

A Case Study of a Rural Senior Cohousing Community with Attention Restoration and Nature

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Abstract

Exposure and interaction with nature provides benefits to individuals, including older adults. The purpose of this study was to examine design features of senior cohousing communities that connect older adults to nature, and explore the connections of the design features with the Attention Restoration Theory. The importance and presence of nature in older adult facilities, especially senior cohousing communities needs to be considered. The Attention Restoration Theory's components of being away, fascination, extent, and compatibility are observed in senior cohousing communities. The component of being away was found in the design features of the individual home back porches and the labyrinth. Fascination was found in the wild and raised flowers throughout the community and large windows. The component of extent was supported in the design feature of the sidewalks throughout the community and the built handrails and nature trails on the edge of the community. Finally, compatibility was seen in the common garden, compost area, Common House patio, sidewalks and windows. The consideration of nature within the development of facilities for older adults, particularly senior cohousing communities, is valuable and necessary for the quality of life of older adults.

Keywords

Older Adults, Senior Cohousing Communities, Nature, Attention Restoration Theory

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1. Introduction

As an increasing number of older adults search for new housing options, the quality of available environments becomes an important consideration in the decision-making process. Evans and McCoy [1] state that humans spend over 90% of their lives inside buildings, but these interior spaces have the capacity to cause stress. This stress, associated with a set of possible dimensions of interior buildings (stimulation, coherence, affordance, control and restoration) may have negative effects on human health [1] especially when such a large fraction of time is spent indoors. Research shows that the physical environment has close relations to the health and well-being of older adults [2]. A healthier

environment may include changing built elements to increase activity, community, and in turn, well-being [3]. Durrett [4] states that the design of indoor and outdoor accessibility are equally important for healthy living for older adults.

The development of the human disconnect with nature is referred to as the "nature-deficit disorder" [5]. Greenleaf [6] states that a diminished sense of meaning and purpose can be related to the absence of connection with the outdoor environment. This nature deficiency may cause other mental health issues such as isolation and despair [6]. Adults that are in the "baby-boomer" generation spent their childhoods playing outdoors and exploring the natural world [5]. As our

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current culture suffers from a lack of nature exposure, older adults that used to spend their childhood and years of carefree play in nature seem to be now left by younger generations to spend their final years trapped indoors. It can be argued that exposure to nature among older adults is extremely important, especially in consideration of the average older adult's history with nature environments.

Directed attention fatigue, caused by constant attention and extended exposure to the built environment can have detrimental effects on the functioning of the individual and is closely related to "ineffectiveness and human error" [7]. It is important to restore directed attention quite simply for the functioning of the human status [7, 8]. Attention Restoration Theory (ART) defines experiences that can lead to the rejuvenation from the fatigue of the directed attention of individuals. There are four different components related to ART in considering if an environment is restorative: being away, fascination, extent, and compatibility [7, 8]. Therefore, it can be argued that the ART applies to older adults as restoration, for directed attention is important for all individuals. There are numerous benefits to spending time outdoors, including positive reactions to the physical, social, psychological, and well-being of an individual [6, 8, 9] and natural settings can decrease challenges that older adults suffer from in these areas.

The design of one residence option for older adults, senior cohousing communities, includes many different characteristics. Wells and Laquatra [10] report that walkability and nearby nature are beneficial for older adults [10]. Nature can also act as an element that draws older adults together to socialize [8, 10] and form community among other elements that benefit health [10]. These characteristics are prevalent in the design of senior cohousing communities through sidewalks connecting destinations, along with other outdoor facilities that may be available to the residents. Senior cohousing communities offer both indoor and outdoor environments for residents, connecting spaces with outdoor sidewalks to promote activity and community. The design of a senior cohousing community provides an interesting area of study for the presence of nature in the lives of older adults because a natural environment is unavoidable if residents plan to leave their individual homes. Residents must walk outside to visit the Common House, go to their cars, or check their mail.

Few studies have explored the connection between nature and the effects specifically on older adults, but this could be beneficial. Senior cohousing communities have great potential in providing natural environment opportunities for older adults due to their composition. The connection between older adults, the benefits of nature, and the ART may provide key information to enhancing senior cohousing

communities and other residence options currently available to older adults.

The purpose of this study was to understand the connection of the ART on existing design features that promote nature connections in senior cohousing communities. This study aims to share and analyze design features with the lens of the ART. Many of these design features are already in use and have value on their own, but this study addresses the application of these design features in consideration of the categories of the ART. Under this lens, these design features might expand knowledge as to how to more substantially incorporate the benefits of nature into senior living. These design features have been previously deemed important by older adults in their residence at a Midwestern rural senior cohousing community.

2. Review of Literature

2.1. Attention Restoration Theory and Nature

The ART states characteristics of experiences that can lead to rejuvenation of individual's directed attention [7, 8]. The components of ART include being away, fascination, extent, and compatibility, which are argued to relieve what Kaplan and Kaplan [8] and Kaplan [7] state as any "prolonged mental effort" which causes fatigue to an individual's directed attention. Directed attention can be defined as the ability to function, and therefore fatigue in an individual's directed attention can have negative effects on selection, inhibition and affect, fragility, perception, thought, action, and feeling [7, 8]. Natural environments are closely related to the four different components of ART and best support the qualities associated with restorative environments and frequently include all four of the components to ART [7, 8].

The ART is not only beneficial for older adults simply because of relief from directed attention, but can also provide relief from fatigue that may be caused by mental or physical illness as well. Just as Wagner & Cella [11] state that fatigue from cancer-related illness can cause negative effects on an individual's ability to function and their quality of life, restorative environments would be beneficial for older adults experiencing fatigue from cancer or other illnesses. Ottoson and Grahn [12]) specifically researched the effects of nature and outdoor spaces on older adults in older adult care environments. The participants were tested before and after spending time indoors and outdoors to determine changes in concentration (in relation to the ART) and heart rate or blood pressure [12]. The results showed the outdoor setting increased the older adult's ability to concentrate, and Ottoson & Grahn [12] then state that this increase in concentration could

influence the older adult's functioning in daily life. Participants stated that after spending time outdoors, they were happier, more energetic, and had a better state of mind [12]. Greenleaf [6] states that mental health can be improved by spending less time inside, as imagination, communication, and social engagement can be enhanced by an outdoor setting.

2.1.1. Being Away

The first component of ART is the idea of *being away*, which is generally associated with having the opportunity to "get away" such as a what vacation setting might entail, and it must provide a conceptual shift [7, 8]. *Being away* allows for an "escape" from elements of daily life [8]. *Being away* is closely related to nature as natural settings provide an immediate opposite to urban environments and most individuals no longer spend every day in natural settings [7, 8]. Scenes such as mountains, seas, lakes, etc. appeal to individuals and provide the opportunity to rest [7]. Soderback, Soderstrom & Schalander [13] researched the effects of imagining nature, viewing nature, visiting gardens, and participating in gardening, which are all classified as horticulture therapy. They found that horticulture therapy assists with improvement in the emotional, cognitive, sensory, social, health, well-being, satisfaction of participants and an overall better quality of life [13, 14]. Kaplan [7] states that for a person who gardens, even a brief escape to their backyard to check on their garden can provide relief from worldly stresses. Individuals may experience benefits in their cognition and affect by spending time in a natural environment; benefits may include decreased anxiety, decreased rumination, and benefits to complex working memory span tasks [15].

2.1.2. Fascination

The second component of ART is *fascination* which is categorized as things that individuals find interesting or captivating [7, 8]. A category of *fascination* is 'soft' fascinations which are defined as things that hold the attention of the individual, but in a simple fashion; this means that the attention to these things is effortless, and the mind can still wander while holding focus [7, 8]. Most all elements in nature associate with *fascination* of an individual. 'Soft' fascinations in nature are elements such as: "clouds, sunsets, snow patterns, the motion of the leaves in the breeze" [7, 8]. Nature is also associated with positive emotions for when the individual perceives the nature as beautiful, and in turn, has the potential to increase aspirations for socialization [8, 16]. Having others present in nature settings may also increase the individual's feelings of safety, which may increase the restoration qualities of the natural environment [17].

2.1.3. Extent

The third component of ART is *extent*, which is associated with the idea of feeling as if the individual is in a spacious area, or part of a different, expansive world [7, 8]. The actual space where *extent* is present does not need to be expansive itself, it simply needs to portray a feeling of expansion, even if it is connecting the individual to historical information which could assist the individual in feeling connected to a larger world, and may allow connectedness of the individual [7, 8]. *Extent* is readily seen in most every natural environment, as the natural environment often seems expansive, or a portion of something greater [7, 8]. Staats, Kieviet, and Hartig [18] analyzed psychological and restorative benefits in walking environments (natural verses urban) and several studies analyzed restorative walking environments and/or the relation of the social context of the walk [17, 18, 19, 20] Throughout the studies, there were many benefits of the outdoor environment over the urban environment. Staats et al. [20] found that participants preferred to be alone when searching for restoration, even if the companionship was someone they knew. Staats and Hartig [17] and Johansson et al. [19] state that companions during attention restoration are beneficial when seeking restoration in an urban environment. Staats and Hartig [17] attribute this comfort and desire for companionship during restoration to feelings of safety, and having another present in an environment where an individual did not feel completely safe, may assist with comfort and the restorative benefits of the environment. Having a companion in the urban environment increased the concept of urban walks [17, 19, 20].

There are benefits to creating friendly neighborhood environments where individuals want to walk in. In a study focused on how likely individuals were to walk in their neighborhoods, it was found that men preferred aesthetics, convenience, access to facilities and coastal locations [21]. Humpel et al. [21] also reported that women were likely to walk in the neighborhood if it rated high in convenience. Roe and Aspinall [9] support that adults benefit from walking in rural settings and adults with mental health issues had a greater restoration from these exposures than adults classified with a healthy mental state.

2.1.4. Compatibility

The fourth component of ART is *compatibility* which is defined as an environment that the individual feels more comfortable in or one that requires less demand and effort from the individual; the environment must help the individual achieve what they are attempting to do [7, 8]. *Compatibility* is an interesting connection to nature, as individuals seem to function with less effort in natural environments even though urban environments are where they spend the majority of their time [7, 8]. The natural inclinations of human

interaction with nature to increase the *compatibility*, including the roles of predator, locomotion, domestication, observation, and survival [7, 8].

For some older adults, keeping a healthy lifestyle is a large part of their daily lives. Green exercise is defined by Barton and Pretty [22] as “activity in the presence of nature.” Barton and Pretty (2010) found that the mood and self-esteem of a participant increase during short involvements of green exercise, regardless of the characteristics of the outdoor exercise (duration, intensity, location) or the characteristics of the participant (gender, age, health status). Another study researched the connection between exercise in nature and emotional well-being with an exploration of restoration, socialization, and the duration of the activity [23]. Korpela et al. [23] found an indication that exercise in nature is restorative, but socialization and duration did not affect the connection between the nature exercise time and emotional well-being. This study shows that restoration has a connection to recreation in nature and emotional well-being [23].

Just as Ottoson and Grahn [12] state that nature increases older adult’s ability concentrate, which relates to functioning in daily life, it is important to explore opportunities to include the availability of natural environments for older adults.

2.2. Senior Cohousing Communities

A common desire for older adults is to spend their years in a living environment that allows for companionship and mutual support [24]. Senior cohousing communities provide a solution to this desire as they are composed of individuals with independent incomes who occupy individual residencies that come to live as a community. Senior cohousing communities are non-healthcare environments composed of individuals that are ages 55 or older. Cohousing communities are not a substitution for older adult residences with more intensive care and do not aim to be [24].

There are six components of cohousing according to Durrett [4]. The six components include a participatory design process, deliberate neighborhood design, extensive common facilities, complete resident management, a non-hierarchical structure, and separate income sources [4]. These six components provide older adults with the opportunity to help organize the design of their housing development and incorporate community as a large part of the concept, where common facilities are present to compliment the individual living areas [4]. Residents partake in the design of the site, building design, common areas and individual homes [24]. The social components state that the senior cohousing community is managed solely by the residents, with shared responsibilities and separate incomes [4]. The intentional community model focuses on allowing the older adults to

make decisions about their lives and can have a focus on mutual support among residents [25].

The senior cohousing community model may seem similar to other communal living options, but there are four characteristics according to Sanguinetti [26] that differentiate senior cohousing communities from other community living scenarios. These characteristics include a central meeting place within the neighborhood, an intentional size of the community that allows for both stability and intimacy, the lack of hierarchy, and residents maintaining separate incomes [26]. Choi [24] states that older adults should not be forced to live in senior cohousing communities, but senior cohousing communities can be an option for more active, younger adults that seek community. Senior cohousing communities may also add a sense of perceived autonomy to the lives of older adults, which can help with independence as they age [27].

The Common House is a primary communal characteristic of senior cohousing communities. The community shares many amenities associated with the senior cohousing community that is separate from their homes. A Common House normally consists of common living spaces, a kitchen, possible guest rooms, and other areas that the residents of the community can use and share. These spaces need to be designed with ample space for communal activities and the opportunity for social contact [24]. A common dining space and laundry facilities are almost universal throughout various senior cohousing community Common House designs [28]. Other characteristics that can be seen throughout the Common House may include other living or working spaces such as game rooms, offices, and workshops. Clustered mailboxes and clustered parking are common characteristics of senior cohousing communities as are outdoor patios, porches, common gardens, compost areas, and spaces such as labyrinths. Other unique facilities such as bike storage may be included or vary according to the community preference. Community spaces and individual homes are often connected through a sidewalk system, inclusive of outdoor nodes that have patio furniture for miniature gathering spaces. The residents of the cohousing communities manage their own facilities, finding a balance between private and communal spaces [28].

Senior cohousing communities generally have 20-30 individual houses [24]. The more public spaces of the individual homes, such as the kitchen are commonly oriented toward the community, while the private spaces such as the bedrooms are towards the back and more remote part of the house [24]. Single level homes may help people feel more attached to the outdoors, and having easy access to outdoor spaces is argued to be important for residents to sustain healthy lifestyles [4]. The individual homes are designed as small as they can be so that the common areas may host other

living necessities for shared usage [24].

Sanguinetti [28] states that cohousing provides an opportunity to develop pro-environmental behavior by the interaction with natural elements such as settings, flora, and fauna. Cohousing activities which may increase the connection to nature among individuals may include gardening, maintaining the landscape, and grounds care [28].

Wells and Laquatra [10] analyzed why Green Housing and Green Neighborhoods are environments that can be beneficial to the well-being of older adults. They reported that the characteristics of walkability and nearby nature were beneficial for older adults [10]. In addition to nature acting as an element that draws older adults together to socialize and form community, when designed correctly, nature spaces can provide an area for physically active lifestyles and therefore create an opportunity for more successful aging [10]. These characteristics are prevalent in the design of senior cohousing communities through the sidewalk systems and other outdoor facilities that may be available to the residents. Kaplan and Kaplan [8] also state that simply knowing that accessible nature is nearby can be beneficial. Within well designed senior cohousing communities, residents know that nature is both nearby and accessible.

Senior cohousing communities provide a community to live where liabilities are lessened and the quality of life increases [4]. They are an environment where older adults have the opportunity to share their lives with others and have more involvement than what neighbors of a traditional setting would have [24].

3. Methods

3.1. Site and Participants

Purposive sampling was used to recruit older adults who had been residents at a Midwestern senior cohousing community for longer than six months. The community, established in 2012, was contacted initially by email to participate, and after a positive response from the community, meeting times were scheduled. Out of the 31 residents that were living at the senior cohousing community, 11 residents expressed interest in the study, and 10 completed the study. The study duration began with the first meeting and concluded with the last individual interview six weeks later.

3.2. Data Collection and Analysis

Photo-elicitation through individual interviews was conducted to collect data. The visual research method of photo-elicitation integrates photos into research interviews to better understand the viewpoint of the research participant [29].

Each participant received a disposable camera, a pseudonym, and a task sheet which included different photo prompts to guide the participant in the photo collection. The task sheet encouraged the participant to photograph elements within the Common House, inside and outside their individual home, and any other miscellaneous senior cohousing community elements that the residents felt attached to. The disposable cameras had 27 exposures, and the task sheet asked for 24 different photos opportunities among the various prompts. Two extra cameras were available for the residents in the circumstance that the 27 exposures were not enough for the residents to fully capture their 24 or more elements.

The residents were allowed two weeks to photograph elements. The researcher collected the cameras after this time. Most residents had used all of their 27 exposures, but no exposures were used on the extra two disposable cameras. The researcher developed the film and organized the photos by each resident's assigned pseudonym, which was also labeled on the cameras. Task sheets were photocopied for researcher reference, and the original task sheet and the developed photos were returned to each participant in a sealed envelope.

Individual interviews were scheduled with each participant within the following 12 days. The residents had time to select which photos they wanted to share with the researcher, as by doing so, it was understood that the researcher could then use the photos in dissemination of results. Many residents took notes on the back of their photos as guidance and notation of key points during their interview. The residents had one hour to share their photos as the researcher asked demographic and open-ended questions about the importance and meaning behind each photo the participant shared. Open discussion of the topics stimulated self-expression and greater communication between the researcher and the participants.

Demographic information was summarized, and the interviews were transcribed and coded using the computer software NVivo. The preliminary content analysis was conducted, and researchers collaborated to organize emerging themes from the interviews. Coding, memorandums, and comparative analysis were used to organize and understand the research results. Elements from the larger study that were mentioned more frequently were deemed to be more influential and important in the participant's attachment to the senior cohousing community. Residents frequently shared their experiences of their available natural environments and nature was deemed important by the residents as a part of the larger study.

The nature elements photographed by residents during the larger study were then analyzed by the four components of the ART: being away, fascination, extent, and compatibility

to determine the natural benefits of the senior cohousing community in relation to the ART.

4. Findings

There are 31 residents are divided among 24 individual homes within the senior cohousing community. There is a Common House on the property and four different size options for the individual homes. The 24 homes are organized in clusters of eight homes, creating three “pods” that the senior cohousing community refers to as miniature neighborhoods within the community. Sidewalks wind through the community connecting the Common House to the individual homes and other cohousing facilities. The sidewalks feature small conversation nodes, which are small outdoor gathering spaces inclusive of seating.

The Common House has several different spaces inside for use. The most popular is the dining room, and as the largest and most flexible space, most of the senior cohousing community events take place here. Adjacent to the dining room is a small “living room” called the hearth room, and on the opposite end, there is a game room. Other facilities within the Common House include a community kitchen, laundry room, restrooms, three guest rooms, a workshop, and an office. The Common House also has a front and back porch that are used by the community.

The rest of the senior cohousing property has additional facilities such as covered parking and garages, a bicycle shed, a tool shed, and a collection space for trash and recycling. There is also a space for a common garden and compost. The western edge of the property has a natural creek and nature trail where the senior cohousing community has built in bridges and handrails.

Making decisions using a system of consensus, the senior cohousing community is self-governing. They hold common social values and have regular meetings to stay in touch and current with community happenings.

The residents in this study were aged from their early 60s to late 80s, and all identified as Caucasian (100%, n=10). The majority of the residents that participated in the study were women (80%, n=8) and on average the participants had lived in the senior cohousing community for three years, while some had lived in the community since for three and a half years, since its organized design and construction.

When specifically analyzing the developed design features under the categories of the ART, the element of compatibility was supported the most, followed by extent and fascination and then being away was supported the least by our discussed design features.

4.1. Compatibility

Compatibility can be associated with a space that is helping the individual achieve what they are attempting to do [7]. The community holds a set of values that they all aim towards, which include being active in the community, stewardship of the environment, learning and growth, interdependence, mutual respect, support, compassion, spirituality, family fun, healthy living, diversity, and participating in the larger city community [30].

Under the value of stewardship of the environment, the community uses the common garden and compost area. The common garden is small and manageable for the community and provides a great source of organic food. Many residents contribute to the compost, which is depicted in Figure 1, making the compost production more successful than what one individual would be able to accomplish. One resident even set up a water tank for easy access to cultivate the compost. Participant I describes the connections formed through the use of the gardens:

“... there are the garden beds down toward the back, and we raise some of our own food, used for personal meals and common meals, and this one is freshly built, I built that one in the last month, but it's not filled yet, but we should have a load coming tomorrow. You know working together on the gardens and whatnot, doing anything that's worthwhile creates connections between community members, and you get good food out of it, and it creates connections.”



Figure 1. Compost Area.

The Common House Patio allows for the senior cohousing community residents to fulfill several of their values. This area provides a spacious outdoor setting to socialize, just as residents would in the dining room of the Common House, but with the opportunity for the participants to sit outside. Not only is this space easily visible from around the community, residents have a flag that is put out when events are occurring. The patio also provides a beautiful view of nature within the community. During the warmer months, more activities are held out on the Patio instead of inside the Common House, such as Monday Morning Coffee and

Thursday Happy Hour. Figure 2 shows a view of the Common House patio.



Figure 2. Common House Patio.

The community also values healthy living, and the sidewalks and encouragement of walking around the community provide options to enhance this goal of healthy living. As there can be a health benefit from even short lengths of time from exercising in nature [22], it can be argued that the sidewalk systems present in senior cohousing communities are beneficial for the older adult's well-being.

4.2. Extent

Extent is associated with the feeling of being in an expansive space or having connectedness to the experience and to something greater [7, 8]. Having the presence of sidewalks throughout the community gives the idea that there is a set area of the community. Part of the nodes and sidewalk system can be seen in Figure 3. However, there are not sidewalks throughout every area of the community, and this allows for the residents to feel as if the unbeaten path is part of their world, but less regulated, and always available to be explored. Participant A shares their experience with the nodes and sidewalk system around the community:

"I enjoy walking around the community, its nice. We have a lot of paved area that I can stay on, but I do get off the beaten path obviously, and it is nice to walk around and enjoy. It's my property as much as it is the next guys, you know, and we enjoy that. I think that that's a part of what makes the community the community, is it's just a built-in area for everyone to enjoy!"



Figure 3. Nodes and Sidewalk System.

The built handrails and bridges in the nature trails on the western edge of the community also allow for the presence of extent in the senior cohousing community. A portion of the nature trail can be seen in Figure 4. Participant E mentions that they appreciate having a natural space so close to their homes:

"Oh woods walk, very important part, our woods and creek trail - almost every day I will walk this trail sometimes with the cats or alone. This trail was built by other community members and many take advantage of the benches and sit quietly in nature. Of course I did not have that, only when we were camping and we camp and hike, that was, and we had to go to a place to do that ... but it's nice to have something right outside their door. So [community member], right there, and another fella, built the bridges, and there's some chairs and benches on the other side, and it's not extensive but it's enough to take you out of your home and immerse yourself."



Figure 4. Bridge in Nature Trail.

4.3. Fascination

Fascination is related to things that individuals find interesting or captivating [7, 8] and the wild and raised flowers throughout the community, which can be seen in Figure 5, support this characteristic. Throughout the community, there are areas of wild and raised flowers that the residents mentioned quite frequently in the interviews and thoroughly enjoy. One of the reasons for the abundance of flowers was that the community members did not want to have to mow all of the acreages of land, and therefore it was decided that they would sow native wild flowers in the area. However, many residents still plant or upkeep their own raised flowers each season. Participant F stated their appreciation for the natural landscape features of the community:

"Well, it's one of the really nice landscape features of [the cohousing community], is all the trees and wild flowers get up on this berm, and I suspect somebody will show you a picture of that when it's in full bloom, because it is terrific."



Figure 5. Raised and Wild Flowers.

The presence of windows in interior spaces is a design feature that allows for fascination [1]. Figure 6 shows the large windows in the senior cohousing community that allow the residents to experience soft fascination of natural elements while they are indoors. Participant J shares their experience with the large windows:

“Great windows, I cannot say enough about great windows. I just love the windows, I love being able to feel close to outside, this is not a great picture, but even the windows on the doors...”

The windows are built above the average furniture height, and extend to the fullest height available. This way, the opportunity for natural views is unobstructed by indoor necessities and allows the residents to have constant views to the natural world. Kaplan and Kaplan [8] mentions that many times, the appreciation and love of nature comes from simply having the opportunity to observe it, and this often occurs through windows instead of an actual presence in nature. Skylights throughout the community assist with the incorporation of natural lighting into the individual homes. Participant B explains the qualities of the windows:

“Being able to have the living area and have this light up here allows me to have the freedom to put furniture up underneath it. We made the windows a little bit higher to make sure we had room to arrange furniture underneath so you can flex your furniture and move it all the time if you want... we made them as large as we dared to make them, so they go high on the wall and they go down to that level so that you’ve got a maximum amount of light. One of the things that happens to us as we age is the ability to really have the vision, you just need more light to see. So we just created it so that it would be there all the time. We can actually be in our houses even on a grey day with no lights on.”

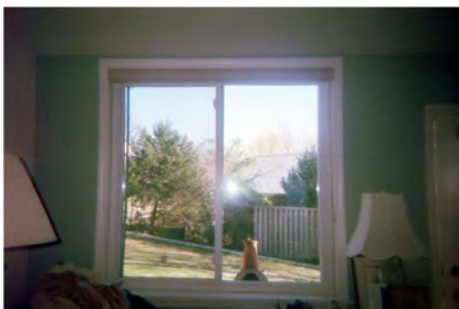


Figure 6. Large Windows.

4.4. Being Away

Being away is associated with providing a conceptual shift for the individual [7, 8]. The residents quite frequently mentioned their individual home back porches as a place where they could escape to. Figure 7 shows an array of back porches. The cohousing community has an unspoken rule that the individual home back porches are private space, and other residents cannot disturb or initiate conversation with another resident when they are on their back porch. Participant E shared their experiences with the back porches on their individual homes:

“This is a back porch which... is a private space for reading, dining, and we eat back there sometimes.” – Participant E continued on to say that it was one of their favorite things because, “I get to sit out there and watch this wonderful vista I love... Anyway, that’s one of my favorite things, and I would miss it!”

This feature was not as important to all residents, as due to the location of the pods, the residents that had the back porch view towards the Clustered Parking appreciated the view less than the participants who had a nature view from their back porch. Participants that enjoy their outdoor space, however, are very attached to this design feature, as Participant J mentions:

“I could have a horrible house, but if I had a good back porch, I would be okay.”



Figure 7. Individual Home Back Porches.



Figure 8. Labyrinth.

Another design feature that helps some residents with feeling

as if they are being away is the labyrinth, which is shown in Figure 8. The labyrinth is placed under a tree on the cohousing property and was initially inserted as an outside location for meditation. Participants mentioned that they enjoy having the labyrinth, and although it is not used as frequently as some would like, it was deemed as a design feature important to the residents. It is a location that participants can wander to.

5. Discussion and Conclusion

This study was limited to one rural senior cohousing community that shared design features that support their appreciation for the senior cohousing community. Visual research methods were employed so that residents would focus on the content, not quality, of each photo [29]. This method assisted with the qualitative and explorative aspect of the study as residents shared their individual perceptions of their senior cohousing community. After nature appeared as a prominent element of the community, it was analyzed under the lens of the ART using being away, extent, fascination, and compatibility. Had the study began with a greater focus on nature, and residents been asked to specifically focus on nature, the same and different design elements may have emerged.

While this study showed that there is a presence of elements of the ART in a select rural senior cohousing community, analysis of another senior cohousing community of a different rural geographical setting or a senior cohousing community located urban setting might produce different design features or examples of how ART is present through being away, extent, fascination, and compatibility. The direct access that the participants of this study had to the nature trail and their ingenuity of building bridges and handrails for accessibility might have skewed their passion for the outdoor environment and the presence of extent in the senior cohousing community. Also, Sanguinetti [26] found that females have a greater connection to nature than males, and within this study, 8 of our 10 participants were female, which might have lead to a slight favoritism of the results.

More studies will need to be completed to analyze the presence of the four categories of ART before more conclusive results are developed. Regardless of the different design feature results, nature remains important to the health and well-being of older adults.

The results of this study could be beneficial to use as a starting point for additional studies further exploring the presence of natural elements in senior cohousing communities and the benefits for the older adult residents. An overall perspective could then enhance the quality of life at senior cohousing communities and possibly other retirement

options for older adults.

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