



SUSAN RODIEK

Designing Gardens to Attract Activity

A primer for elder care communities

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Virtually everyone agrees that getting outside is important and has both physical and mental health benefits. We all enjoy feeling the sun on our face, a light breeze that brings the scents of flowers, and the lyrical sound of birds as they sing to each other. Senior living communities (including independent, assisted, nursing home and memory care) often spend thousands of dollars creating “lovely” outdoor spaces, and then are disappointed when they seem to be used infrequently. The reasons for underutilization are myriad and relate to design, maintenance, operational issues and overall culture of the organization, all of which will be explored in this white paper. Spending time outdoors is also one of the safest places to be during this era of the Covid-19 pandemic. There is clear evidence that people are at lower risk of infection when spending time outdoors, practicing social distancing and wearing masks, than when following the same precautions indoors. The movement of fresh air dramatically dissipates the density of the number of particles, reducing the risk of infection.

The first section of the paper highlights the research about why it is so important to spend time outdoors and what some of the demonstrated benefits are. This is meant to further convince administrators, board members, nurses, resident assistants, therapists, family members, residents and others that designing spaces and supporting systems that help residents get outside on a regular basis is an important activity, one that should be part of every care plan and daily routine.

The second section of the paper focuses on how to design outdoor spaces that people actually want to spend time in. This includes

access to outside spaces, basic design parameters such as level paths, and a particular focus on elements that are engaging and bring pleasure. Some of the examples reflect whole garden/courtyard installations, while others are single elements that can be brought into existing spaces relatively easily and with minimal expense. Gardens/courtyards can be wonderful opportunities for larger community engagement, whether through involvement of master gardeners, collaborating with a local garden center, getting boy and girl scout troops to help with installation, or fundraising. One story shared with me as I was

writing this was how one care community, raising funds for a new courtyard, put up a display of what the new garden would eventually look like. As a family member walked by, he turned to his wife and asked, how would you like that garden as a birthday gift? And the money was raised. These angel investors do not come along often, but this example shows that being creative about how to ask for funds (try a GoFundMe campaign) can reap rewards.

Resources for getting started are provided in the third section of this paper. A first step is often to assess an existing courtyard space that might be underutilized. The Senior's Outdoor Survey (SOS) tool is a comprehensive tool developed by one of the leading researchers in outdoor environments in senior residential settings, Dr. Susan Rodiek. Key elements of the tool and lessons learned from its use in a variety of studies are provided, as is a link to freely access it from the web.

PART 1:

Health Benefits of Spending Time Outdoors

There is a substantial body of evidence about the health benefits of spending time outdoors. Across many different types of settings and groups of people, there is consistent and strong evidence that having access to nature, both being outside and simply viewing it, is associated with positive physiological, emotional and behavioral outcomes. The focus of this brief summary is on the benefits of actually spending time outdoors in nature, primarily for older adults. This section is not meant to be a comprehensive review of all available literature, but rather highlights the most important benefits, and provides references and resources for further reading.

① Reduction in depression

Depression is very common in individuals living in shared residential settings, which can have debilitating effects. Several studies have demonstrated that people in general, and older adults in particular, who go outside regularly exhibit less depression. In one study, older adults participated in a 12 week/ 24 session (2x a week) outdoor horticultural program that included both passive and active gardening activities: results showed depression was significantly reduced and remained lower three months after the program ended [1]. Another study which included nursing home residents both with and without depression found that the positive impacts of spending time in the garden—improved mood, quality of sleep and ability to concentrate—were most pronounced for those individuals who had depression at the start of the study [2].

Beyond impacting clinical depression, overall mood and self-rated health are reported as being better when people spend time outdoors [3]. A study in England with residents with mid to late stage dementia found that caregivers rated the residents' mood as significantly better after spending time outside [4]. Further, they found marked improvements in mood were seen with as little as 20 minutes time outside, and further improvements seen through 80-90 minutes outside, but no further improvement in mood was seen after 90 minutes spent outside at one time.

② Falls with injury

Exposure to sunlight (UVB) produces vitamin D within the body, which is essential for stronger bones. While dietary supplements are available, they can cause interactions with other medications that are commonly taken by older adults (antacids, digoxin, diuretics,

heparin) [5]. Spending time outdoors is a natural way to get the body to produce vitamin D. A study in Canada examined metabolic vitamin D in the blood of residents of a long-term care community, and found significant differences between samples taken in September (at the end of summertime when people had been outdoors more) and in March (when people had been indoors more over the winter) [6]. A main benefit of vitamin D is that it strengthens bones and reduces the risk of significant injury when a resident falls. Having an arm exposed to sunlight for as little as 10 to 30 minutes three times per week is enough to maintain a healthy level of vitamin D in light-skinned individuals, while people with darker skins may need 30 minutes to three hours exposure for similar absorption benefit. UVB rays do not penetrate through windows, so sitting in a sunny window does not impact vitamin D levels. It is worth nothing that low levels of vitamin D are also associated with depression.

③ Expressions of Distress

While some consider expressions of distress—what we used to refer to as agitation—as an inevitable component of dementia, there is growing evidence that it is highly situationally-based. That is, when people living with dementia do not understand what is going on around them, or are overwhelmed with too much stimulation, or they don't understand what a caregiver is trying to do “to” them, they respond in ways that are labeled as aggressive, non-compliant, or resistive. There have been several studies that clearly show that when individuals living with dementia have the opportunity to go

outdoors, especially on a regular basis, these expressions of distress are significantly reduced [7, 8]. Residents who used the outdoor areas more often demonstrated fewer episodes of expressed distress [9], and residents who repeatedly tried to leave the living area did so less frequently when they were able to go outside on their own and walk [10, 11]. Another study found that when exit doors to the courtyard were secured, over the course of two weeks 1531 active (physical) and verbal expressions of distress were recorded, compared to 418 expressions over two weeks when the doors to the courtyard were unlocked [12]. Finally, a study found that not only did expressions of distress reduce after residents had regular access to a garden but use of PRN medications to control distress were also reduced [13].

④ Sleep

Residents in long term care settings often have very disrupted sleep patterns, sleeping through much of the day and staying awake at night. It has been hypothesized that environmental (lights in hallways, noise from staff) and operational factors (frequent staff checks) cause poor sleep patterns at night, leading people to be sleepy during the day. However, it is also well established that exposure to bright light during the day is essential to keep circadian rhythms on a normal cycle and that long-term care residents, especially nursing home residents, have woefully low exposure to the bright light needed to maintain a normal circadian rhythm. A recent literature review of studies of biopsychosocial (also known as nonpharmacological) interventions to improve sleep in

residents in long term care settings found that increased daylight exposure was one of the three most promising positive interventions [14]. While some studies are conducted with “bright light” therapy, others involve taking people outside. As little as 30 minutes of late morning exposure is needed to help maintain proper sleep cycles.

5 Improved cognition

Evidence of the cognitive benefits of nature is strong and crosses the lifespan, from better cognitive development in children when there is green space around schools to doing better on complex tasks after being exposed to nature versus an urban environment [15]. While there is less research on the impact of spending time outdoors on cognition and older adults, there is one study that suggests that regular outdoor gardening is associated with less cognitive decline and a reduction in the incidence of dementia [16].

6 Stress Reduction

Stress is felt emotionally but is also expressed through a number of different physiologic measures such as blood pressure and cortisol levels. Again there are many studies that show that exposure to nature reduces physiologic indicators of stress, with effects showing after as little as five minutes exposure [17-21]. One study compared the restorative impacts of gardening versus reading indoors after completing a stressful activity, and found significantly greater reduction in physiological stress indicators after gardening over reading [22]. There are a small number of studies that show time spent outdoors reduces staff

stress [23]. These studies also indicate that the reduced autonomic arousal levels lead to an improved affective state, and because it is automatic (physiologic vs cognitive) the benefits accrue even to people living with end stage dementia [24].

PART 2:

Design Considerations

The first section described some of the research evidence of the benefits of spending time outdoors on a variety of positive indicators. While the details may be new to some readers, the overall concept that outdoor, natural environments are restorative and healthy is likely not new to anyone. “However, in spite of widespread agreement on the therapeutic benefits of spending time outdoors, the outdoor areas in existing residential facilities are commonly reported to be underutilized” [25]. One study found that of nursing home residents who were able to get outside, only 22% did so on a daily basis (weather permitting) and 32% went outside once a month; the rest (46%) went out even less often [26]. There are a number of reasons why, ranging from poor access to outside spaces, lack of protection from sun, insufficient flexible seating, little of interest for either active or passive enjoyment, and policies that limit access due (largely) to safety concerns. This section addresses both common barriers that make it more difficult for people to get outside, and design elements that serve to enhance the experience of spending time outdoors. It is the combination of lack of barriers and specific attractive features that will help transform your outdoor spaces from lonely to lively. As the focus of this paper is on outdoor areas that are meant to be used, doors that lead to utility or support areas that are not resident focused are not addressed in this paper.

Connections to the outside

Before people will make the effort to spend time outdoors, they need to know it is there and that it is accessible. This should not be taken for granted: in one large scale study of 131 living areas (what used to be referred to as units) in 40 nursing homes, more than half (56%) of the living areas had no access outside; of those living areas with access to outside spaces, less than half (44%) had direct

access from the living area [26]. This means people had to leave their living area and go somewhere else to be able to get outside, which for some older people, particularly those with limited stamina, can take too much effort. In some existing buildings, these barriers can be difficult or impossible to address. If the connections to the outside spaces are limited, consider involving residents in creating a weekly display about what’s blooming this

week [27]. It is easy for a small committee of residents to take a few pictures, get them printed in 8.5" x 11" format and post them somewhere prominent. This will not only engage these residents but remind others to think about going outside to see for themselves what's blooming.

Consider if new doors to outside areas can be added that are closer to where the residents spend time—in their living areas/household or along major paths they routinely travel. Maximize views outside and if possible, add seating inside so people can sit and look out, before deciding to venture out. One care community put a bin of sunglasses on the wall adjacent to doors, so people who hadn't remembered to bring their own could use those easily. Another put sun hats on pegs near the door to outside. Another important feature is having restrooms close to the entrance to the outside area. Not being certain one can get to a bathroom in time is a major psychological barrier to using outdoor spaces.



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Once people can easily see attractive areas outside, the next common barrier is moving from inside to outside. From confusing signage to difficult-to-use doors to unlevel thresholds, there can be a number of challenging conditions.

The first condition is that the doors must be unlocked, which can be a concern under two conditions. One is if the area around the care community is a high crime area, so locking doors is to keep uninvited individuals out of the care community. The other is in living areas that are dedicated to people living with cognitive changes. The ideal is for any living area for individuals with cognitive changes to have direct and relatively (except maybe at night or in inclement weather) unrestricted access to a courtyard with a secure perimeter to allow and encourage freedom of movement. It is often staff who decide, in an abundance of caution, that being able to go outside on their own is too unsafe. If the courtyard is indeed unsafe (e.g., unlevel walking paths), get it fixed. If the courtyard design is safe, then use the information in Part 1 of this document to explain to staff why it is so important that people get outside on a regular, almost daily basis, and consider changing the formal or informal policy about not letting people go outside when they want to.

Another common barrier is the presence of signs that clearly indicate "This is not an exit" (usually required by the local Fire Marshall) used on doors that open into a courtyard which does not allow for evacuation. Ask whether the sign can read "Not an Emergency Exit" and how small and inconspicuous the sign can be. The same goes for signs that indicate that a locked door will automatically



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unlock in 15/30 seconds. If the verbiage is not written into the codes, and this is in a memory care area, make the language more complex so it is less of an enticement for residents to press the door handle. Then there are often other confusing signs about alarms or equipment that make it hard to determine if it is acceptable to go through a doorway. There may be doors where care community staff (or regulators) feel these signs are necessary, but the goal is to make sure there is easy access for residents to get outside. Try to have at least one door that actually invites residents to go outside, whenever they want, by not having signs that send mixed messages.



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A difficult to open door can be as much of a barrier as a locked one for many residents

Many doors to the outside do not open easily; they are heavy, or the seals are so tight to keep air out, that they are hard to open. The ideal solution is a door with an automatic opener, that stays open long enough for 1-2 people to move through the threshold and get outside easily, without the door closing on them. A difficult to open door can be as much of a barrier as a locked one for many residents.



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The ideal solution is a door with an automatic opener

Finally, some doors to the outside have a higher than acceptable threshold, designed to keep outside moisture from getting inside. Ideally, changes in level at thresholds are less than ¼ inch. If they are higher, install a transition strip (also called a z-strip) to make it less of a tripping hazard.

Outside features at the building envelope

Because of the aging process, it can take 90 seconds or longer for an older person's eyes to adjust to significant changes in light level—going from inside to outside or visa-versa. During this period, it can be very hard to see clearly, and people are at greater risk for falls.

BEFORE



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AFTER



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In this before and after, notice how adding chairs to both sides of the porch will better support conversations, while fans and lights extend the time periods when the porch can be used comfortably.

So, having a transition area that is covered, like a porch, and has places to stop and sit, is important. Sometimes, this porch may be as far outside as some people want to go. Some communities make this a screened-in porch, or a three seasons room, and for others it is just like an old-fashioned front porch. To extend the use of a porch, install lighting, ceiling fans and/or heater units (like what you see in outdoor restaurant patios). This will make the area more comfortable longer into the evening and extend the seasons when the porch is comfortable.



BRUCE BUCK

Having a transition area that is covered, like a porch, and has places to stop and sit, is important.



ACTS IRE COURTYARD

To extend the use of a porch, install lighting, ceiling fans and/or heater units

Because so many older adults have reduced stamina, having a patio for gathering close to a primary door is important. How this is furnished depends on how you want the area used. If you want people to gather for regular activities or snacks and meals, tables and chairs are appropriate. If this is more for casual conversation, groupings of chairs and side tables may be selected. Ask residents how they want to use the space, and what they need to make themselves comfortable there.



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It is important to provide opportunities for both sun and shade.



BRUCE BUCK

Having a patio for gathering close to a primary door is important



ST. JOHN NEWMAN

Shade can be provided through tree canopy, covered trellis, and umbrellas at tables.

Some people prefer to sit in the sun, while others prefer the shade—and of course it depends on the season and ambient temperature as to which will be more comfortable. So, it is important to provide opportunities for both sun and shade. Shade can be provided through tree canopy, covered trellis, and umbrellas at tables (though with the sun's movement people may have to move their chairs fairly often).

Furniture design is also important. Many older adults prefer having two arms on chairs for stability in standing up. Because of that some designers feel there should be no benches (which typically preclude having bilateral support) while others argue that not every older person needs bilateral support, and therefore benches are acceptable. This may depend on the functional abilities and preferences of your residents: ask them what kind of seating they prefer. If possible, have samples brought to the community for them to test out. Furniture should be steady and not prone to tipping if someone puts weight

on just one side or the back. Movement or rocking while sitting can be pleasurable for many people. There are gliding chairs which allow for some movement while sitting, but which have steady arms (unlike a rocking chair) which may better serve some people. There are also gliding platforms that let someone who uses a wheelchair to gently rock. Being able to sit close enough for easy conversation is also important, so chairs at



WHISPERGLIDE

Movement or rocking while sitting can be pleasurable for many people.

right angles to each other or face-to-face can promote conversation. In gardens for people with cognitive degeneration, some consideration should be given to making sure furniture (tables as well as chairs) cannot be easily moved to enable someone to climb over the enclosure marking the boundary of the garden. Also consider group size: sometimes people want to gather in larger groups, say for a meal or snack outside, and other times people want to be further away to have a more private conversation. Providing both larger patio space and “away” places will meet both needs.



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Ledges to lean or perch against can provide a place to pause for a moment.

Not every seat needs to be a chair or bench. Having ledges to lean or perch against, either the edge of a stable planter, or a handrail, or other solid surface, can provide a place to pause for a moment. Consider ledges at different heights, so children can also have a place to easily sit down.

Having things to do

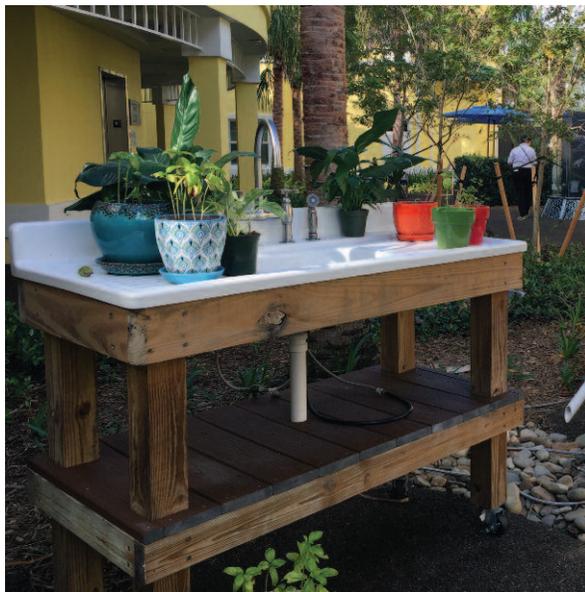
If you want people to go outside, you need to give them different kinds of things to do. Gardening is a common activity and having raised planters makes it easier to participate than having all the plants on the ground. Raised planters come in many styles, from free-standing wood structures to concrete space dividers that have ledges and an overhang, making it easier to pull up a chair. Having



BRUCE BUCK

Having raised planters makes it easier to participate in gardening activities.

some planters that get full sun and some that get shade allows for a greater diversity of plantings that can provide color and scents at different times of the year. If you want to encourage residents to garden, they need gardening tools, watering cans, and water that is easily accessible. A few care communities with sufficient space have created community gardens, where they grow vegetables for the community, a local farmers market, or a food shelter. Make sure there is sufficient commitment to follow-through with the work that this will take, but it can give people a sense of purpose and meaning in their lives.



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Encourage residents to garden with gardening tools, watering cans, and access to water.

A side benefit of gardens is that they can attract wildlife: there are plants that attract butterflies and hummingbirds (but be wary of plants that attract bees or wasps). Adding a variety of different bird feeders can not only attract birds but also give the residents something productive and meaningful to do outside, filling the feeders on a regular basis.



LAZY TIRES

A memory care household in a community in rural North Carolina only had room for a small garden, but several of the residents loved tending to it. As harvest time came for different vegetables, staff would bring in offerings from their own gardens, and surreptitiously add them to the residents' garden, so that when residents went outside to see what was ready to pick, there was always a bountiful harvest. They then brought them inside and used them in cooking activities.

Make sure the feeders can be easily lowered so the residents can reach the top to fill them up, and that the food is readily available.

Remember, the more the residents can do on their own, the less they need staff to initiate activities for them. Some communities add bunnies or even chickens to bring life to outside areas.



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Mc Gregor Home of Cleveland had a wonderful program, led by a horticultural therapist, who would get a pot for every resident and buy a wide variety of annuals, herbs and vegetables every spring. Each resident would select what they wanted in their pot, and it would be staked with their name. Even residents who initially said they did not care got a pot. All summer long residents would tend their pots, and in late summer they would celebrate all the wonders of the season—the biggest zucchini, the longest sweet potato vine, the most cherry tomatoes, or the most colorful flowers—everyone had something to celebrate. This served to get residents outside on a regular basis to tend to their pots.



Often people want something more to do than tend the garden. Many communities have a flagpole: ask a group of residents to be responsible for raising and lowering the flag every day. Make it a mini ceremony where someone can read a short poem or a few lines about country, service, seasons, or events. When it becomes an event, it becomes more meaningful to participate in. Install a little free library book exchange box and encourage residents to bring one book and take another. Seed the library with books from a second-hand shop or library book sale. Include some children's books so there is always something to do when children are visiting. Some communities create walking clubs where residents go



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Free Little Library

outside on walks. Keep track of distances and run contests for people to walk or roll the distance from your community to the next town over, or across longer distances. Going outside to walk is also one of the better activities to undertake during a pandemic like COVID-19.

Consider what sporting activities the residents might be interested in. Some popular ones that don't require a significant investment are a putting green, bocce, croquet and corn hole. If you have space consider a basketball hoop hung at a manageable level. Ask the residents what games they would like to play.

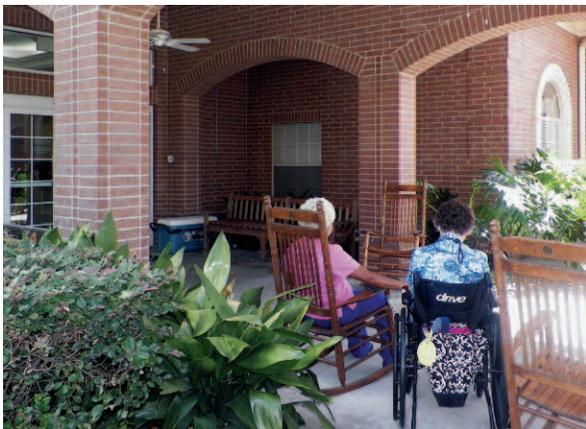


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A putting green, bocce, croquet and corn hole don't require a significant investment.

Make sure there is storage nearby, so the activity props are always readily available. If residents have to get the props from activity personnel, they are less likely to be successful.

Sometimes people do not want to “do” anything, they just like being outside. It helps to have some positive distractions. This is why, at many communities, you see residents sitting out by the front door: that’s where the action is. They can see who is coming and going. Having both sun and shade available can make this more pleasurable on both warm and cooler days. It can be helpful to create some small conversational groupings and leave space for people using a wheelchair, rather than just a row of chairs or benches,



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so visitors do not feel like they are having to “run the gauntlet” every time they enter. Encourage the residents to be welcoming ambassadors, greeting people and introducing themselves as people come to the community. Help make this a positive experience for everyone.



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Another very successful passive activity can be found at the Cottages at Cypress Cove, a memory care community in Ft. Myers, FL, where they installed a 6-spigot pop-jet fountain. The jets squirt water, sometimes a few droplets and sometimes a stream, at random intervals, and when the water falls back to the ground it makes a “plop” sound, providing both visual and auditory stimulation. Residents, as well as visitors, enjoy sitting in chairs around this feature.



Landscape features

While it is beyond the scope of this document to provide detailed recommendations on how to design supportive outdoor spaces within any specific region, there are some common principles that are helpful to know. The first has to do with scale. You want smaller and lower plantings closer to the building that gradually move to taller plantings further away, possibly against the far edge of the garden or courtyard. This provides a sense of transition and frames views. Additionally, there should be an interesting array of low plants beside pathways as many older people may walk with a cane or a walker, looking down. Plants that bloom or display colors in different seasons keep the outdoor spaces interesting throughout the year. Keep maintenance requirements in mind, including how equipment will enter and exit any enclosed gardens.

Paths should lead to visible and appealing destinations. When there are multiple paths, people can choose whether they want to take a longer walk, or a shorter one. This gives people choices. Be sure there are places to stop and rest along the path—both individual places and spaces for a few people to gather—in both sun and shady areas. The first seat or resting place should be no more than 20 feet from the entry to the garden. Some residents with a degree of frailty will avoid venturing further into the garden unless they can easily see a place to rest. For people using wheelchairs avoid paths taking sharp, right-angle turns as they are difficult to negotiate. In memory care communities provide a circular or figure-eight path leaving and returning to one entry point from the building to the garden. This will avoid the likelihood that garden users will get anxious about where they are. Avoid dead-end paths,



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Path with options



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Path with destinations

including paths that lead to doors or gates that are locked. This can create anxiety in some residents. Ideally, all paths will be level, but there are some sites that have an unavoidable grade change. When it's not possible to create level paths, make sure any sloping path has a grade no less than 1:20 (1 foot rise in grade to at least 20 feet in path length). There are different opinions about whether paths should always be wide enough for two wheelchairs to travel together or pass, or whether having “passing zones”—areas that are wider—are sufficient. As mentioned previously, providing a variety of flexible seating options, from chairs and benches to sturdy places to lean on, is important.



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Flexible seating options, from chairs and benches to sturdy places to lean on, are important.

Some gardens feature water elements, which can be a fountain, rain chains, even a small pond or riverbed. Anything with standing water requires more maintenance, and there can be concerns about safety, especially with individuals with cognitive disorders. The pop-jet fountain mentioned above that has no standing water and is a more “active” feature may be more suited for this population.



MEADOWOOD

Some gardens feature water elements, which can be a fountain, rain chains, even a small pond or riverbed.

Safety concerns

While there can be legitimate safety concerns at times, it can also be overly protective staff who want to limit residents’ ability to go outside on their own for fear they will fall or otherwise need assistance. There is no absolute answer to this issue: it is a balancing act between resident autonomy, the very real benefits of spending time outdoors (described in the first section of this paper) and making sure the risks are sufficiently managed that staff are comfortable as well. A well-designed garden or courtyard can go a long way to enabling both.

When safety is a concern, high visibility from the inside to the outside makes it easier for staff to see who is outside and be sure they are safe. This can be through windows or, if necessary, cameras (as long as there is someone to monitor them). A bay window or “greenhouse” window in the kitchen or activity room can provide a wider view for staff than just a flat window. Some living areas with direct access to the outside install an alert signal so staff know someone has gone outside. This should not sound like an alarm—



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High visibility from the inside to the outside makes it easier for staff to see who is outside and be sure they are safe.

the goal is to support residents going outside independently but let staff know—so a silent pager system is ideal.

Path design is also critical. Level surfaces with minimal cracks will be easiest for ambulatory individuals as well as people who use wheelchairs, walkers or scooters. Concrete, when used, should be tinted to reduce glare. An important safety feature to consider is having the edges of paths a contrasting color, and a minimal drop off between the path and adjacent surface. Some designers recommend even having a raised edge, though if they are low (less than 12") and not highly visible that can also be a trip hazard.

When a courtyard serves individuals with cognitive impairment, there are additional precautions that need to be considered. Certainly, more care needs to be taken to have non-toxic plants (see resources section). If the courtyard has a fence, it needs to be non-scalable and high enough that even when getting on furniture residents cannot climb over it. There is a lack of agreement about whether fences should be solid so

they can't see what's on the other side, or transparent. It may depend on what is on the other side of the fence and how appealing it is. Transparent fencing seems to work where the view is to adjacent landscape, but it is not recommended when the view is to a parking lot or street, suggesting ways of leaving unattended. There is evidence that when people feel comfortable and at home, and are appropriately engaged in meaningful activities, they are less likely to actively try to leave or spend significant amounts of time doing nothing. So having regular "chores" related to the outdoor space (as described in an earlier section) not only helps them to get the daylight they need to maintain appropriate day/night cycles, it can keep them engaged and participating with each other, staff and visitors. Many caregivers fear having any standing water in a garden used by people living with dementia, which is why the pop jets are such an appealing feature.

Design process

Finally, a few words about the design process. Far too often residents and family members are virtually excluded from the planning process, except for a meeting or focus group that basically presents a completed plan and maybe accepts a few suggestions. While it can be difficult to manage a large group of residents, each of whom wants their own favorite feature included, there are ways to be inclusive and efficient. Depending on the independence of your residents, ask them to form a committee, where one or two people take ideas back to the larger group. Have them collect pictures that reflect what they are interested in doing and having in the garden—a picture speaks a thousand words!

Staff who will be most responsible for supporting residents to go outside—activities personnel and nursing assistants typically—should also be involved. Maintenance and grounds should be involved as they will have some responsibility for maintaining the garden(s). Remember, the more appealing the garden is for people to be outside, doing things (including maintaining the gardens) the less the staff have to do.

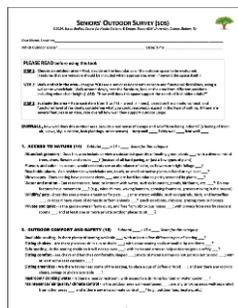
Some communities also look to partner with master gardeners in the area. If there is a Master Gardener training program in your area, there may be people who will be willing to volunteer to help out. They can also be included in the planning process. Check out the resources section for a few websites to help you find local Master Gardeners. If you need beds or other features built, Boy Scouts who are working toward being an Eagle Scout need projects to work on. The bottom line is, don't try to plan the garden all on your own, or with a designer who wants to go back to the office and design something for you without the active input of the people who will be using the gardens. That is part of the reason why there are so many under-utilized gardens now.

PART 3

Assessing Your Outdoor Environment

If you are reading this, you probably have some outdoor areas that are underutilized, that you are trying to learn how to improve. Assessing your existing environment is always a good place to start. While there are a number of useful tools available, the one I recommend is the Senior's Outdoor Survey (SOS) tool. It was developed with direct input from three distinct sources of information: design for aging experts; preferences of residents living in independent, assisted and nursing care communities; and data from how residents actually used a number of outdoor spaces [25]. The SOS tool can be used either to evaluate an existing environment, or during the design process to check if you are including elements that are considered important. Table 1 lists the 60 elements that came from an extensive literature review process. The 18 items that are highlighted are the garden elements that were consistently rated as being important by the experts, the residents, and were in fact used by residents when they were outside. These should be considered essential components of most every garden.

While the SOS tool has high reliability (meaning different people rate the same garden the same way) if you are evaluating an existing outdoor space, it can be useful to have multiple people complete the survey, because of the education and insights they will get, which are much more detailed than what they would get by just walking around the space on their own. Even your landscape designer, if you are using one, should complete the tool. This will also provide a basis for shared communication about features, existing or desired, as you go through the design process.



The SOS tool is freely available at <https://www.accesstonature.org/resources.html>. It is available in Chinese, Spanish, Japanese and Italian.

Alternatively, an audit tool for gardens in memory care facilities is available in the book “Outdoor Environments for People with Dementia,” Susan Rodiek and Benjamin Schwarz, Editors. (Binghamton NY, Haworth Press, 2007). Clare Cooper Marcus, Alzheimer’s Garden Audit Tool, pp. 179-191

TABLE 1
SOS Tool ranking of item importance

ACCESS TO NATURE

(14 items)

- 3.7 Amenities for birds and wildlife**
- 3.3 Diverse mix of plants and trees**
- 3.3 Water features available**
- 3.0 Abundance of greenery**
- 3.0 Abundant flowers and color**
- 3.0 Easily reachable or raised plants**
- 3.0 Seating has pleasant views**
- 2.3 Amenities for pets
- 2.0 Private places to sit
- 2.0 Outdoor area is not noisy
- 2.0 Privacy from resident rooms
- 1.6 Can see domesticated animals
- 1.6 Hard boundaries screened by plants
- 1.2 Features with movement

OUTDOOR COMFORT AND SAFETY

(15 items)

- 3.3 Plenty of seating available**
- 3.0 Seats available in sun or shade**
- 2.7 Seats comfortably shaped
- 2.7 Microclimate control
- 2.7 Outdoor area well-maintained
- 2.4 Smoking areas well-separated
- 2.3 Some seats have cushions
- 2.3 Tables for coffee, food, etc.
- 2.3 Seating has arms and backs
- 2.3 Seats will not tip over
- 2.3 Choice of different seating types
- 2.0 Seats do not get hot or cold
- 2.0 Swing, glider, rocking chairs
- 2.0 Some seating easily movable
- 1.2 Restroom, drinking fountain

WALKING AND OUTDOOR ACTIVITIES

(14 items)

- 3.3 Abundant walkways of different lengths**
- 3.3 Round trip walkways available**
- 3.3 Paving level, easy for wheelchairs**
- 3.3 Destinations to move toward**
- 3.2 Places for social activities**
- 3.0 Paving nonskid and nonglare**
- 3.0 Places for recreation and exercise**
- 3.0 Interesting views from walkways**
- 2.7 Walkways partly shaded
- 2.3 Frequent seating along walkways
- 2.3 Some walkway seating in shade
- 2.0 Play areas for children
- 2.0 Place for gardening horticultural therapy
- 1.6 Handrails along some walkways

2.9 INDOOR–OUTDOOR CONNECTION

(11 items)

- 4.0 Doors open with minimal effort**
- 3.7 Automatic door available, easy to use**
- 3.7 Can easily cross door threshold**
- 3.3 Doors unlocked during daytime**
- 3.0 Doors do not close too quickly**
- 3.0 Outdoors visible from main indoor areas**
- 2.7 Indoor transition space near doorway
- 2.7 Wide paved landing outside doorway
- 2.3 Easily reached from indoor commons
- 2.0 Outdoor transition space near doorway
- 1.7 Multiple ways to reach outdoor area

CONNECTION TO THE WORLD

(6 items)

- 3.0 Area is located near main entry**
- 2.7 Views of off-site scenery
- 2.7 Views of nearby streets or traffic
- 2.3 View of vehicles arriving at facility
- 2.3 Views of front-door activities
- 2.0 Views of off-site buildings, activities

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Resources

1. SOS tool and other resources can be freely downloaded at www.AccessToNature.org
2. American Society of Landscape Architects Health Benefits of Nature <https://www.asla.org/healthbenefitsofnature.aspx>
3. For a discussion of coronavirus spread in outdoor environments, see
 - a. <https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/visitors.html>
 - b. <https://www.vox.com/future-perfect/2020/4/24/21233226/coronavirus-runners-cyclists-airborne-infectious-dose>
4. Poisonous plants
 - a. <https://www.poison.org/articles/plant>
 - b. <https://www.webmd.com/skin-problems-and-treatments/ss/slideshow-poison-plants-guide>
5. How to find Master Gardeners
 - a. <https://mastergardener.extension.org/contact-us/find-a-program/>
 - b. <https://www.greenamerica.org/blog/getting-help-master-gardeners>
6. Clare Cooper Marcus and Naomi Sachs, *Therapeutic Landscapes: An Evidence-Based Approach to Designing Healing Gardens and Restorative Outdoor Spaces*. Chapter 9: Gardens for the Frail Elderly; Chapter 10: Gardens for People with Alzheimer’s and Other Dementias. (Hoboken NJ: John Wiley and Sons, 2014.)

Acknowledgements

There were a number of key individuals who helped make this project possible. Dr. Susan Rodiek, one of the leading researchers on outdoor environments for older people, provided many resources, including many of the photos, as well as access to her research and valuable insights. Several very creative landscape architects shared their insights and examples, including Brad Smith of Brad Smith Associates, Jack Carman of Design for Generations, and David Kamp of Dirtworks. They provided much of the inspiration for the creative ideas included in this paper. Finally, financial support was generously provided by Matt & Susan Richardson, owners of WhisperGLIDE.

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Dr. Calkins is nationally recognized as a creative, dynamic leader, trainer and researcher in the field of environments for elders. She was President of IDEAS: Innovative Designs in Environments for an Aging Society, a consulting firm dedicated to exploring the therapeutic potential of the environment—social and organizational as well as physical—particularly as it relates to frail and impaired older adults, and is now Chair of the Board of IDEAS Institute, which focuses on research and education in the same area. She has published extensively, and her book *Design for Dementia: Planning Environments for the Elderly and the Confused* was the first design guide for special care units. *Creating Successful Dementia Care Settings*—a four volume series—addresses the care setting in a more holistic manner, combining physical, social and organizational issues in to one comprehensive text.

She has received over \$5m in grant funding from the National Institutes of Health and foundations to develop training materials and explore the impact of the environment on people with dementia. Recent projects include the development of Dementia Design Info which summarizes the environment-aging literature, puts it into easy to understand terms, and provides practical design suggestions for creating dementia-capable environments, and the development of the ECAT: Environmental Communication Assessment Toolkit to create environments that support effective communication in individuals with dementia.

She has served on numerous boards, both local and national, including Pioneer Network, and the Cleveland Chapter of the Alzheimer's Association and has partnered with The Green House® Replication Project and Planetree. She was a founding member of SAGE– Society for the Advancement of Gerontological Environments, and is on the Editorial Board for *The Gerontologist*, *Journal of Housing and the Elderly*, *Journal of Clinical Psychology and Health Environments Research & Design Journal*.

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