunk bed can be dangerous for an older adult with any type of mobility limitation.

Seating: Getting in and out of seating can be a challenge for older adults. They require a firm seat that doesn't create harsh pressure points which can cut off circulation behind their legs. They also rely on sturdy furniture with arms to assist them in rising. **Chairs that have an integrated arm-to-front leg design are more stable and durable for exerting the downward and slightly outward pressure that is exerted when an elder uses the arms to push and lift himself or herself up.**



Arms on chairs provide support for sitting down and getting up. Arms should be integrated with the front leg for maximum stability. This example of a chair by Allcare Seating demonstrates an integral arm-to-front leg design with a steel-frame chair construction and durable, yet touchable finish and arm rest extensions that supports grip.

Additional Considerations

General Mobility Support: Fear of falling is a major reason that older adults limit their engagement in activities and tasks necessary to remain independent (Scheinoltz et al., 2006). **Grab bars and lean rails in circulation areas can be a helpful asset to older adults with mobility impairments or general stamina limitations. In shower areas, seats with grab bars can assist an individual with rising or gripping for stability.**

A place for the pet: Many individuals experiencing homelessness have an animal companion living with them on the street or may have transitioned from home to a shelter with an animal companion. A pet may be a critical component of an older person's psychological support system, especially as they are likely to be more isolated and less likely to congregate on the streets or with other people experiencing homelessness (McDonald et al., 2007, p. 24; Hay, 2016; Howe & Easterbrook, 2018). If a shelter prohibits animals, then the overall accessibility of services is immediately diminished. **Providing options for animal care may be a valuable resource to help an adult access other services that will allow them to transition to permanent housing more successfully.** Individuals, such as veterans, who have service animals, are legally entitled to bring their service animal with them and have access to the animal whenever needed. Approaches can include both policy options as well as spatial considerations. Kennels that provide safe containment of animals (typical of animal shelters) are a potential solution as long as individuals feel like they can access their pet with limited restrictions. Windows into kennel areas should be a priority to provide rapid visual access.

Designing Universally Helps Everyone: The design strategies noted here are not only supportive of older adults but can also be helpful for any individual regardless of age. Many individuals experiencing homelessness will suffer from physical limitation, even if just temporarily. Mental health challenges are common among all Americans, but are experienced at higher rates for individuals who are homeless (National Alliance on Mental Health, 2019). Any physical or mental limitation

can interfere with daily life activities such as bathing, eating, reading, and/or writing. Design should empower people to achieve their full potential even when they are at their weakest moment. Approaching any design problem with attention to inclusivity will result in stronger outcomes (See <http://www.universaldesign.com/> for more information on Universal Design).

SUMMARY

Aging on the streets brings different types of hardships. Older adults experience cumulative effects of chronic health conditions, injuries, and general stresses in ways that make coping with their environments more difficult. Transitioning from a state of homeless to permanent housing requires that individuals be able to apply the necessary physical and mental resources. The first step can be a supportive setting that helps an individual regain a sense of normalcy and command over the basic aspects of life. Shelter design can help, and age-friendly policies coupled with design can truly facilitate success by mitigating or alleviating difficulties and supporting dignity and autonomy.

The built environment suggestions and strategies provided in this report extend beyond emergency or overnight shelters and are also potentially applicable to a variety of settings including day centers, transitional housing, and/or permanent housing. Similarly, these points may support older adults and also those with chronic illness and disability. The needs are great. With the growing numbers of adults who are experiencing homelessness, it is crucial that we address the lack of affordable, safe, and accessible housing immediately.

The reasons why someone experiences homelessness are multi-dimensional, and being without a residence is just one factor a larger variety of problems (Friedman, 1994). Shifting attention to the structural factors that contribute to an individual losing their home will also broaden the impact communities can have on long-term solutions for housing their citizens. This requires

a holistic approach to serving individuals and their needs in specific ways. A well-designed shelter setting can be an important first step in transitioning back toward permanent stable housing. Older adults build connections with places and people through meaningful interactions. These exchanges can facilitate important actions needed to accomplish the steps necessary to navigate complicated housing and social service systems. The role of the built environment in this process cannot be underestimated, but good design takes planning and intention. We encourage shelter operators, designers, architects, and policy makers to consider how these ideas can be a part of intentional design for shelters (and other supportive housing) in their communities.

Transitioning from a state of homeless to permanent housing requires that individuals be able to apply necessary physical and mental resources. The first step can be a supportive setting that helps an individual regain a sense of normalcy and command over the basic aspects of life. Design can help, and policies coupled with design can facilitate success.

FOOTNOTES

1 HUD defines emergency shelter as “any facility, the primary purpose of which is to provide temporary or transitional shelter for the homes in general for a specific population of the homeless.

2 HUD’s definition of transitional housing is “a project that is designed to provide housing and appropriate supportive services to homeless persons to facilitate movement to independent living. The housing is short-term; typically less than 24 months. In addition to providing safe housing for those in need, other services are available to help participants become self-sufficient.”

3 The right to housing is guaranteed under numerous United Nations documents including the Universal Declaration of Human Rights (UDHR) and the International Covenant on Economic, Social and Cultural Rights (ICESCR).

4 HUD defines a chronically homeless person as “an individual with a disability who has been continuously homeless for one year or more or has experienced at least four episodes of homelessness in the last three years where the combined length of time homeless in these occasions is at least 12 months.” (HUD, 2018, p.2)

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Kansas State University is a comprehensive, research, land-grant institution with local, regional, national and global outreach. The K-State Center on Aging located in the College of Health and Human Sciences is a multi-disciplinary unit on the KSU campus focused on instruction, research and outreach addressing quality of life for aging populations.

Judith Gonyea is xxxxxxxxxxxxxxxxxxxx.

Kelly Melekis is xxxxxxxxxxxxxxxxxxxx.



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