THESIS

THIRD PLACE: A QUALITATIVE EXAMINATION OF SOCIALIZATION AND
COMMUNITY BUILDING IN CCRCS

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ABSTRACT

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Continuing Care Retirement Communities (CCRCs) continue to be a popular option for senior living. Social activity is invariably tied to improved health trajectories and decreased loneliness but is often challenging for persons who may not have transportation available pointing at designers and architects to create quality social spaces within the CCRC itself. The concept of Oldenburg's third place and the breadth of literature tied to it provides a link between the built environment and network sociology informing this study. This case study utilized a spatial inventory, resident interviews and direct observations to investigate 1) whether CCRCs are utilizing Evidence-based design (EBD), 2) if there are naturally occurring or purpose-build third places internal to the community, and 3) whether these spaces were supporting socialization for the residents. While findings indicated limited use of EBD principals, the use of administrative policy lead to unique social leveling in the CCRC's purpose-built third place.

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CHAPTER I

INTRODUCTION

A Continuing Care Retirement Community (CCRC) is a housing option available to seniors, typically ages 55+ (SeniorLiving.org, 2019). The CCRC model incorporates at least two tiers of care including; Independent Living (IL), Assisted Living (AL), Skilled Nursing (SN), and/or Memory Care (MC) units catering to residents with Alzheimer's-like symptoms (SeniorHomes.com, 2019). Levels of care are determined by how much assistance a resident might need to complete daily tasks such as bathing, toileting and feeding themselves (SeniorHomes.com, 2019). The CCRC model evolved to help seniors age in place, living independently as long as possible. It provides an alternative to nursing homes, based on an acute care (hospital) model (Shin, 2015), and do not accommodate multiple levels of care requirements (Shippee, 2009).

Real-estate research firm Marcus & Millichap's recent report (Murphy, 2019) reminds us that there are now approximately 73 million "baby boomers" who are over the age of 55. CCRCs are the preferred senior housing option (Hill, 2018), and CCRCs better support socialization than adult daycare activities, though both are designed to support seniors who are attempting to age in place (Ayalon & Green, 2013). Seniors have a stronger need for socialization than younger people (Lee, Jang, Lee, Cho, & Park, 2008). Studies have established relationships between increased social activity and a) decreased loneliness (Luo, Hawkley, Waite, & Cacioppo, 2012), b) increased health (Arezzo & Giudici, 2017; Blieszner, 2014), and c) increased quality of life (Park, Chun, Lee, Kim, & Park, 2015) for seniors and those with physical constraints (Jang, Park, Dominguez, & Molinari, 2014).

Third Places in CCRCs

Brawley's (2006) book for creating caring environments has dedicated chapters to dining rooms and "shared living rooms" which are common to most retirement communities and are examples of purpose-built social spaces. Spaces for social activity in CCRCs have been studied previously (Campbell, 2015a; Campbell, 2015b; Williams & Hipp, 2019; Zavotka & Teaford, 1997), including how these social spaces might become "third places" (Oldenburg, 1989) for residents. Third place is a term coined and popularized by Oldenburg (1989) to describe a place that provides a refuge from chaos at work and monotony at home. Third place is an advanced conceptualization of a social space encompassing social network connections, access to information, establishing community norms, and generating place identity (Cabras & Mount, 2017; Sugihara & Evans, 2000; Williams & Hipp, 2019). Limited investigations have focused on third places within CCRCs (Campbell, 2015a; Campbell, 2015b). Campbell's (2015b) study – using descriptors from Oldenburg (1989) – indicated that atmosphere, described as lively, playful, and welcoming, was more important than quality architectural finishes for successful CCRC third places.

Aging in Place

Aging in place is a concept whereby design of the built environment enables a person to live the entire span of years from retirement to death without moving to another house or facility (Jiang, Lou, & Lu, 2018). Initially the aging in place movement aimed at keeping elderly people in their own houses, potentially with modifications to allow for limited mobility (Vasara, 2015). Advances in residential techniques and technologies for aging in place have been appropriated into the CCRC model (Campbell, 2015a; Jiang, Lou, & Lu, 2018). While some CCRCs still segregate apartments based on care levels (Shippee, 2009), these lines have become blurred in

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recent years requiring even IL facilities to support residents with diverse health conditions and abilities (Campbell, 2015a).

Evidence-based Design

Evidence-based design (EBD) developed from the field of medicine (Martin, 2009). The three main categories of EBD fall into 1) studies providing evidence for use, 2) processes informing design decisions, and 3) evaluating the "evidence" found in previous studies (Ulrich, et al., 2008). Given the glut of research supporting socialization for seniors (Arezzo & Giudici, 2017; Lee, Jang, Lee, Cho, & Park, 2008; Luo, Hawkley, Waite, & Cacioppo, 2012; Williams & Hipp, 2019; Zavotka & Teaford, 1997) and the investigations of social spaces for seniors (Campbell, 2014; Campbell, 2015a; Campbell, 2015b) the stage is set to evaluate current design projects for EBD incorporating these findings.

Statement of the Problem

Architects and designers frequently build spaces intended for socialization, and usually include dining rooms and shared family rooms (Brawley, 2006). These spaces, as well as other amenities such as craft rooms and game rooms are regularly featured on websites meant to assist seniors and family members searching for senior housing (SeniorLiving.org, 2019; APlaceForMom.com, 2017). While these spaces are provided by design, there are few studies investigating their ability to support advanced socialization found in the conceptual model of third place (Campbell, 2014, Campbell, 2015a; Campbell, 2015b). Once relocating to a CCRC, opportunities for excursions outside the community grounds are limited (Ayalon & Green, 2012). Evidence-based design principals call for additional investigation of these spaces to ascertain how the spaces can either be improved, or how new facility design could be enhanced based on data.

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Purpose of the Study

This study investigates the intersection of the built environment and social interactions by examining common spaces in CCRCs for attributes constituting the formation of "third place".

Research Questions

RQ1: Are purpose-built social spaces in the CCRC utilizing EBD research findings for supportive design?

RQ2: If third places are present, are they structured by the CCRC (purpose-built) or naturally occurring?

RQ3: Are third place environments (purpose-built and naturally occurring) positively supporting strong and week social ties in the CCRC?

Terms and Definitions

- *Aging in Place:* The ability to remain housed in the same physical location in spite of age-related declines.

- *Alzheimer's Disease:* A chronic neurodegenerative disease commonly characterized by progressively worsening memory problems.

- *Assisted Living:* Senior housing designed to provide basic assistance with daily functions of eating, bathing and/or toileting.

- *Built Environment:* Those environments constructed by humans for a specific use.

- *CCRC:* Continuing Care Retirement Community – providing two or more levels of care within the facility building or campus.

- *Daily Requirements:* Basic physical functions required to live: eating, bathing and toileting.

- *Dementia:* A term referring to cognitive affecting memory, language, and problem-solving.

- *Evidence-Based Design:* A practice started in healthcare design whereby consideration is given to the person who will utilize the building or space and their needs before those of other stakeholders.

- *Independent Living:* Senior housing requiring little or no assistance with daily requirements.

- *Memory Unit:* Senior housing specifically for those with cognitive impairment (e.g. dementia).

- *Nursing Home:* Senior housing for people requiring significant assistance with daily requirements.

- *Quality of Life:* An overarching term encompassing dimensions of physical, emotional, social and material well-being.

- *Skilled Nursing:* Senior housing, usually within a CCRC, designed for residents with significant difficulty with daily requirements.

- *Supportive Design:* A concept whereby a physical space is purposefully built to support persons who will utilize the space.

- *Third Place:* A phenomenon connecting socialization to a physical space which is unique from home or office.

- *Universal Design:* Designing and constructing of spaces to enable use by persons with diverse physical, cognitive and visual acuity.

- *Wayfinding:* The process of orienting and navigating a built environment.

Researcher's Perspective

This research investigation represents a personal mission, which was shaped by my interactions with grandparents and friends in the CCRCs where they resided. When my grandmother Billy Jean passed away in the CCRC apartment she shared with my grandfather, the paramedics had to carry her out of the apartment because the door was not wide enough to accommodate a gurney. This was one of the first and most impactful events that led me to believe that some CCRCs are not designed as well as they could be.

The first CCRC that my paternal grandparents moved into was beautifully designed and furnished but the dining area and café was nearly a quarter mile from their apartment, located in an outlying building. There was a sky-bridge connecting all the buildings in this CCRC, but the ramp inclines and distance was far greater than my grandfather could manage.

Common features that I had direct interaction with in both CCRCs were the dining rooms and cafés. I was struck by 1) the formal nature of most of these spaces, 2) their beautiful interior designs and architectural details and 3) their disuse outside of mealtimes. One of the facilities had a purpose-built café complete with beautiful carved oak bar which could be rented for private events or used for overflow during special dinner events in the adjacent dining hall. This charming café was rarely used and might have been an ideal location for a coffee shop or a pub-feeling kind of space had it been openly available to residents without a reservation and had drinks stocked in the bar, or a helpful staff person who could serve drinks. I did observe casual conversations and gatherings in mailrooms which could be the beginnings of third place, but because there was no seating and the noticeable rush of residents coming and going specifically to collect mail, these spaces too fell short of a functioning third place. My observations suggest that while social spaces are plentiful in CCRCs, there may be missed opportunities for these

facilities to foster greater socialization and community building through third places which

informed my selection of this topic for my thesis.

Delimitations

Many retirement communities exist in the Midwest, but access was a determining factor.

Early stages of recruitment via electronic methods were unsuccessful. In addition, it was

important to have a facility with a main building housing social areas. Many new CCRC

developments specialize in bungalows and a central clubhouse, but these facilities usually cater

to seniors who are still independently mobile and driving so access to external social areas is not

limited in the same way the study was designed to investigate.

CHAPTER II

LITERATURE REVIEW

Professionals from diverse disciplines, including architects and designers, invest a great deal of thought and care in the design of public and support spaces to promote socialization and community building, particularly for seniors (Cabras & Mount, 2017; Campbell, 2015a; Campbell, 2015b; Harbinger, 2015; Oldenburg, 1989; Rosenbaum, Sweeney, & Windhorst, 2009; Williams & Hipp, 2019). Evidence-based design (EBD) and research in healthcare environments, beginning in the early 1980s, has supported peer reviewed research evidence integrated into the design process as a foundation for effective and innovative management of the physical environment (Chong, Brandt, & Martin, 2010). EBD has encompassed environments dealing with people's health and wellness (e.g., principals of supportive design, universal design, and third place phenomena) and is poised to inform non-healthcare environments (Joseph, 2006; Martin C. S., 2009). These areas of interest create the foundation to examine issues surrounding a specific residential healthcare environment – Continuing Care Retirement Communities (CCRCs).

The move to a retirement community often creates anxieties; it is a transition representing loss of home and possessions, loss of independence, and the reality of financial needs offering no relocation options once a move is complete (Ayalon & Green, 2012; Glass, 2014; Shin, 2015). Shin (2015) suggested these facilities have developed a caste-like system in which independent living residents avoid areas serving higher care needs in the facility, often out of fear they will soon require greater levels of care. Facilities that encourage socialization can help mitigate these caste-like systems and avoid the fear associated with the declines synonymous with aging (Shin,

2015; Shippee, 2009). Recent studies (Jang, Park, Dominguez, & Molinari, 2014; Park, Chun, Lee, Kim, & Park, 2015) continue to support the evidentiary tie between socialization and quality of life for the elderly. Thus, the imperative that CCRC social spaces adequately support the seniors who live there is clear.

Housing for Seniors

Housing for seniors is often developed using what was considered state-of-the-art medical care at the time of construction (Shin, 2015). As medical care has advanced, so have theories guiding the design of housing for older individuals (Friedman, Keane, & Resick, 2007). Early sanitariums and poorhouses integrated the feeble elderly with the mentally ill and kept these individuals largely outside the public eye (Friedman, Keane, & Resick, 2007; Shin, 2015). Elder care evolved into nursing homes as an offshoot of the acute care hospital model (Joseph, 2006), and left seniors living in shared rooms off long hallways with centralized nurse stations. Patients sometimes suffered from breakdowns in the quality of care in the nursing home model (Eden Alternative Foundation, n.d.), including patients being tied to beds, left unattended for long periods of time, and little or no social interaction (Schwarz, 1996; Schwarz, 1997; Shin, 2015). Today, the nursing home model caters to those elderly individuals requiring greater intensities of medical assistance than an in-home model can provide (Schwarz B. , 1996) and care for older citizens has developed into a variety of models, including communities offering environments for retirees.

Continuing Care Retirement Communities (CCRCs)

CCRCs have evolved as an overwhelming cohort of "baby boomers" approach retirement age, and for a small proportion demonstrate increased affluence from earlier generations (Rowe & Kahn, 1997). As of 2015, there were 47.8 million seniors over the age of 65 in the United

States. That number is projected to balloon to 98.2 million by 2060, and of that number 19.7 million will be over 85years old (U.S. Department of Commerce, 2017). Study findings demonstrate favorable trajectories for aging in place (Dickinson, 2004; Joseph, 2006; Rosenbaum, Sweeney, & Windhorst, 2009) utilizing physical and technological interventions that enable the person to live in the same place for as long as possible. CCRC facilities anticipate the progression of needs moving into old age, including mental and physical complications that can be associated with the aging process. Many of these facilities provide at least two of four levels of care: Independent Living (IL), Assisted Living (AL), Skilled Nursing (SN), and Memory Care (MC) units for patients with dementia-like conditions (Kane & Cutler, 2009; Keen, 1989; Wacker & Roberto, 2013; Wang & Kuo, 2006). Activities of daily living (ADL), include feeding, dressing, and toileting, are used to asses an individual's required level of care (Shin, 2015). The path of residency in CCRC facilities begins with residents functioning independently placed into Independent Living (Brownie & Horstmanshof, 2012). As the inevitable decline of body and cognitive ability occurs, residents are accommodated by the remaining three levels of care.

CCRC Alternatives

There are other models of housing for the elderly catching on faster overseas than in the U.S. (Glass, 2014; Sloan, & Brown, 2011; Winkler, Farnworth), and are moving away from sprawling CCRCs to a small-scale focused approach (Schwarz, Chaudhury, & Tofle, 2004). One of these concepts is known as the Green House (GH). The GH model, characterized by small, homelike residences catering to special needs (e.g. Alzheimer's, dementia, brain injury) springs from Thomas' work on the Eden Alternative (EA) (Thomas, 1994). The EA paradigm (Eden Alternative Foundation, n.d.) stresses the importance of the outdoors, children, and even pets as

part of elder care (Coleman, et al., 2002; Rabig, Thomas, Kane, Cutler, & McAlilly, 2006). The caregiver helps prepare meals and can perform basic nurse requirements with detailed care from doctors and therapists brought into the residence. The GH concept, although not referred to by name, is one direction the Veterans Administration (VA) has taken for providing additional assistance for those with more extensive nursing requirements (e.g. for housing alternations, Community Residential Care (CRC), adult foster/family homes) (United States Department of Veteran Affairs, n.d.). Dickinson's (2004) study and review of senior housing was particularly condemning of the antiquated nursing home concept; its central nursing station, radiating patient corridors, and rooms that have multiple per-room residents are no longer desirable in any circumstance.

Community Building and Socialization

Oldenberg's (1989) instrumental book *The Great Good Place* signals the importance of "third places" and their critical role in socialization leading to established sense of place. With "first place" as "home" and "second place" as "work", a third place is where a person goes to escape the other two and typically to socialize. CCRCs are designed with dining rooms, cafes, and other areas designed to give residents places to congregate and socialize (Zavotka & Teaford, 1997) with the hopes these spaces will evolve into third places. Campbell (2015a) found that success of these third places relied heavily on providing light food, positive interactions with staff, homelike finishes and an absence of rush - meaning that guests could come and go without being on a set schedule. Woldoff, Lozzi, and Dilks (2013) attempt to validate the Oldenburg model in a modern coffee house setting. They found that much of what facilitated social banter was dependent on positive interactions with the staff. They note coffee shops with warm, welcoming baristas had a more engaged social atmosphere and dramatically fewer people using

electronic devices, therefore with greater ability to socialize with others. Proximity of a space for socialization must also be centralized within the facility to be utilized by those with mobility issues (Pinet, 1999). A great deal of time has been put into adding to the third place vernacular by other disciplines, such as gaming (Wimmer, 2013) and hospitality (Sandiford, 2019). Several have sought to reinforce specifically outlined characteristics of third place (Sleeman, 2012). Sandiford (2019) points out an inherent dichotomy that some businesses encourage customers to lazily engage other customers (e.g. Starbucks) whereas other businesses actively encourage customers to depart once their transaction is complete. There appears to be discussion regarding the user's impetus for entering a third place being primarily a commercial purpose (i.e. shopping) versus fulfilling a need to socialize which might have the bonus of something to purchase. Laypersons often equate third place to the "Cheers" TV show, but in this discussion, one might ask if Norm comes for the camaraderie or for the beer. In CCRCs, if someone comes down to the dining hall an hour before dinner to socialize, is the dining room a third place despite its (usually) having set hours of operation and stratified social structure (servers and customers) which was frowned upon by Oldenberg?

Person-Environment Relationships Supporting Resident Well-being

Several key issues surfaced supporting the person-centered and physical environment approaches to successful living environments in retirement communities engaging in positive socialization and community building. It is difficult to separate the social from the physical attributes necessary to sustain well-being in CCRCs. First, the literature is examined from a social perspective discussing place attachment and social networks. Following a review of the literature findings for socialization, the physical environment is discussed.

Place attachment

The degree to which residents feel at home in their environments – and readily identify a place as home to friends and family – creates an attachment to the environment (Proshansky, 1983). Design researchers have found that places need to feel "homelike" to foster place attachment (Shin, 2015; Wang & Kuo, 2006). Studies differ on exactly how to achieve this perception. Some described how "homelike" is achieved by the inclusion and placement of artwork (Schweitzer, Gilpin, & Frampton, 2004; Wood-Nartker, Guerin, & Beuschel, 2014). Others claimed finishes and furnishings, such as selecting carpet over vinyl flooring and increased use of wood, be it flooring or furniture create a homelike feel (Schwarz, Chaudhury, & Tofle, 2004; Brawley, 2006; Zavotka & Teaford, 1997). The ability to place one's own possessions, such as family heirloom furniture or collections on display, is also found to promote increased place attachment (Boschetti, 1995; Eshelman & Evans, 2002; Lundgren, 2000; Shin, 2015). From the breadth of studies conducted on this topic, no singular approach appears sufficient; since each person individually defines "home," approaches designed to achieve that feeling will also be diverse.

Social scientists have offered diverse perspectives regarding place attachment, conceiving place as *networks* (Hay, 1998), as *relationships* (Sampson, 1988), as *intimacy* (Wellman, 1979) or even as *embodiments of wisdom* (Basso & Feld, 1996). Gieryn (2000) observed "place-sensitive sociology do[es] not add up to a neat propositional inventory of empirical findings about the social causes and effects of place" (p. 482). Gieryn's review of literature clearly articulates the social science definition of place as dependent on context and other factors. An understanding of place identity is critical to creating and sustaining identity of self (Dixon & Durrheim, 2000; Korpela, 1989), especially in CCRCs (Cuba, 1993). Disruptions to place

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identity impact personal identity negatively (Brown & Perkins, 1992) and designers of the physical environment should endeavor to minimize such disruptions.

Interpersonal Ties

Granovetter (1973) defined ties as "the strength of a [interpersonal] tie… (probably linear) combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services … characterize[ing] the tie" (p.1361). Interpersonal ties are one measure that Social Network Analysis (SNA) uses to analyze communities, define relationships, and estimate political capitol (Giuffre, 2013). This theory holds that while strong ties (e.g. family, friends) are important, weak ties (e.g. acquaintances) are also often important bridges between different social groups or networks (Rainie & Wellman, 2012) and can be formed independently of social stigma or bypassing perceived gatekeepers (Granovetter, 1973; Granovetter, 1984). At least one study (Campbell, 2015a) found that CCRCs foster better connections and social networks than those found in adult-daycare environments.

Actor-Network Theory

Actor-Network Theory **(**ANT) is a "theory that maps the social relations between people, objects, and ideas, treating them all as agentic entities that form a broad network" (Cerulo, 2009, p. 533). ANT is characterized by viewing both the "actor" and the "network" on a level plane where they interact and affect each other. Callon (1986) identifies three principles of ANT which level the plane of study; 1) Agnosticism: abandoning a priori assumptions, 2) Generalized Symmetry: human and nonhuman actants should be studied with identical methods, and 3) Free Association: abandons distinctions between social and natural. Actors, which may be human or nonhuman (see also "material semiotics" (Law, 2009)) impact upon and likewise create the network. This is not to say that human and nonhuman actants are treated equally, rather that

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neither is endowed with any a priori relevance (Dankert, 2012). The network in these cases is not concerned with tight definitions such as macro or micro, long or short, (Tabak, 2015) but instead refers to a structure of interactions by the actors (also called actants) within and in relation to the network. In fact, Tabak (2015) with the support of Latour's (1999) own review of ANT suggests that the hyphenated name is accurate based on the codependent relationship between actor and network. One might view a CCRC as the network, which as a physical building encompasses its citizens, but could also be considered an actant which impacts the citizens with set schedules and access to resources both internal to the CCRC, and externally in the form of shopping trips and activities. The CCRC would exist in name only if not for its citizens who are also capable of impacting the structure of the CCRC (e.g. personalization of their unit, utilization of a space, input to managerial decisions) and are made up of their technical and relational ties within and external to the CCRC. ANT, however, is not so much a theory as a methodological framework (Dankert, 2012) whereby data are collected free from the normal dichotomies that affect many other social theories. Kilduff & Tsai (2003) performed a detailed analysis of the academic theories that have been borrowed by ANT and created within the ANT field, but contends that ANT is only a "theory" when the underpinning theories are used in its analysis.

Social Capital

Social networks exist everywhere; often centrality to a network can be observed through social capital. Social capital "refers to features of social organization such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit" (OECD Growth Project, 2001, p. 67) and it "provides the glue which facilitates co-operation, exchange and innovation (OECD Growth Project, 2001, p. 59)." It has been shown to increase sense of well-being and satisfaction (O'Doherty, French, Steptoe, & Kee, 2017) as well as perceived better

health (Fiorillo & Sabatini, 2015). Although there is discussion as to whether some of these attributes can also be attributed to personality (O'Doherty, French, Steptoe, & Kee, 2017), and whether the tie to higher perceived health is in fact due to healthier people being able to participate in social activities, thereby missing a sample group representing unhealthy people who would otherwise be participating in social activities (Fiorillo & Sabatini, 2015). Within CCRCs it is also important to note findings that identify dissimilar networks that may be family-centered more than friendly associations within the community (Jiang, Lou, & Lu, 2018).

Supportive Design

Ulrich's (1984) seminal article started a revolution in healthcare design by revealing evidence of an accepted belief: sight lines to the out-of-doors improved recovery trajectories for patients in a hospital. A later article (1991) gave birth to his "Supportive Design Theory" comprised of three principles, still practiced in healthcare design today. These principles include 1) sense of control, 2) social support, and 3) access to positive distractions (Ulrich R. S., 1991). These principals might be achieved as follows:

a) Sense of Control can be achieved through Universal Design principles;

b) Social Support can be achieved by positive interactions with staff, other residents, and family; and

c) Positive Distractions can be achieved through careful design considerations in planning and spatial functionality.

The creation of third places, a common fixture in most CCRCs, has potential to address all three of Ulrich's principles. However, little evidence is available in the empirical literature examining the success of third place spaces to encourage socialization and community building.

Sense of Control and Universal Design

Within CCRC models, significant consideration is given to varied physical and cognitive abilities of the end-user (Pinet, 1999; Shin, 2015; Zavotka & Teaford, 1997). Universal Design (UD), a term coined by Mace (1988), is an approach to the built environment as usable/functional for the greatest diversity of users possible, inclusive of physical parameters as well as visual and cognitive limitations (Jonsson, Ostlund, Warell, & Hornyansky, 2014; Sherman & Sherman, 2012). UD has been in use and aligned closely with the Americans with Disabilities Act (ADA, 1977; Jones, 2014; Sherman & Sherman, 2012). ADA legislation was required in response to built environments being discriminatory by design (Joines, 2009). Lack of elevators and ramps meant only the highest functioning individuals could utilize or even access a space (Imrie, 2012; Lid, 2014). UD expanded the parameters of ADA, for example, by suggesting high-contrast signage (Wood-Nartker, Guerin, & Beuschel, 2014), or wayfinding, be designed into floor surfaces and paint color selection (Joseph, 2006).

Evidence-Based Design and Therapeutic Design

"The continuum of evidence, weak and strong, surrounds us" (Chong, Brandt, & Martin, 2010, p. 2). According to the Center for Health Design (CHD) (2019) website "EBD is the process of basing decisions about the built environment on credible research to achieve the best possible outcomes." Much of the EBD writings can be categorized into 1) providing evidence to others based on research (Ulrich, et al., 2008), 2) discussing EBD as a process to inform design decisions, or 3) discovering and evaluating "evidence". For example, Chong, Brandt, and Martin's (2010) book aimed at creating an overall framework of EBD where "evidence" is not just gleaned from research articles and figures, but can also be created via process of hypothesis, model, test, and revise using Innovation Theory. Others, such as Ulrich et al. (2008) sought to

summarize and create a readily accessible resource of evidence to inform EBD. CHD (2019) is conceptually useful for its identifying EBD as a research life cycle including eight steps: 1) define goals, 2) find relevant evidence, 3) critically evaluate evidence, 4) create evidence-based design concepts, 5) develop hypothesis, 6) collect baseline performance measures, 7) monitor implementation of design and construction, and 8) measure post-occupancy performance.

Before diving into EBD, it is important to note that EBD was inspired by the medical process of Evidence-Based Medicine (Martin, 2009) and some articles regarding EBD are highly scientific in nature. EBD has encountered significant pushback by the design community (Chong, Brandt, & Martin, 2010). InformeDesign, a website designed to be a repository of evidence-based design results for public use, was recently closed due to lack of funding (Martin & Guerin, 2019) perhaps illustrating that EBD is not finding traction within the design community.

Means to Measure "Good" CCRC Design

When developing "good" design of CCRCs for an aging population, there are several considerations with potentially contradictory design aesthetics. Flooring should not be limited to hard surfaces (Brawley, 2006), but carpet should be low pile and have low contrast and/or small patterns to avoid falls (Perritt, McCune, & McCune, 2005). Light levels must be higher than for other buildings, but must avoid glare and harsh shadows (Brawley, 2009). Institutional finishes must be avoided, but finish selections must wear well or the building may be seen as run-down (Brawley, 2006). Hallways must not have monotonous repetition, but also not complicate effortless wayfinding by using too many colors or patterns (van Oel & Boer-Lootens, 2015).

Lighting. Perhaps the most critical design feature in retirement communities is attention to lighting design (Brawley, 2009). The amount of lighting (footcandles or lux) is only one

aspect of quality lighting design but must also include considerations for 1) ceiling and wall finish, 2) brightness balance eliminating glare and shadow, 3) light reflectance, and 4) light color (Color Rendering Index – CRI, expressed as a number between 1-100 where 100 is equivalent to daylight) (Brawley, 2009). Cool colors, often produced by older fluorescent lights, can wash out skin tones and was found to have a negative effect on behaviors and circadian rhythms for persons with dementia (van Hoof, Schoutens, & Aarts, 2009). Yellowing of the cornea and eye diseases common to the elderly increase the amount of light required for normal tasks by as much as three times that of a younger individual (Brawley, 2006). Sleep, creation of melatonin, and other physiological cycles are controlled by the process of circadian rhythm, and is normally set by the natural rising and setting of the sun (Wright, et al., 2013). For seniors, this rhythm is often complicated as the aged pupil becomes smaller allowing less light to enter the eye (Farage, Miller, Ajayi, & Hutchins, 2012). Circadian lighting maintains that there must be exposure to both bright light — 1000+ lux more than ambient (Brawley, 2009) — darkness in the evening, and recommends warmer color light as less disruptive to sleep patterns (Brawley, 2006). Persons experience Alzheimer's symptoms are particularly susceptible to sleep disruptions (Miu & Szeto, 2012). Importantly, daylighting is required for 1) exposure to blue wavelengths supporting circadian rhythm, and 2) exposure to ultraviolet rays stimulating vitamin D production (Brawley, 2006; Durvasula, et al., 2010) and even periods as short as one hour in the sun can improve sleep patterns (Corbett, Middleton, & Arendt, 2012). Uniform lighting is also crucial in areas like hallways to avoid falls (Brawley, 2009). Shadowed hallways have also been shown to increase agitation in patients with dementia (Brawley, 2009).

Flooring. Carpet with dramatic contrast and large-scale patterns may lead to falls (Perritt, McCune, & McCune, 2005). Some persons with visual impairments may perceive high contrasts

of light and dark flooring as voids or changes in floor height, causing instability (Perritt, McCune, & McCune, 2005). Modern, low-pile commercial and hospitality carpet is suitable for use in seniors' environments and can assist with noise levels by muffling foot traffic and preventing table conversations from adding to ambient noise levels (Brawley, 2006; Garre-Olmo, et al, 2012). Brawley (2006) reviewed most common types of flooring options and concluded that carpet is preferable in most areas but that vinyl flooring/vinyl composition tile (VCT), wood flooring, and tile flooring may be appropriate in water prone areas and with limited use in other areas but reminds designers to be cognizant of high polished surfaces causing glare and seams found with vinyl options may not be ideal for maintenance. Tile with distinct grout lines should be avoided as the grout-lines can create confusing patterns for people with dementia, who tend to wander (Passini, Pigot, Rainville, & Tetreault, 2000).

Color. Color and lighting share ties, in that in order to perceive color, one also must have adequate light entering the eye. Yellowing of the eye often occurs with age and can cause colors to be perceived differently to seniors than it would appear to a younger person (e.g. purple becomes brown) (Brawley, 2009). Similarly, color brightness and purity are distorted creating color combinations favored by seniors but might appear garish to younger persons (Farage, Miller, Ajayi, & Hutchins, 2012). Contrast between colors also suffers distortion with age making signage decisions complicated (Arditi & Knoblauch, 2005). Seniors with dementia favor white color schemes with warm colors being secondary (van Oel & Boer-Lootens, 2015). However, designers should consider a Zen, or low stimulation mindset when considering white color schemes which would include white, black, some browns and grays (Call & Jantzen, 2012; van Oel & Boer-Lootens, 2015). The Coalition for Healthcare Environments Research (Tofle, Schwarz, Yoon, Max-Royale, & Des, 2004), in reviewing the available literature, found vague,

inconsistent, and often contradictory findings regarding color in healthcare settings, including old assumptions about colors tied to specific behaviors such as red making one hungry or yellow making one excited. Brawley (2006) noted that these findings are favorable in that they do not put constraints on the designer or senior searching for paint colors, but negatively in that they also fail to provide guidance.

Furniture. Seniors may have furniture spanning from antiques to contemporary furniture, but generally do prefer wood accents for aesthetics and equate wood with higher economic status (Bafisiak, Klos, Krzysztof, & Maciej, 2014). Seating for seniors requires specific considerations. Kamperidou (2017) found that soft seating, like club chairs, are constructed with seat pans that are too narrow for some seniors. One must also consider that chairs with arms are required for most seniors ingress and egress (Bafisiak, Klos, Krzysztof, & Maciej, 2014), and thus must be robust enough to support the weight of an individual (Brawley, 2001). A higher seat with recessed foot access below the seat is also preferred for ingress/egress (Simek, 2013). Castors on dining chairs should not add to ambient noise (Jonsson, Ostlund, Warell, & Hornyansky, 2014) and are preferred for increased mobility, but can also be dangerous. In some communities, castors were placed only on the front two legs of a dining chair, which assists in moving up to the table but does not roll out from underneath the resident during ingress (Brawley, 2006). Seniors often utilize loose pillows to adjust fit on soft seating, particularly for lumbar support (Jonsson, Ostlund, Warell, & Hornyansky, 2014).

Wayfinding. Interior design and interior architecture of housing for seniors play a role in wayfinding. Wayfinding for seniors is a series of steps in progression from A to B to C instead of an overall plan that begins at A and ends at C (Gibson, MacLean, Borrie, & Geiger, 2004). Variations in colors, finishes and even specific design elements, such as a unique clock, can

serve as reference points for seniors (Marquardt & Schmieg, 2009). Long corridors with repeated architectural details and finishes can confuse seniors (van Oel & Boer-Lootens, 2015). "Collector spaces" in the form of seating in long hallways, or conversation niches have been found to support spontaneous conversations and may also be used for wayfinding (Burzynska & Malinin, 2017). For patients with dementia, design of hallways is particularly important, finding that intersections can be difficult to negotiate; square configurations are best, with H and L configurations also being acceptable (Passini, Pigot, Rainville, & Tetreault, 2000).

Conceptual Framework

No one questions the benefits of socialization for seniors. The prevalence of third place in the literature, and the breadth of fields investigating the phenomenon is evidence of the topic's importance. Investigating third place as an optimal resource for socialization in CCRCs is not without precedent (Campbell, 2014; Campbell, 2015b). Figure 1 is a conceptual model linking attributes of design with social attributes found in third places and supported by the literature that will inform this study.
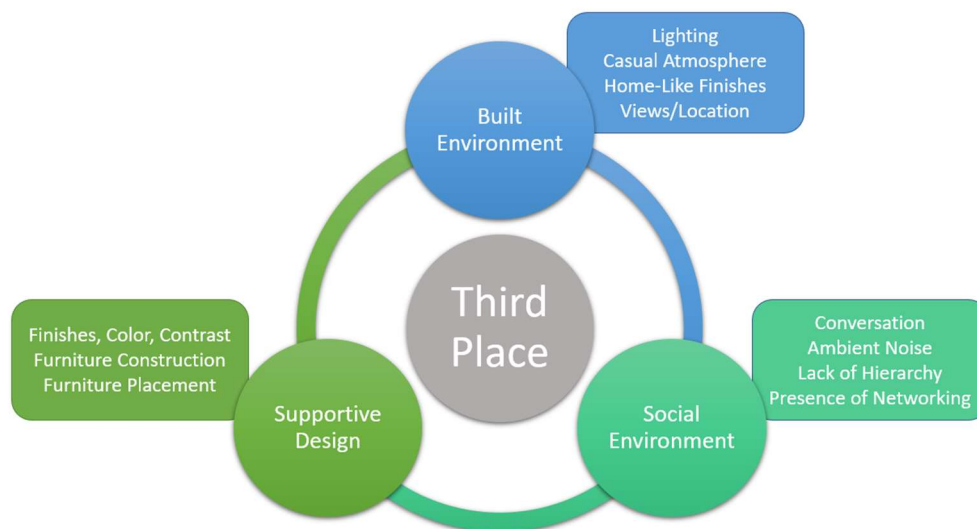

Figure 1. Conceptual Model

CHAPTER III

RESEARCH DESIGN AND METHODOLOGY

This qualitative case study examined impacts of interior design features and qualities on

socialization and community building as attributes of third place. The case study method was

selected because it is a means of investigating a "bounded" system (Glesne, 2011). "[A case]

occurs in a specified social and physical setting (Miles, Huberman, & Saldana, 2014, p. 30)."

The specific focus considered common areas (e.g. dining rooms, game rooms, etc.) and whether

these spaces function as viable third places for a CCRC. This investigation included a spatial

inventory analysis of specific environments (Appendix A), observations and behavior mapping

(Appendix B), as well as semi-structured interviews (Appendix D). These data were collected to

answer the research question:

> RQ1: Are purpose-built social spaces in the CCRC utilizing EBD research findings for
>
> supportive design?
>
> RQ2: If third places are present, are they structured by the CCRC (purpose-built) or
>
> naturally occurring?
>
> RQ3: Are third place environments (purpose-built and naturally occurring) positively
>
> supporting strong and week social ties in the CCRC?

Case Selection

Initial email requests were sent via facility websites to a wide array of CCRCs in northern

and central Colorado to gage willingness to participate in an interior design study of their

facility. When these emails garnered no responses, the research team identified a single CCRC in

northern Colorado that met desired criteria for this study: a CCRC consisting of one primary

building inclusive of at least one care level (IL and/or AL), residents who are 55+ without severe

cognitive impairment, receptive staff, and included at least one purpose-built space intended for socialization (i.e., dining room). For the purpose of this study, the case is bounded by the facility architecture and includes resident and employee occupants. After an initial meeting with the Director of Enrichment (DE) to discuss the project, the facility administration indicated willingness to participate in the study. Their interest in the study was motivated, in part, because they are currently renovating the community's building as part of an on-going commitment to maintaining a top tier facility. Renovations addressed social areas, specifically the lobby, dining room, hallways and a living room overlooking the IL dining room, which happened to align with the target areas of the study. The facility management hoped that findings would validate their efforts on residents' behalf. A follow-up meeting was conducted with the community's Activity Committee, which included seven residents as well as the DE. In this meeting, a summary presentation was given (Appendix E) identifying the researchers, study purpose, data collection process, and key information sought by the study. The research team was receptive at this stage to community preference regarding interviews, focus groups or surveys to better understand facility use. Residents indicated a preference for interviews and/or focus groups and a semi-structured interview schedule was created. Facility management representatives gave approval for the study by returning a signed letter of support (Appendix G: Letter of Facility Support and Participation); decisions were granted by appropriate residence board representative(s).

Case Description

The original building housing what is now the CCRC for this case study has a diverse history; it was originally constructed as a hospital that opened in 1951, then served as a school administration building and was finally converted into a retirement community which opened its doors in late 2007. At present, the community includes 44 apartments for IL housed in the main

building. An additional wing was added for residents needing additional care providing 10 secured memory care apartments, 28 AL apartments and opened in 2011. All residents are over the age of 55. The total building area is approximately 100,000 square feet. Amenities at the facility include a salon, movie theater, game room, and fitness center. Two meals are served in the IL dining room daily with options to have meals delivered to the resident's apartment. The AL dining room provides three meals daily and residents who are "Independent Plus" (residents given more housekeeping assistance providing greater oversight by staff, but additional ADL support not required) are allowed to select either dining room for breakfast and lunch, but dinner service is only provided in the AL dining room. A juice bar adjacent to the IL dining room was adapted to be a hostess station during the remodel initiatives as the management company wished to focus on "fine dining" utilizing waitstaff in lieu of a self-service model. The recently redesigned foyer includes a reception station swathed in white marble and warm toned woods with sculptured drywall backdrop. Resident units vary in size from just under 500 square feet to just over 1400 square feet for IL. The CCRC is centrally located within a small city in northern Colorado (population approximately 77,000) and is primarily surrounded by light commercial (medical) and residential housing. There are no retail options, restaurants or civic buildings within a 1-mile radius of the facility making the opportunities for socialization within the facility vital.

Data Collection and Instrumentation

Data were collected from three primary sources; a spatial inventory, direct (non-participant) observations, and semi-structured interviews. An overview of the research process is illustrated in Figure 2.
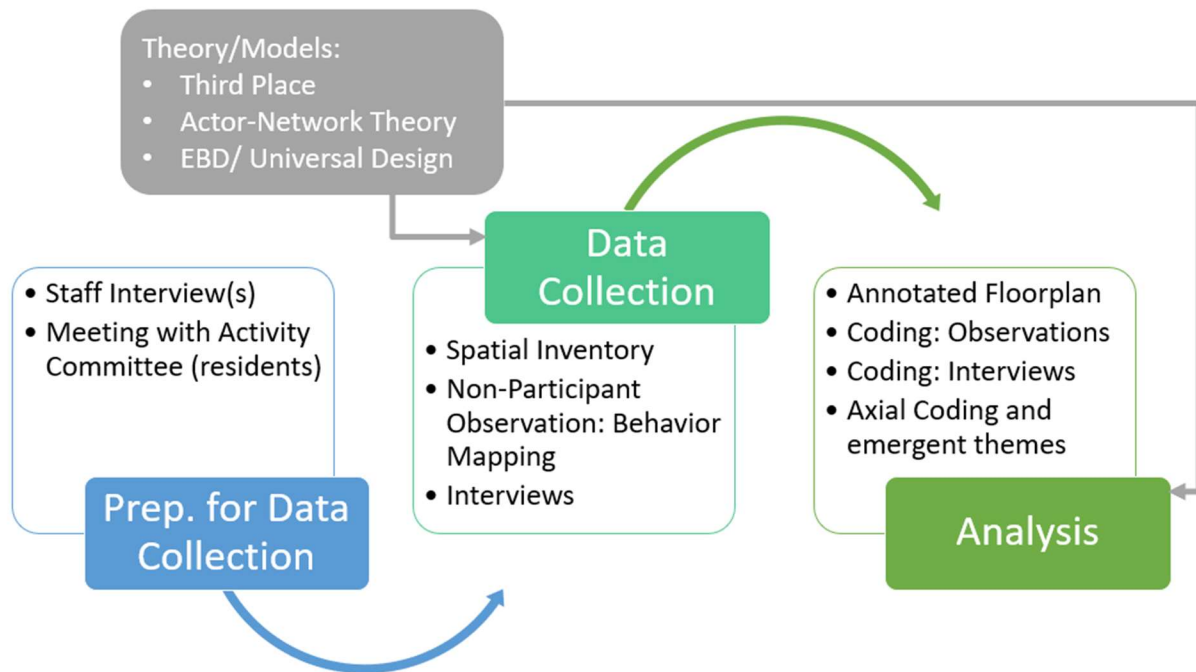
Figure 2. Research process.

Spatial Inventory

The arrangement of spaces and critical spatial relationships are unique to each CCRC. Spatial inventories provide a detailed account of each physical setting (Creswell, 2007). For each place identified as a third place opportunity, digital photographs with descriptions of elements and their condition were recorded. The spatial inventories focused specifically on finishes and furnishings, lighting, and the physical conditions of wear. These inventories compared spatial character and quality, patterns of use, and allowed for cross-referencing locations and types of social interaction.

The spatial inventory of the CCRC (Appendix A) identified areas potentially fostering resident socialization and community building: third places. The inventory also familiarized the researcher with the facility and served as a medium to introduce the researcher to residents on an

informal level. Data were also summarized into an annotated floor plan for use during behavior mapping observations.

Annotated Floor Plans

Annotated floor plans were originally intended to bridge the gap between persons who are more inclined to visual presentation of information and those who prefer written sources of information (Sommer & Sommer, 1991). Behavior-annotated floor plans include information regarding finishes or room designations from the spatial inventory to also indicate what behaviors are observed in a given area (Zeisel, 1981). Smaglik (1998) suggested that using annotated plans and adding behavioral observations during the design process became a method of discovery, prompting questions while also providing artifacts for future reflection. By adding spatial inventory notes to an annotated plan prior to behavior mapping, the floor plan itself becomes a method for recalling previous findings while allowing for additional dimension through behavioral observations.

Observation and Behavior Mapping

"Human life… cannot be shielded from external interference and studied in a vacuum…" (Rabinow & Sullivan, 1979, p. 6). ANT allows us to simultaneously consider both human and non-human actors in relation to observable networks (Dankert, 2012). The researcher combined mapping of individuals in a space to track activity with a key for specific behaviors (Sommer & Sommer, 1991). Triangulation of observations supports validation (Glesne, 2011). Observations were conducted in four primary locations; Lobby, TV Meeting Room, Second Living Room (SLR), and South Activity Room (SAR). Additional observation locations included the IL Dining Room, Billiards, Library, and Salon, which could also be simultaneously observed from the primary-objective areas. Observations were normally carried out in 20-minute intervals at

two or more areas of interest and between the hours of 09:00 and 18:00, which are considered the community's hours of operation. Following a scheduled observation time, the researcher reviewed the activity maps and created field notes linking place to activity and behavior. Special observations were also conducted to observe one recurring social activity (Social Hour) and one special event (Valentine's Day Dinner) as well as one entire Breakfast service in IL dining. These special observations were informed by resident interviews during data collection. Qualitative methods of inquiry, for example through observing activities and mapping, often reveal deeper meanings and patterns not developed through quantitative measures (Glesne, 2011; Patton, 2002). Corsaro (1981) found recording details in field notes solidified observation activities; field note descriptions were reviewed for patterns of behavior, followed by summaries using thick, rich descriptions - a cornerstone of qualitative research (Emerson, Fretz, & Shaw, 2011).

Behavior mapping established specific behaviors observed in the potential third place areas of the CCRCs and assisted in identifying the best locations used for socialization to observe interactions among residents. Persons with visual preferences regarding information and those with preferences for the written word can both readily glean data from a behaviorally-annotated floor plan that bridges these two mindsets (Zeisel, 1981).

Semi-Structured Interview Schedule

Directed by the CCRC Activities Committee, signup sheets (Appendix I) were made and posted on the community bulletin board. Face-to-face interviews occurred both via signup sheet and by intercepting an individual following observation of a third place space (Appendix G: Intercept Introduction to Participant). Ayalon and Greed (2016) found that to expand conversations beyond "yes" and "no" answers requires beginning interviews with generic

questions before moving to focused questions. While residents of IL/AL may be faced with various declines associated with aging, this community's MC being secured from the rest of the facility gave reassurance that most residents would be able to give informed consent and have enough cognitive ability to participate in the interview process. Interviews eliminated the potential for confusion with the meaning of measures or the need for technological knowledge to respond to electronic prompts.

Questions collected information about demographic and personal history, relationships with staff, areas known for social activity, and social networks. An initial inventory of questions was created and narrowed down to 16 questions with the assistance of the research team and tested with a senior who was not related to the study. The author also used a single interviewer to reduce interviewer bias. There were 5 demographic questions and 11 formal questions regarding social activities, friendships and preferences.

Example: What do you think of the decoration/style in the common areas of this retirement community?

Interview Population and Sample Selection

Early conversations and meetings with staff members allowed the researcher to utilize the community bulletin board to recruit participants (Appendix I). The requested signup sheet was never utilized by residents despite two revisions, announcement at council meetings, and "table signs" placed by CCRC. Feedback from staff and intercepted residents indicated that success might be garnered by "making yourself available" for set periods of time so residents didn't feel pressured to "sign up". This was completed over the period of eight consecutive business days where the interviewer would sit at an unobtrusive table in the Second Living Room [SLR] between the hours of 09:00-12:00. Resident word-of-mouth evolved as the primary recruitment

tool. As intercept interviews and a signup sheet would result in bias favoring residents who are regularly participating in activities outside their units, snowball sampling (Appendix H) was also used while interviewing residents to find additional participants who might not be as likely to participate in social functions. Residents were reluctant to provide other names but insisted that they would "tell their friends". Nonparticipant observations (Appendix B) were also conducted at design-designated potential third places (i.e., dining room, café, mailroom). Additional observation locations were identified by questioning staff about where citizens tend to congregate. Similar data and observations were used to create an annotated floor plan (Appendix C).

Seniors represent a sensitive population and when an individual was identified for interview, care was taken to explain the study consent and create an understanding for the participant regarding the study; each participant was asked to sign an informed consent letter (Appendix J). The CCRC community is primarily identified as IL with some AL residents. A separate, and relatively new addition to the community is home to a "Memory Unit", but that is segregated from the IL/AL sections for safety. As such, assumptions were that any resident observed in the IL/AL social areas were cognitively functioning at a satisfactory level to give informed consent to participate. Interviewees were also confirmed with staff as being able to provide informed consent.

Approach to Data Analysis

Miles, Huberman, and Saldana (2014) remind us that data analysis should be an ongoing process through the data collection phase. In this way, analysis was conducted at three points in the data collection process: after spatial inventory to develop an annotated floor plan to inform observations, after direct observations to inform interview questions, and after interviews. The

initial coding of field notes from direct observations was guided by a priori codes (informed by the conceptual framework) and also involved open coding to define new codes. Reflecting on the observation and transcription, memo writing — common to qualitative data analysis (Miles, Huberman, & Saldana, 2014; Glesne, 2011) — was performed to better inform subsequent observation periods. Codes generated during the initial analysis of the observation phase of data collection were then used as a priori coding for the next phase of data collection: interviews. Interviews were digitally recorded with permission from the participant and transcribed within 24 hours so that incidental data and observations by the researcher could also be included. Additional open coding was performed as necessary and constant review of coding frequencies began to form themes in the data.

Once all three phases of data collection were completed, codes from the observation phase and the interview phase were reviewed together to investigate emerging themes via axial coding. Creating a thematic map allowed the researcher to filter out irrelevant observations. The social attributes integrated with behavioral mapping were correlated with the spatial inventory listing spatial typologies functioning as third places. NVIVO software was used to identify frequencies of attribute connections to space and to build the conceptual model that could be compared to the project's theoretical model.

Reliability and Validity

Guba and Lincoln (1985) proposed four criteria used to assess the soundness of qualitative research, as an alternative to the traditional quantitative-oriented criteria of reliability and validity. These four criteria, credibility, transferability, dependability, and confirmability, were addressed in this study design and analysis.

Credibility

Credibility, or the believability of the findings, was established in the early stages of the study in three ways: by conducting repeated observations; utilizing detailed, rich description; in addition to debriefing and member check-in with the PI. Ayalon and Greed (2016) found the way in which questions were asked influenced respondents' ability to provide detail and descriptions. In the study conducted by Warren and Williams (2008), they note the interpretation of interview data requires an understanding of context (p.407) and the respondents' interpretations. Thus, observations are an important method of obtaining contextual understanding. Repeated observations conducted during the study examined multiple interactions using the same spaces over three-week period. Observations took place using an agreed upon randomized schedule, approved by management. Regular peer debriefings enhanced the study findings by reducing researcher bias, confirming reliability of information across facilities by review from the PI, and allowed for triangulated data to inform the investigation.

Transferability

For a study to be transferable, elaborating on details from observations and interviews as well as the spatial descriptions allows other researchers to replicate the study through comparison of similarities in the study as well as important differences in the setting, instruments, and participants' profile to determine whether another study is similar and findings can be extrapolated. It may also be the case in any social environment that minute details pertaining to one observation might not apply to another study, noting discontinuities from the original study. Thick, rich description was created for all narratives to support transferability in the observation and mapping notes, interview summaries, and qualities of the spatial inventory. Triangulation of these notes, creating key findings also allows other researchers to assess their

findings when compared to those of this study. And finally, interviews were recorded and transcribed creating rich first-person detail and interpretation for comparison to other studies.

Dependability

Like transferability, dependability of the research findings is manifested through consistency in the reporting of the findings, the way each setting was analyzed, and the manner of data presentation and summarization. The methodology was clearly laid out and findings derived reported in a clear manner to allow replication by other researchers. Inquiry audits at random intervals ensured field observations were recorded effectively and confirmed uniformity of the data collection process.

Confirmability

Every effort was made to connect the research findings with research questions and data collected eliminating researcher bias through personal perspective. The use of an audit trail by direct translation of field notes from observations as well as the intercept interview captured decisions made through the research process.

CHAPTER IV

EXAMINING THIRD PLACE IN A CONTINUING CARE RETIREMENT COMMUNITY

She said 'oh you'll love it; you always went up to Colorado for your vacations' … blah

blah blah blah blah… Driving up I-25 and I said, "You're going the wrong way! We

ought to be going west!" She said, 'Oh you'll like it, it's a little town. It's a small town

and people are real nice.' And I thought, what the hell, we'll find out 'cause I've lived in a

lot of places, and some I like more than others… We got here, I said, "Hell's fires! This

isn't in the mountains! This is foothills!" (Blanche, 88)

Background

Real estate research firm Marcus and Millichap's recent report (Murphy, 2019) reminds

us that there are now approximately 73 million "baby boomers" who are over the age of 55.

Continuing Care Retirement Communities (CCRCs) are the preferred senior housing option

(Hill, 2018), in part because a proportion of that demographic demonstrates increased affluence

from earlier generations (Rowe & Kahn, 1997). Study findings suggest CCRCs support "aging in

place" (Dickinson, 2004; Joseph, 2006; Rosenbaum, Sweeney, & Windhorst, 2009), by utilizing

physical and technological interventions enabling people to live in the same place for as long as

possible. CCRC facilities anticipate the progression of needs moving into old age, including

mental and physical complications that can be associated with the aging process. Many of these

facilities provide at least two levels of care amongst four levels: independent living (IL), assisted

living (AL), skilled nursing (SN), and memory care (MC) units for patients with dementia-like

conditions (Kane & Cutler, 2009; Keen, 1989; Wacker & Roberto, 2013; Wang & Kuo, 2006).

Activities of daily living, which include feeding, dressing, and toileting are used to asses an

individual's required level of care (Shin, 2015). The path of residency in CCRC facilities

typically begins with residents functioning independently placed into IL (Brownie &

Horstmanshof, 2012). As the inevitable decline of bodily and cognitive ability occurs, residents'

changing needs are accommodated through the remaining three levels of care. While some

CCRCs still segregate apartments based on care levels (Shippee, 2009), these lines have become

blurred in recent years, with even IL facilities designed to support residents with diverse health

conditions and abilities (Campbell, 2015a). CCRCs can play a role in improving health-related

quality of life (Park, Chun, Lee, Kim, & Park, 2015), residence satisfaction (Cutchin, Marshall,

& Aldrich, 2010), alleviating social loneliness (Ayalon & Green, 2012) and decreasing

depression (Jang, Park, Dominguez, & Molinari, 2014).

Supportive Design in CCRCs

Supportive Design is a theory derived from Ulrich's (1984) seminal study that started a

revolution in healthcare design by revealing evidence that sight lines to outside nature views

improved recovery trajectories for patients in a hospital. The theory includes three principles still

practiced in healthcare design today 1) sense of control, 2) social support, and 3) access to

positive distractions (Ulrich R. S., 1991). CCRCs often give significant consideration to varied

physical and cognitive abilities of the end-user (Pinet, 1999; Shin, 2015; Zavotka & Teaford,

1997), aligning with Ulrich's sense of control principle primarily through incorporation of

Universal Design strategies. Universal Design (UD), is a term coined by Mace (1988),

approaching the built-environment as usable/functional for the greatest diversity of users

possible, inclusive of physical parameters as well as visual and cognitive limitations (Jonsson,

Ostlund, Warell, & Hornyansky, 2014; Sherman & Sherman, 2012). For example, lack of

elevators and ramps meant only the most able-bodied could utilize or even access a space (Imrie,

2012; Lid, 2014). Such discriminatory design practices were originally addressed by the

Americans with Disabilities Act (1990) and today they are considered through UD. ADA legislation was a response to built environments being discriminatory by design (Joines, 2009) that informed UD principles and their incorporation into building codes, thus establishing a minimum bar for CCRC designs to support residents' sense of control toward embracing supportive design principles. However, research suggests supportive design solutions specific to aging populations that go beyond UD principles.

Supportive Design provides underpinnings for evidence-based design (EBD), "is the process of basing decisions about the built environment on credible research to achieve the best possible outcomes" (The Center for Health Design, 2019). EBD is envisioned as a research lifecycle involving eight steps; 1) define goals, 2) find relevant evidence, 3) critically evaluate evidence, 4) create evidence-based design concepts, 5) develop hypothesis, 6) collect baseline performance measures, 7) monitor implementation of design and construction, and 8) measure post-occupancy performance (The Center for Health Design, 2019). Ulrich et al. (2008) sought to summarize and create a readily accessible resource of evidence to inform EBD in healthcare settings. EBD strategies for an aging population (summarized in Table 1) can be a bit more challenging to implement and evaluate given potentially contradictory design aesthetics. The goal of maintaining a "homelike" atmosphere, that is inviting and calming, means institutional finishes should be avoided (Campbell, 2015b; Kane & Cutler, 2009; Lundgren, 2000), but CCRC finishes and furnishings must wear well despite heavy use, or the building may be seen as run-down (Brawley, 2006). Flooring should not be limited to hard surfaces (Brawley, 2006), that tend to feel institutional and may cause glare (Lundgren, 2000). Carpet should be low pile and have low contrast and/or small patterns to avoid falls as changes in vision may process high contrasts as physical changes in elevation (Perritt, McCune, & McCune, 2005). Light levels

should be as much as 3x higher than those used for other buildings to support the aging eye's inability to absorb light (Brawley, 2009), but must designed in conjunction with finish and furnish selections to avoid glare (Brawley, 2009) and harsh shadows – particularly to support persons with dementia for whom shadows may increase anxiety (Brawley, 2001). Wayfinding is confusing in hallways with monotonous repetition lacking identifiable waypoints, but too many colors or patterns also complicate effortless wayfinding (van Oel & Boer-Lootens, 2015). EBD strategies intend to foster improved well-being, greater independence, and more sense of control for CCRC residents. The unenviable task for the CCRC design team is to find the "sweet spot" in these dichotic elements while also remembering that the CCRC is first and foremost a home, that may contribute to the lack of widespread adoption of EDB in CCRCs.

Table 1

Evidence-Based Design Elements in CCRCs

Element	Summary	Source
Lighting	High reflectance ceilings and upper walls reflect light, spaces feel open. Color Rendering Index (CRI) 80 or higher for quality light production	Brawley, 2006
	Shadowy hallways increase anxiety for people with dementia (PWD)	Brawley, 2001
	Thickening cornea requires 3x additional light amount vs. standard	Brawley, 2009
	Cool color light temperatures (<7000K) may increase undesirable behavior issues for PWD	Van Hoof, Schoutens, & Aarts, 2009
	Increased number of fixtures with lower intensity decrease glare	Farage, Miller, Ajayi, & Hutchins, 2012
	Sleep disruption is more pronounced for PWD	Miu & Szeto, 2012
	Exposure to lighting +1000 lux above ambient level decreases sleep disruption and supports circadian rhythm	Brawley, 2006, 2009
	Exposure to UV rays and blue wavelengths (daylight) decreases sleep disruption and supports circadian rhythm	Durvasula, et al., 2010
	Even 1hr exposure to daylight supports circadian rhythm	Corbett, Middleton, & Arendt, 2012
Flooring	High contrast carpet and large patterns lead to imbalance and falls because contrast is observed as changes in elevation by seniors	Perritt, McCune, & McCune, 2005
	Limit hard surfaces due to glare and institutional appearance	Brawley, 2006
	Carpet supports "home like" feel and dampens foot traffic noise	Garre-Olmo, et al., 2012
	High contrast grout lines in tile or flooring increase wandering for PWD	Passini, Pigot, Rainville, & Tetreault, 2000
Color	Color wheel opposites create observable contrast, adjacent colors or slight contrast may not be observable for seniors	Arditi & Knoblauch, 2005; Brawley, 2006
	Cool colors may become muddy due to yellowing cornea	Farage, Miller, Ajayi, & Hutchins, 2012
	White is preferred or low stimulation color schemes preferred for PWD	Call & Jantzen, 2012; Van Oel & Boer-Lootens, 2015
	Findings for color preference in seniors are conflicting, so there are no wrong answers regarding preferences	Brawley, 2006; Tofle, Schwarz, Yoon, Max-Royale, & Des, 2004
Furniture	No single style preference, but furniture conveys economic status	Bafisiak, Klos, Krzysztof, & Maciej, 2014
	Soft seating (e.g., club chair) preferred but consider wide seat pans for comfort and easing egress	Kamperidou, 2017
	Arms are required for ingress/egress but must not be wider than a hand can grasp or will not assist ingress/egress	Bafisiak, Klos, Krzysztof, & Maciej, 2014
	Falling into, leaning on and pushing off: furniture must be robustly constructed including arms which must support bodyweight for egress	Brawley, 2006
	Higher seat and recessed foot area aid ingress/egress	Simek, 2013
	Front castors for dining chairs preferred and should not add to ambient noise	Brawley, 2006; Jones, 2014
	Throw pillows are often used by seniors to adjust seating fit	Jones, 2014
Wayfinding	Wayfinding for seniors is complicated requiring intermediate waypoints	Marquardt & Schmieg, 2009
	Avoid long corridors and repetitious architecture lacking waypoints, do not confuse waypoints with complicated finishes in hallways	Van Oel & Boer-Lootens, 2015
	"Collector Spaces" facilitate conversation and wayfinding	Burzynska & Malinin, 2017
	Avoid H and L configurations and dead-end hallways for PWD	Passini, Pigot, Rainville, & Tetreault, 2000

Socialization and Third Place in CCRCs

Severe loneliness in seniors is tied to a nearly doubled increase mortality rates, and CCRCs can play a key role in alleviating "aloneness", a key contributor to severe loneliness (Luo, Hawkley, Waite, & Cacioppo, 2012). While UD and EBD primarily address sense of control, social spaces – particularly those functioning as third places in CCRCs – have potential to address all three of Ulrich's supportive design principles. In his book, *The Great Good Place,*

Oldenberg (1989) signals the importance of "third places", social spaces that are apart from the home (first place) and workplace (second place), and their critical role in socialization leading to established sense of place. Professionals from diverse disciplines, including architects and designers, invest a great deal of thought and care in the design of public and support spaces to promote socialization and community building, particularly for seniors (Cabras & Mount, 2017; Campbell, 2015a, Campbell, 2015b; Harbinger, 2015; Oldenburg, 1989; Rosenbaum, Sweeney, & Windhorst, 2009; Williams & Hipp, 2019). Aylon, Yahav, & Lesser (2018) found that CCRCs foster better connections and social networks than those found in adult-daycare environments, but there has been limited research on spaces for social activity in CCRCs (Campbell, 2014; Campbell, 2015b; Zavotka & Teaford, 1997; Brawley, 2006; Pinet, 1999), including how these social spaces might become third places for residents. Pinet (1999) underscores the importance of proximity within the CCRC for socialization spaces, which must be centralized for those with mobility issues. Campbell (2015b) found that atmosphere, described as lively, playful and welcoming, was more important than quality architectural finishes for successful CCRC third places. She also describes how the success of third spaces in CCRCs relied heavily on providing light food, positive interactions with staff, homelike finishes and an absence of rush - meaning that guests could come and go without being on a set schedule. Rosenbaum, Sweeney, and Windhorst (2009) echoed these findings from a retail perspective and included comfortable furnishings to encourage lingering.

In her book about creating caring environments for seniors, Brawley (2006) dedicated chapters to dining rooms and "shared living rooms", as important spaces for supporting well-being. Facilities that encourage socialization can help mitigate caste-like systems and avoid the fear associated with the declines associated with aging (Shin, 2015; Shippee, 2009). The move to

a retirement community often creates anxieties; it is a transition representing loss of home and possessions, loss of independence, and the reality of financial needs offering no relocation options once a move is complete (Ayalon & Green, 2012; Glass, 2014; Shin, 2015). Recent studies (Jang, Park, Dominguez, & Molinari, 2014; Park, Chun, Lee, Kim, & Park, 2015) continue to support the evidentiary tie between socialization and quality of life for the elderly. Once relocating to a CCRC, opportunities for excursions outside the community grounds are often limited (Ayalon & Green, 2012) thus, the imperative that CCRC social spaces adequately supporting of the seniors who live there is clear.

It is difficult to separate the social from the physical attributes necessary to sustain well-being in CCRCs. Oldenburg's (1989) "third place" is an advanced conceptualization of a social space imbibing social network connections, access to information, establishing community norms, and generating place identity (Cabras & Mount, 2017; Sugihara & Evans, 2000; Williams & Hipp, 2019). Place identity is critical to creating and sustaining identity of self (Dixon & Durrheim, 2000; Korpela, 1989), especially in CCRCs (Cuba, 1993) (see also "place attachment" (Gieryn, 2000)). Disruptions to place identity impact personal identity negatively (Brown & Perkins, 1992). Rosenbaum, Sweeney, and Windhorst (2009) connected the social ties provided by third place and indicated;

> Third places are created not with architectural wonderments but by encouraging intercustomer and employee socialization, employing comfortable seating arrangements, allowing customers to linger, and allowing them to participate in the servicescape décor (e.g., highlighting customers' artwork, hanging customer event and lifestyle signage). (Rosenbaum, Sweeney, & Windhorst, 2009, p. 55)

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The social aspects of third place are often measured using Interpersonal Ties (Giuffre, 2013). This theory describes how although strong ties (e.g. family, friends) are important, weak ties (e.g. acquaintances) are also often critical bridges between different social groups or networks (Rainie & Wellman, 2012) and can be formed independently of social stigma or bypassing perceived gatekeepers (Granovetter M. S., 1973; Granovetter M. , 1983). Weak ties help people build Social Capital, which "refers to features of social organization such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit" (OECD Growth Project, 2001, p. 67). Within CCRCs it is also important to identify different types of social networks, which may be family-centered more than friendly associations within the community (Jiang, Lou, & Lu, 2018). Social capital has been shown to increase sense of well-being and satisfaction (O'Doherty, French, Steptoe, & Kee, 2017) as well as perceived better health (Fiorillo & Sabatini, 2015).

Seniors living in CCRCs may have decreased loneliness tied to the availability of social activity compared to seniors living in the community at large (Rosenbaum, Sweeney, & Windhorst, 2009) and third places have the potential to help residents "retain or regain" social relationships (Brownie & Horstmanshof, 2012). Yet CCRC third places may have unique attributes apart from Oldenburg's conception due to residents' limited mobility and unique physical, cognitive, and social needs. Thus, the conceptual framework guiding this study connects concepts of supportive design for seniors with attributes of the built and social environments supporting third place (Figure 1).
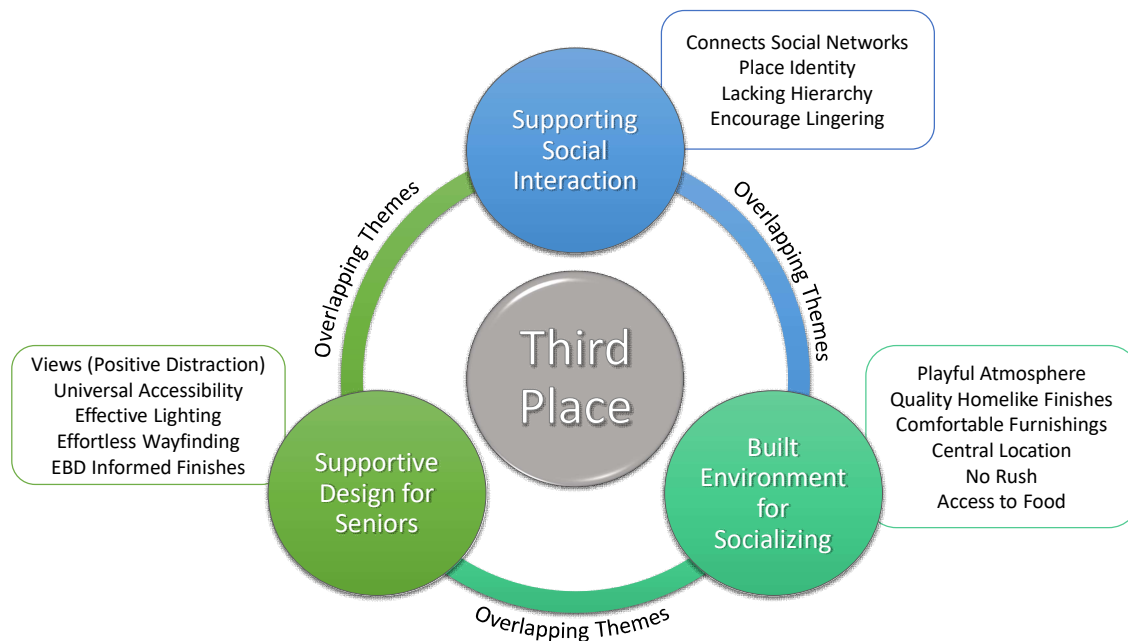
Figure 1. Model

Connects Social Networks
Place Identity
Lacking Hierarchy
Encourage Lingering

Views (Positive Distraction)
Universal Accessibility
Effective Lighting
Effortless Wayfinding
EBD Informed Finishes

Playful Atmosphere
Quality Homelike Finishes
Comfortable Furnishings
Central Location
No Rush
Access to Food

Figure 1. Conceptual Framework Describing Third Place Attributes in CCRC's

Research Design and Methodology

This qualitative case study examined impacts of interior design features and qualities of a CCRC on socialization and community building as attributes of third place. The case study method was selected because it is a means of investigating a "bounded" system (Glesne, 2011). "[A case] occurs in a specified social and physical setting" (Miles, Huberman, & Saldana, 2014, p. 30). A specific focus considered common areas (e.g. dining rooms, game rooms, etc.) and whether these spaces function as viable third places for a CCRC. This investigation included a spatial inventory analysis of specific environments, observations and behavior mapping, as well as semi-structured interviews. These data were collected to answer the research questions:

RQ1: Are purpose-built social spaces in the CCRC utilizing EBD research findings for supportive design?

RQ2: If third places are present, are they structured by the CCRC (purpose-built) or naturally occurring?

RQ3: Are third place environments (purpose-built and naturally occurring) positively supporting strong and week social ties in the CCRC?

Case Selection

Recruiting a CCRC for participation in the study began with email requests sent to a wide array of CCRCs in the Midwestern United States that met desired criteria for this study: a CCRC consisting of one primary building inclusive of at least one care level (IL and/or AL), residents who are 55+ without severe cognitive impairment, receptive staff, and included at least one purpose-built space intended for socialization (e.g., dining room). When these emails garnered no responses, the research team identified a single CCRC that optimally addressed study criteria. After an initial meeting with the DE to discuss the project, the facility administration indicated willingness to participate in the study in part, because the facility had recently completed a two year renovation of the community's common spaces as part of an on-going commitment to maintaining a top tier facility and hoped that the study would validate their efforts on the residents' behalf. For the purpose of this study, the case is bounded by the facility architecture and includes resident and employee occupants.

An example of "adaptive reuse", the CCRC building was originally designed as a hospital that opened in 1951 and was later converted into a school administration building. Eventually adapted into a CCRC that opened in late 2007, the community includes 44 apartments for IL housed in the main building. A wing addition in 2011 includes 10 secured memory care apartments and 28 AL apartments, for a total building area of approximately 100,000 square feet (Figure 2). Resident units vary in size from just under 500 square feet to just over 1400 square

feet for IL. The CCRC is centrally located within a small city (population approximately 77,000) and is primarily surrounded by light commercial (medical) and residential housing. There are no retail stores, restaurants or civic buildings within a one-mile radius of the facility making the opportunities for socialization within the facility vital.
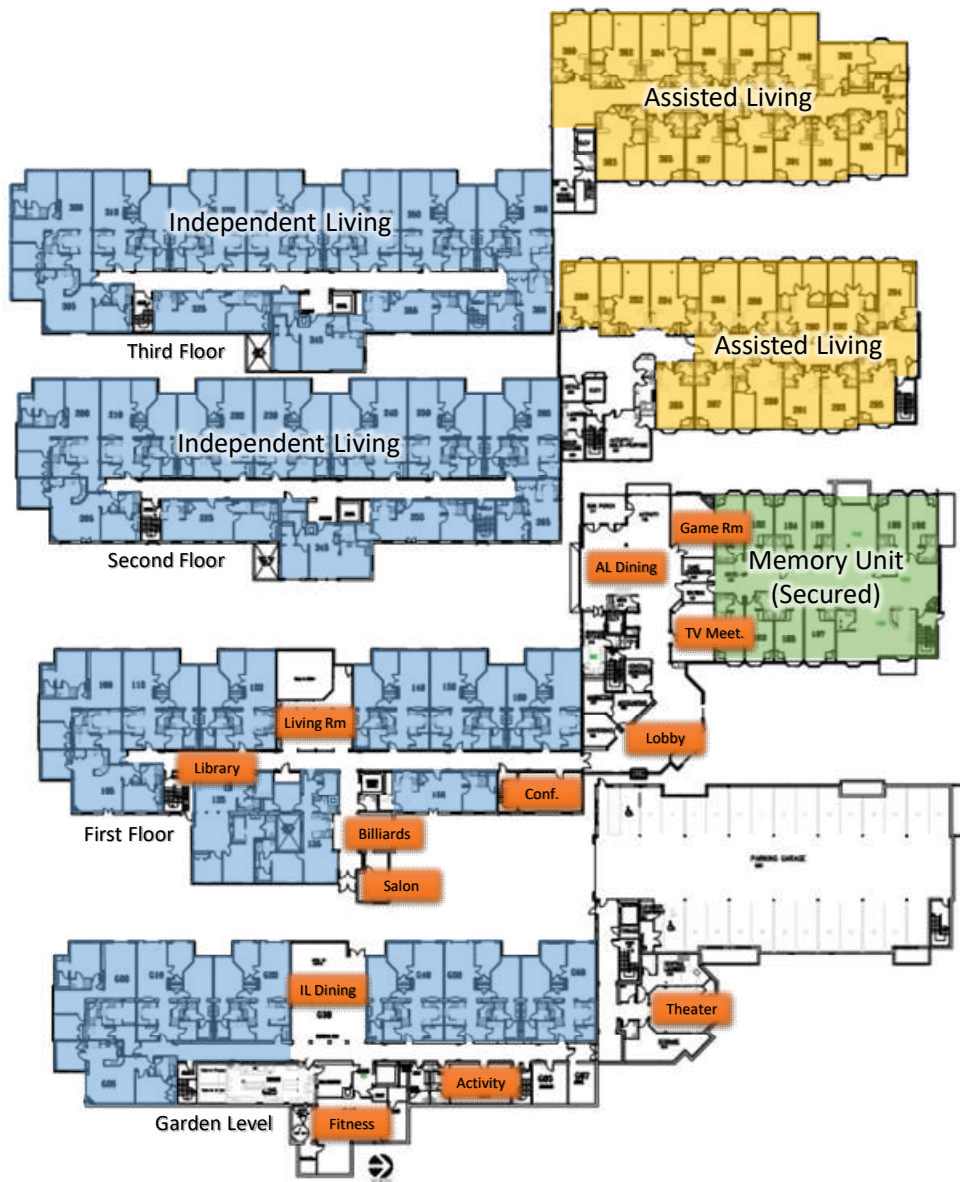
Figure 2

Figure 2. CCRC Floor Plan. Highlighted areas indicate care levels and social spaces.

Data Collection

Data were collected over a period of three months from three primary sources: spatial inventory, direct observation, and semi-structured interviews.

Spatial inventory. The arrangement of spaces and critical spatial relationships are unique to each CCRC. Spatial inventories provide a detailed account of each physical setting (Creswell, 2007). For each place identified from the floor plans as a third-place opportunity, digital photographs with descriptions of elements and their condition were recorded. The spatial inventories focused specifically on finishes and furnishings, lighting, and the physical conditions of wear. These inventories compared spatial character and quality, alignment with supportive design principles, patterns of use, and allowed for cross-referencing locations and types of social interaction. The inventory also familiarized the researcher with the facility and served as a medium to introduce the researcher to residents on an informal level. Data were also summarized into an annotated floor plan for use during behavior mapping observations.

Direct observations. "Human life… cannot be shielded from external interference and studied in a vacuum…" (Rabinow & Sullivan, 1979, p. 6). Actor network theory (ANT) allows us to simultaneously consider both human and non-human actors in relation to observable networks (Dankert, 2012). The researcher combined behavior mapping of individuals in a space to track activity with a key for specific behaviors, including interactions between human and non-human actors (Sommer & Sommer, 1991). Because triangulation of observations supports validation, multiple observations were conducted in the same locations at different time points (Glesne, 2011). During observations the researcher was stationed in the Lobby, TV Meeting Room (TVR), Second Living Room (SLR), and South Activity Room (SAR). Additional locations of interest included the AL Dining Room, Billiards, Library, Conference Room,

Theater, and Salon, which were observed from the primary observation stations. Observations were conducted in 20-minute intervals between the hours of 09:00 and 18:00, which are considered the community's hours of operation. Each area was observed during a morning, midday and evening period. Following a scheduled observation period, the researcher reviewed the activity maps and created field notes linking attributes of place to activity and behavior. Special observations were also conducted to observe one recurring social activity [Social Hour], one special event [Valentine's Day Dinner], as well as one entire breakfast service in the IL dining. These special observations were informed by resident interviews during data collection.

Semi-structured interviews. Semi-structured interviews commenced one week into the observation period and were conducted over a period of five weeks. Ayalon and Greed (2016) found to expand conversations beyond "yes" and "no" answers required beginning interviews with generic questions before moving to focused questions. Questions collected information about demographic and personal history, relationships with staff, areas known for social activity, and social networks. An initial inventory of questions was created and narrowed down to 16 questions with the assistance of the research team and pilot tested with an older adult prior to the study. In total, the interview included five demographic questions and 11 questions to gather information about participants' social activities, strong and weak interpersonal ties, and spatial use and preferences in the CCRC.

After a facility requested signup sheet failed to garner any interviews, face-to-face interviews occurred both via intercepting individuals following observation and by established research hours between 08:00-12:00 for eight consecutive business days in the shared living room (SLR). Activity Committee members also encouraged participation via word-of-mouth. As a signup sheet and, potentially, intercept interviews would result in bias favoring residents who

are regularly participating in activities outside their units, snowball sampling was also used while

interviewing residents to identify additional participants who do not often participate in CCRC

social functions. The CCRC community is primarily identified as IL with some AL residents. A

separate, and relatively new addition to the community is home to a "Memory Unit" but is

segregated from the IL/AL sections for safety. As such, assumptions were that any resident

observed in the IL/AL social areas were cognitively functioning at a satisfactory level to give

informed consent to participate and participate in interviews. Interviewees were also confirmed

with staff as being able to provide informed consent.

Table 2

Demographic Information for Interview Participants

Moniker	Age	Sex	Occupancy	Residency	Profession	Previous CCRC	Activity
Rose	84	Female	Double	1 month	Librarian	No	Low
Jack	87	Male	Double	1 month	Construction	No	Low
Annie	81	Female	Single	5.5 Years	Farmer	No	Medium
Julia	83	Female	Double	2.5 Years	Teacher	No	Medium
Dorothy	85	Female	Single	3 Years	Teacher	No	Medium
Rose	85	Female	Single	3 Years	Sales	No	Low
Sophia	85	Female	Single	4 Years	Homemaker	No	Low
Alice	85	Female	Single	1 Year	Librarian	No	High
Alma	91	Female	Single	3 Years	Teacher	No	High
Joe	82	Male	Single	4 Years	Buyer	No	Low
Blance	88	Female	Single	N/A	Nurse	Yes	Low
Susan	84	Female	Single	6 months	Bookkeeper	No	High
Bess*	78	Female	Single	3 months	Homemaker	Yes	Low

Note: Rose and Jack are married, live together, and interviewed together.
   Joe and Blance are good friends who asked to be interviewed together.

*Bess' interview was not referenced in findings due to CCRC questions regarding her cognative (undiagnosed) ability.

Table 2

Data analysis. Miles, Huberman, and Saldana (2014) caution that data analysis should be an ongoing process through the data collection phase. In this way, analysis was conducted at four points in the data collection process: after spatial inventory to develop an annotated floor plan to inform observations, after approximately one week of direct observations to inform interview questions, after approximately two interviews to inform additional observations as well as revise interview questions, and after completion of all data collection. A behavior-annotated floor plan was initially developed from the spatial inventory with behavioral information added after observations. Smaglik (1998) suggested that using annotated plans and adding behavioral observations during the design process became a method of discovery, prompting questions while also providing artifacts for future reflection. By adding spatial inventory notes to an annotated plan prior to behavior mapping, the floor plan itself becomes a method for recalling previous findings while allowing for additional dimension through behavioral observations.

Observational and interview data were analyzed through a process of systematic content analysis (Miles, Huberman, & Saldana, 2014). First, a priori codes (informed by the conceptual framework) guided initial analysis of field notes from direct observations and involved open coding to define new codes. Reflecting on the observation and transcription, memo writing – common to qualitative data analysis (Glesne, 2011; Miles, Huberman, & Saldana, 2014) – was performed to inform subsequent observation periods. Codes generated during the initial analysis of the observation phase of data collection were then used as a priori coding for the next phase of data collection, interviews. Interviews were digitally recorded with permission from the participant and transcribed within 24 hours so that incidental data and observations by the researcher could also be included. Additional open coding was performed as necessary and constant review of coding frequencies began to form themes in the data. Once all three phases of

data collection were completed, codes from the observation phase and the interview phase were reviewed together to investigate emerging themes via axial coding. Creating a thematic map allowed the researcher to filter out irrelevant observations. The social attributes integrated with behavioral mapping were correlated with the spatial inventory listing spatial typologies functioning as third spaces. NVIVO software was used to identify frequencies of attribute connections to space and to build the conceptual model that could be compared to the project's theoretical model.

Findings

Supportive Design Attributes of CCRC Social Spaces

Visual analysis of the purpose-built social spaces in the CCRC sought to answer research question one: *Are purpose-built social spaces utilizing EBD research findings for supportive design?* A spatial inventory for each social space in the CCRC (see Figure 3, for example) was analyzed with respect to evidence-based supportive design recommendations (Table 1). Overall conditions in the community building were excellent owing to the recent completion of a two-year renovation. In most cases lighting, flooring, and furnishings aligned with evidence-based supportive design recommendations, with a few exceptions.

Figure 3

Space	Flooring	Ceiling / Height	Wall Finish/Color	Lighting / Intensity	Noise Level	Proximity to res.	Other
SLR Second Living Room	*Carpet, broadloom with medium scale baroque pattern*	*2'x4' acoustic tiles and drywall tray. 10' ceiling*	*Drywall, textured in cream. Granite tiled backsplash*	*Recessed cans at bar, surface mount incandescent, fluorescent trofs*	*Low ambient noise from elevator and hallway*	*directly across from elevator. Central to residents*	*Large open-to-below is enclosed with glass and looks over IL Dining Room*
Picture							

Space	Seating	Casegoods	Equipment	Comments/Condition
SLR Living Room	*Fully upholstered settees and club chairs. Tables at perimeter have wood frame chairs with arms and upholstered seat/back. No castors*	*Very large built in bar-back with granite tile backsplash and granite surfaces. All-wood side tables. Game tables are laminate.*	*Beverage center, sink, 2 computer stations, pleeted shades at OTB*	*Minor vacuum scratches, cushions and upholstery all appear near-new*
Picture				

Additonal Notes/Observations

This room hosts a coctail hour on Monday's and Friday's at 19:00.
Chairs at game tables are sturdy but might be too heavy to use effectively. No front castors.
Some upholstery does not contrast with carpet.

Figure 3. Spatial Inventory Example

Lighting. Lighting was found to be adequate in most social areas. Artificial lighting was typically provided through ceiling mounted fixtures with faux alabaster shades, which cast a warm light. An iPhone application was used to measure light levels but was not independently verified with a light meter. Most measurements were around 10 footcandles (measured at table height), with natural daylighting pushing that figure closer to 20 footcandles in some areas. Three areas identified by the researcher as having problematic lighting were the SLR, SAR, and the game room. The SLR features a balcony overlooking the IL Dining Room. In the afternoon hours, because that dining room does not serve dinner, the lights are turned off. But three large

chandeliers are hung around the railing height of the SLR and when turned off create a "black hole" effect, which was observed by the research team and also commented on by four residents who indicated a need for better lighting near the puzzle area situated along the balcony. In the SAR, basic fluorescent troffers provided adequate light levels for activities, but lights were centered in the room created shadows near the ceiling. Residents mentioned that it was like a dungeon, which may be due in part to lighting, and also its garden-level location. Another problem area was the Game Room. The underutilized room was indicated as a favorite for visiting grandchildren in interviews. Lighting was provided by two surface mounted fixtures each containing three bulbs and shaded by faux alabaster bowls casting yellow light into the room. A single patio door provided natural light in the Game Room and was partially shaded by a large pine tree outside. All three of these spaces suffered from uneven lighting and residents recognized that attribute as a deterrent to their use of the rooms.

Flooring. Flooring selections were found to mostly align with EBD for supportive design. Most of the social spaces were carpeted, with wood flooring in a portion of the lobby and simulated wood pattern vinyl flooring in the TV Meeting room and SAR. Carpeting was in a warm color palette, incorporating lower-contrast patterns and low pile. Wayfinding design strategies included alternating foreground and background as the primary color on each floor and contrasting stripes of solid color carpet underneath arches in the corridors. However, interviews suggest residents do not find these wayfinding strategies helpful. One resident indicated the variation of pattern by floor was frustrating because she did not understand the need for it. Furthermore, the ED mentioned that residents referred to the contrasting carpet stripes in the corridor as "speed bumps". The higher contrast color choice for the corridor accent stripe does

not align with EBD supportive design and may be perceived as a change in elevation by some residents.

Furnishings. Furnishings mostly aligned with EBD, although some furnishing choices were found to inhibit social activities. Seat heights were all found to be above 14" and preference was given to chairs with arms, with a few exceptions. However, chairs in the lobby, SLR, and the sofa in the TVR had soft cushions and residents described sinking into the cushions making egress difficult. The staff commented that the TVR is rarely used which may be due, in part, to inappropriate furnishings. Furniture selections were a common complaint by residents, particularly with respect to decisions made in the recent remodel, which favored heavy furniture, thereby discouraging room reconfiguration. For example, relatively mobile club chairs were replaced with a settee and lounge chair configuration in the SLR and residents complained that this furniture was difficult to move when they held their twice-weekly Social Hour accommodating 20 residents or more. Residents reconfigured the space, placing the two settees along the only wall so that those pieces could remain stationary and the lounge chairs could be pushed in or out as needs dictated. Five residents reported frustration due to perceived loss of their sense of control in the SLR; one resident described being told by the CCRC management "you're not supposed to move the furniture" as the reason new furniture was so heavy.

Social activities were also inhibited by table choices in the SLR as well as in the Game Room. In the SLR, small 30" diameter wood tables were placed around the balcony overlooking the dining room. These tables have a deeply beveled detail on the top, further decreasing the usable area and impeding residents' ability to play cards and dominos which was echoed in interviews. A puzzle was observed to be habitually left out on one of the three tables, but due to the round shape and small table diameter, a traveling puzzle tray was used beneath it to give

adequate area for assembly, overflowing the tabletop by several inches. The Game Room, which contains shuffleboard, foosball and some arcade games, also has no tables to support board games, although the game boards for Chinese Checkers, Checkers and others are hung on the wall as art pieces. Furthermore, seating consisted of a 4' square upholstered ottoman, which lacks arms and back support needed by seniors.

Evidence for Third Places in the CCRC

Data from the spatial inventory, observations, and interviews were triangulated (with findings summarized in Table 2) to answer research question 2: *If third places are present, are they structured by the CCRC (purpose-built) or naturally occurring?*

Table 3

Visual Inventory of Spaces

Location	Element	Supportive Design Analysis	Third Place Attributes analysis	Element
IL Dining *Garden Lvl*	*Lighting*	Large and medium chandeliers, recessed fluorescent troughers 2-story open above storefront with powered solar shades	Available 24/7 to residents, warm colors and views	*Welcoming*
	Flooring	Broadloom carpet, small organic motif		
			Abundant conversation, mixed banter and networking/events	*Deep Conversation*
	Color	Cream paint on drywall, scrollwork wallpaper in gold/gray	Res. Space. No hierarchy observed, staff and residents interact well	*Hierarchy*
			Some residents circulate either before or after eating to connect with	*Networking*
	Furniture	Resin top tables with tablecloths are left set for next meal Wood chairs w/arms, front castors, vinyl seat and upholstered back	other residents, interviews indicate dining is primary network path	
			Staff policy: Assigned seats are rotated monthly. Breakfast is open seating, no dinner service	*Notes*
	Configuration	Mixed path widths, spaces are tight when fully occupied		
Fitness *Garden Lvl*	Lighting	Recessed fluorescent troughers, uneven light with shadows at walls	Available 24/7 to residents but PT appointments are primary	Welcoming
	Flooring	Carpet tile, geometric installed on 1/4 turn	The two permanent equipment pieces were observed to support conversation, but was not supported in interviews	Deep Conversation
	Color	Teal paint on drywall	Bayada (PT) opperates, not a resident space	Hierarchy
			Interviews indicate fitness activities are well attended but no indication of networking	Networking
	Furniture	Primarily fitness equipment. Sturdy steel stacking and upholstered chairs are provided for exercise classes		
			Interviews indicate this space is too small for current participation	Notes
	Configuration	Varies based on use. Permanent equipment is close together		
Game Rm *Garden Lvl*	Lighting	Recessed fluorescent troughers, suffcient light for activities light creates shadows near ceiling, no natural light or windows	Missing equipment, no views, described as a "dungeon"	Welcoming
	Flooring	LVP medium wood pattern	Activities are well attended but observed conversation was limited to ribbing winners and banter	Deep Conversation
	Color	Mustard-sand paint on drywall, white painted wainscotting	Resident space, but no-mix residents vs. visitors	Hierarchy
			Interviews indicate activities are good mixes of people but bridge group integrating local residents is no longer attended by any CCRC	Networking
	Furniture	4 large square tables, 2 faux marble tables, wood chairs with arms chairs dragged across floor is very noisy	Wet bar has locking cabinets, is missing equipment. Tables were designed to move around, but are big and heavy. Chairs are firm and open back makes them uncomfortable for long periods.	Notes
	Configuration	Varies. Tables are configured based on activity		
Theater *Garden Lvl*	Lighting	Close to ceiling fixtures with alabaster bowl shades No natural light. Light levels low for alternate use.	AV equipment is secured, room is available but won't function without staff. No exterior windows	Welcoming
	Flooring	Broadloom carpet with scrollwork pattern, low contrast	Specific to event	Deep Conversation
	Color	Sandy yellow paint on drywall and white painted wainscotting	Staff controlled resident space	Hierarchy
			Limited before/after activity conversation	Networking
	Furniture	Upholstered chairs (12 fabric, 6 leather)		
			Room houses TedTalks and several movies each week but interviews did not indicate networking or conversation here.	Notes
	Configuration	Too narrow for walkers and wheelchairs		

Table 3

Table 3 (continued)

Visual Inventory of Spaces

Location	Element	Supportive Design Analysis	Third Place Attributes analysis	Element
Lobby *1st Floor*	Lighting	Glass storefront, positive daylight. Average 15 FC Light balances daylight and avoids shadows, no cool fluorescents	Open access to residents 24/7. Fish tank is a positive distraction Water and coffee provided	Welcoming
	Flooring	Satin finish wood floor and broadloom low contrast carpet Wood floor shows salt and dirt from outdoors	Conversation very limited, usually regarding events.	Deep Conversation
	Color	Warm neutral colors, no accent colors contrasting light solid-surface and dark wood reception desk	Not a resident space due to visitors and adjacent staff offices Seating groups are small and spread out	Hierarchy Networking
	Furniture	Seat heights about 15" but sink-in effect at chairs and settee All chairs have arms, many have set back foot area	Observations found no conversation, usually people waiting for a ride Interview: "too close the brain trust" (administration offices)	
	Configuration	Seating area walkways too narrow for walkers and wheelchairs Walkway (right of desk) is too narrow for two way traffic Large fish tank is identifiable waypoint	Resident mailboxes located on one said of the lobby, no residents were observed socializing around them, no one waiting for delivery	Notes
Living Rm *1st Floor*	Lighting	Natural light filtered via solar shades. Mixed overhead fixtures "black hole" effect when dining room chandeliers are turned off	Open access to residents 24/7. A puzzle is always going at a designated table Wet bar and glasses are provided	Welcoming
	Flooring	Baroque scrollwork pattern, perhaps high contrast medium repeat	Conversations included discussion about events and family ties	Deep Conversation
	Color	Neutral walls with green accent screens into adjacent hallway Fabric colors: brown, beige and rust	Moving of furniture identifies this as a resident space "Social Hour", "Tea and Conversation", "Donuts and Coffee" events	Hierarchy Networking
	Furniture	Seat heights over 15". Medium scale lounge chairs and settees Wood café tables are too small for games and puzzles Desks with computers not used	Residents were observed between scheduled events, usually quiet Interviews showed space is used for resident social engagements	Notes
	Configuration	Few obvious locations for temporary walker storage Ottoman to settee walk space too narrow for walkers Residents complain furniture difficult to move for large gatherings	"Library" is a series of bookcases which were located in the living room before remodel, currently bookcases are located in the adjacent hallway. No seating, dim lighting - no socializing observed	
Game Rm *1st Floor*	Lighting	LED close-to-ceiling fixtures (2) with alabaster bowl shades Natural light blocked by tree, room is dim over-all	Full light glass doors are normally closed and lights are off (negative) Room is adjacent to AL Dining, doors must remain closed to avoid confusing residents at mealtimes	Welcoming
	Flooring	Carpet, broadloom with small organic pattern		
	Color	Khaki paint on drywall above, pewter painted wainscoting		Hierarchy
	Furniture	Game tables and arcade cabinets. One 4' upholstered ottoman 2 small stools at one arcade cabinet-table	No use during observation period Interviews indicate this room is only used to entertain grand	Networking
	Configuration	Ample circulation space	kids/visitors	Notes
TV Meeting *1st Floor*	Lighting	LED close-to-ceiling fixture with alabaster bowl shade, track lighting. Natural light from single large window, glare from cars in parking lot.	Open access to residents 24/7. Hard surfaces, weak light and noise from elevator, lobby and dining	Welcoming
	Flooring	LVP simulated wood, medium dark color	Space was not observed to be used by residents during observation	Deep Conversation
	Color	Navy paint on drywall above, white wainscotting below	Not a resident space due to visitors and adjacent staff offices This room is used by Physical Therapy team as a consultation area	Hierarchy Networking
	Furniture	4 upholstered chars, 1 large sectional Arms are too wide, sectional is deep and soft Seat heights are appropriate but sink-in cushions are too soft	Annual flu shots are performed in this area New residents weren't aware of its existance in interviews TV provided was never observed to be turned on	Notes
	Configuration	Ample circulation space		
AL Dining *1st Floor*	Lighting	Multiple light sources and wide windows to courtyard	Open access to residents 24/7. Feeling of openness and views to courtyard and natural light from two directions	Welcoming
	Flooring	Broadloom carpet, small organic motif	Not observed closely enough to make out level of conversation	Deep Conversation
	Color	Offwhite paint on drywall, tray ceiling in medium gray	Asisted Living residents and IL+ residents only are served here Mixing AL residents and IL residents may combat hierarchy	Hierarchy Networking
	Furniture	Resin covered tables with wood motif, dining chairs have front castors Baby grand piano next to game room entry	Not selected for observation due to potential exposure to AL residents with cognative impairments. Valentine's Day dinner was observed at a distance and compared to observations in IL Dining	Notes
	Configuration	Ample circulation for walkers and wheelchairs		
Conference *1st Floor*	Lighting	Fluorescent troughers. 2 waist-height windows No heavy shadows, ample light for activities	Room is scheduled by staff, but is available between activities Light and trees viewed through windows, light colors	Welcoming
	Flooring	Broadloom carpet, small geometric motif	Door is closed during activities	Deep Conversation
	Color	Cream paint on drywall and wainscotting	Balanced staff and resident use, but not freely available to either Interviews indicate this room houses popular, but small activities	Hierarchy Networking
	Furniture	Seating area with settee and chairs, modular conference table and chairs Chairs at conf. table do not have castors	conversation tends to focus on the scheduled activity No access to refreshments, and no indication that they are encouraged	Notes
	Configuration	Ample circulation space including wheelchairs		
Billiards *1st Floor*	Lighting	Low-glare billiard fixture over table, recessed LED cans Large window, angle does not permit abundant natural light	Available 24/7 to residents, warm colors and views Space is a glorified hallway and a main entry to the community	Welcoming
	Flooring	Broadloom carpet, medium repeat organic pattern Pattern does not have high contrast	*See notes* Resident space and no identified staff use	Deep Conversation Hierarchy
	Color	Cream paint on drywall, sage paint and exposed brick accents	*See notes*	Networking
	Furniture	Two wing back chairs by window and "collector space" with 2 chairs	Over many observation periods, this space was only observed being used once. However, interview indicated this is used frequently but by only 3 residents indicating limited network oportunities. Billiard table in excellent condition, cues are mixed condition with missing tips.	Notes
	Configuration	Ample circulation space		
Other *1st Floor*		Salon Space was not staffed and not available for observation. No guest seating, would serve one client at a time	Salon Not a space for socializing based on no guest seating, would need to observe service for staff interaction. Was not included in observations.	
		Library Hallway, not a room. No seating, lighting is standard hallway fluorescent fixtures and too dim to read. Hallway is not wide enough to support socialization while browsing books.	Library No third place characteristics, configuration precludes oportunities for social interaction. Observations conducted from SLR, no activity observed.	

Table 3

The full list of shared social spaces with potential third place implications forms an extensive list for this community; the SLR, Billiards Area, Conference Room, Lobby, TVR, IL Dining Room, SAR, Fitness Room and a Theater. These areas would all be considered purpose-built as they were provided for in the original architecture of the facility. The process of integrating spatial inventory, observational, and interview data into the annotated floor plan (Figure 4) failed to suggest any naturally occurring third places (such as a mail room). Of the purpose-built social spaces, the TVR, SAR, and SLR most closely aligned with built-environment attributes of purpose-built third places. Of these the SLR was found to function successfully as a third place in the CCRC, with the SAR partially successful as a third place and the TVR rarely used by residents. The IL Dining Room was found to function most successfully as a third place, although it did not as closely align with third place built-environment attributes as described in the literature.
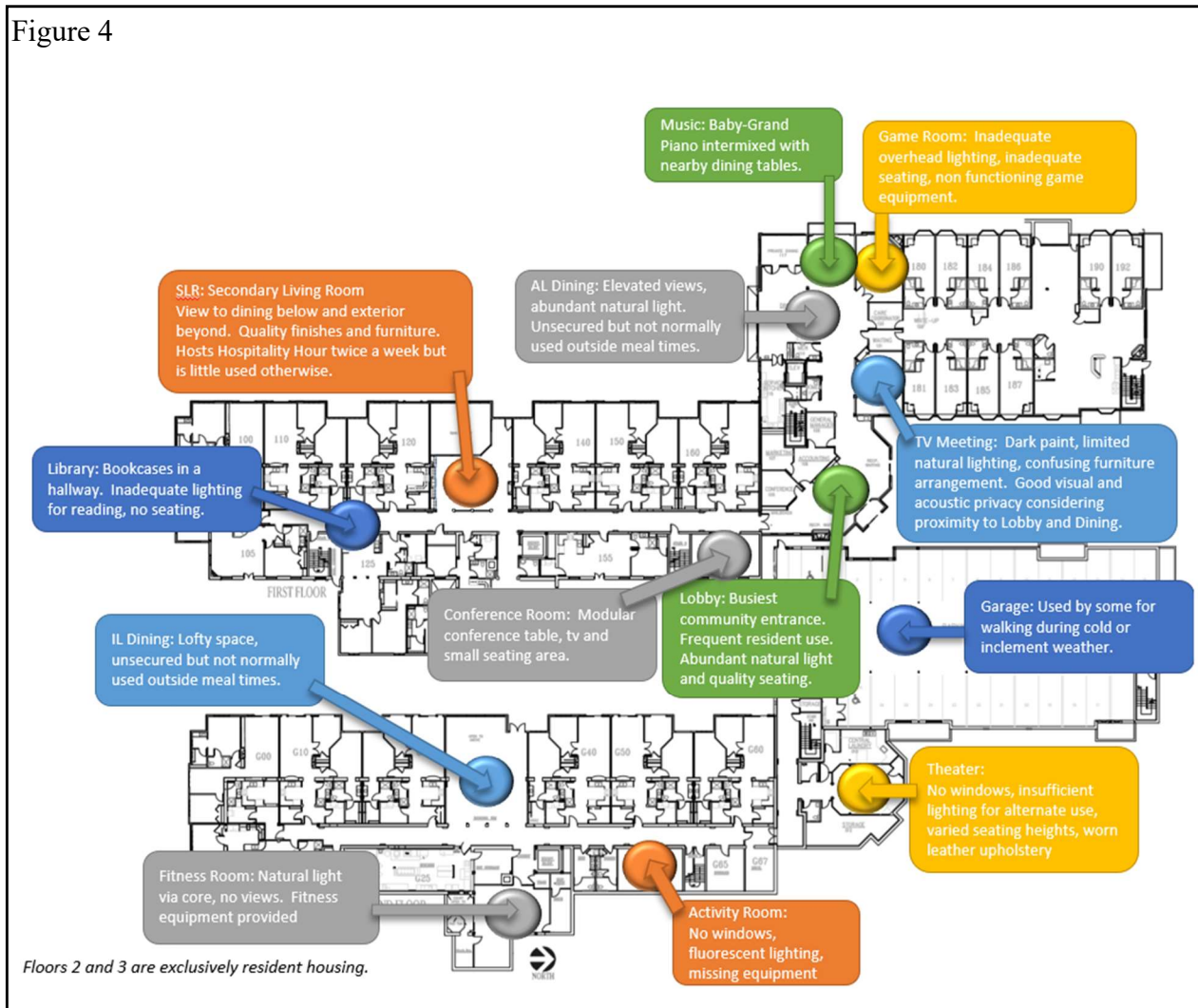
Figure 4

Figure 4 Example of an annotated floor plan. Figure depicts social areas in the CCRC

Dining Room

> My favorite...? That's a hard question, that's the hardest question you asked me. I'd say the dining room. 'Cause they're more relaxed in there and they know their place. That's their space and they know their surroundings and they know what's going to happen. They're a little more relaxed and they cut loose a little more. (Staff Member)

The south Dining Room (IL) was identified by half of the residents interviewed as their favorite place and a place to go for lively conversation. Ties to third place attributes included

social leveling, free flowing conversation, views to the outdoors, functional furniture, access to food, and positive interactions with staff. In general, residents enjoyed the hospitality-like atmosphere; one couple, who both chose the dining room as their favorite place, mentioned that the linen table service may be discontinued and indicated that would be a shame. Attributes that did not align as well with the third place literature included availability for lingering, ambient noise, fostering deep conversation, and sense of control for residents who use wheelchairs or walkers. Access to the dining room is not cordoned off by doors, thus remains available for use between mealtimes. However, staff turn the lights off after lunch service is concluded and during observations residents were not observed lingering between or after mealtimes. Noise was a wide-ranging variable in the dining room because the high ceilings in part of the dining room and a two-story glass wall contribute to high ambient noise levels when the dining room is full. Comments on the configuration of the space indicated that it can be crowded when full, there are few good locations to park walkers, and some of the eight-person tables are long enough that hearing conversations from one end to the other is difficult for some. Instrumental to the success of the dining room as a third place appears to be the CCRC's policy of rotating assigned seats at lunch. This practice was positively described by all the residents in interviews and observed to greatly contribute to a social leveling.

Second Living Room (SLR)

> Well there's enough space that, for those who go down on the two social nights we have, to accommodate everyone. And I try to go down to those because of… just better for me, all in all. Since I'm no social butterfly. I go down and try to bring a little treat. (Blanche)

The SLR was frequently mentioned as a favorite place and a place for lively conversation. Third place attributes included social leveling, access to networks, somewhat open

availability, and some events included refreshments. The quote above was from a more reclusive resident who still makes a point to go down to social hour. The space has no doors or specific operating hours but does share a hallway with resident apartments, so one may infer that courtesy hours might apply. Several regularly scheduled activities occur in the SLR. A social hour is held twice weekly and was started by residents. Staff also host the Tea and Conversation hour and Coffee and Discussion hour in the SLR. These were all well received by residents and thus support the SLR as third place tied to positive interactions with staff. These events, as the names imply, include refreshments, which provides another indicator for third place. Some events are included on the monthly calendar that is given to residents, but some resident-planned activities are not. For example, a small group of residents habitually play Liverpool Rummy in the SLR. As noted in the previous section, the SLR's remodel was not well received by the residents. Many feel the furniture is too heavy to be multi-purpose, the "library" was moved to the hallway and replaced with computers that were never observed in use, and the tables are too small for most games. Despite these negative impressions, several residents indicated that it was an attractive and very functional space. The fact that they feel confident moving the furniture to meet their needs suggests a level of sense of control and place attachment by the residents.

South Activity Room (SAR) and TV Meeting Room (TVR)

The SAR and TVR were initially identified by the researcher as potential purpose-built third places, however they did not appear to function as thus. Half the residents described using the SAR for scheduled activities and two residents described the space as dungeon-like. Nonetheless, the room is home to several regular activities, including card games, bingo, and dominos. These events all appear on the CCRC provided calendar and, while the room is available between game hours, observations found the lights in the room were typically turned

off, which, along with the room's location on the garden-level, might hinder a "welcoming" feel. When the CCRC first opened it invited neighborhood seniors to join residents for a game of Bridge on Friday mornings, but resident interest died out. During the observation period, the neighborhood group met in the SAR, but no resident participation was observed. Indications from interviews were that residents perceive the neighborhood group "isn't very friendly", but the DE continues to encourage residents to sit in on the games. Low participation by residents could indicate a lack of social leveling such that the activity is perceived to have "insiders" and "outsiders". The TVR is the least used social space in the community containing a large sofa and television, suggesting it is for shared entertainment experiences such as watching football games. Yet the television was not used during any of the observation periods. This could be due to several factors including its proximity to the AL Dining Room, noise pollution from the dining room and lobby, hard surface flooring which fails to dampen the surrounding noise, inappropriate furniture selection for seniors, and its frequent co-opting by staff for their use resulting in decreased identification as a resident driven space. The TVR has a table and chairs with casters on all four legs of the chairs, which is often used as a meeting place for the community's physical therapy staff and for events such as annual influenza shots.

Fostering and Maintaining Social Ties

Social networks are a critical part of community building. In senior living communities we consider networks functioning internally within the community and the networks creating external links to the community.

Nearly all the seniors interviewed relocated to the CCRC to be closer to family. Even when a resident had several children, the selection of senior housing depended greatly on where the strongest family support was found. Strong family ties were found to be an important for

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connecting residents to doctors, social activities and links to other community networks, such as church or hobby groups. "One of my daughters, one has lived here since 1988 and the other one about 10 years ago. And they know everything up here, all the best doctors… everything." (Susan, 84). Outside of strong family ties connecting them to resources, residents primarily relied on trusted doctors, insurance providers, or the internet to connect to resources instead of other CCRC community members, 83 year old Annie said, "Well I use a computer quite extensively and I look everything up." The use of internet sources was also supported when asked to staff who said "Independent is pretty good about using their computers and their phones. They Google! I mean, they're Googlers." Despite the importance of family, residents did not feel that the CCRC did much to strengthen or maintain family ties, beyond providing a guest table in the dining room and telephones for communication. Residents consistently described leaving the facility to spend time with family.

> I go to Florida. I go to New York. That's a problem though. You know, all of a sudden… everything happened at once. You get old at once, and all of a sudden, your old friends got older too and passed away. And so, all of a sudden you're the… the phone calls you used to have each week, for a half hour – they're not there at the end of the phone call. And that… you know, this is one of the most disturbing things that gets you to the point you're thinking "who the hell am I?" In addition to which, you are changing! (Dorothy)

As supported by literature, resident described how their social circles have shrunk (Arezzo & Giudici, 2017; Aylon, Yahav, & Lesser, 2018; Jiang, Lou, & Lu, 2018; O'Doherty, French, Steptoe, & Kee, 2017; Sugihara & Evans, 2000). The average age of interview candidates was 84.5. And as one interviewee remarked "Well when you live that long you're gonna lose your few of them." When asked if the CCRC helps to contact with old friends, one

respondent stated, "No. I think they try… But when you're not from this area, or you're not in tight with your church - this is a main thing here, the people…" Despite CCRC support some residents continue to travel, others use the telephone and one resident made her spare bedroom available to out-of-town friends and their grandchildren and could exchange visits in return like a senior's Airbnb.

> Well that social hour is more fun, and you get to know more people. And if you participate in their activities, this helps. But that social hour has been the best! ... And you get to meet people. You get to see different sides of them and it's fun. (Alice)

Although the CCRC was not found to play much of a role in helping residents maintain existing social ties, all the seniors did describe how social practices within the CCRC helped them develop new social ties within the community. One very effective way of helping resident community was the staff's policy of assigned seating in the dining room, which is rotated on a monthly basis. Thought is put into the creation of the seating arrangements which includes keeping couples together and the purposeful placement of new residents with a member of the Resident Council, which establishes a crucial network connection in order to assist the new resident in acclimating to life in the CCRC. This practice was consistently brought up and praised by residents in the interviews. As one senior explained: "Well we stay down at the dinner tables, you know, it's a good place to have a conversation and we change seats once a month…" Social Hour is a recurring event started by a resident in the CCRC and later supported by the staff who provide wine and include the event on the monthly activity calendar that is given to residents. Social hour occurs twice weekly on Monday and Friday. The Monday event is unstructured and generally has lower attendance because "people who are very, very chatty about

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personal things so anybody who's looking for stimulation – they dropped out." (Dorothy) For Friday's social hour, a self-appointed moderator brings in mind games and conversation starters.

The CCRC has two full time staff persons who plan and coordinate structured enrichment activities within the CCRC as well as those intended to connect residents to the local community. The ED runs a Tea and Discussion hour for ladies and a Coffee and Donuts hour for gentlemen, however staff indicated that spouses rarely split up and so there is comingling of the sexes at each event. The ladies' event was observed to have free, albeit, directed conversations and none of the participants lingered afterwards to continue socializing. The men's event is so new it was not on the event calendar and thus not observed. Both events take place in the SLR. Most activities are communicated via a printed calendar that is provided for each apartment. Notices are also placed in elevators and on "table cards" in the dining room. In addition to the two social hours as well as ladies and gentlemen discussion hours previously mentioned, there are several card games, fitness activities, a book club, a Bible study, dominos, bingo, movies, Ted-type Talks, and three resident committees. As one resident remarked "if you don't know what to do, you're not paying attention." All activities are made up entirely of residents with no external community participation. The one exception is a bridge club that formed at the invitation of the CCRC to nearby community residents but is currently made up exclusively of external community members and has no CCRC resident participation.

> We're so isolated here. We can't walk to anyplace, not many of us could walk even if there was a store within walking distance. But, uh, there's no public transportation. And we have to call Uber or one of those. (Blanche).

Structured activities in the community are limited to monthly excursions, typically to either dinner or a museum, and weekly shopping trips. "But I like going out and socializing

'cause that's when we all relax. And you get to know who's coming from where." (Dorothy, 85)

The CCRC also invites a local Methodist minister and organ player to hold church services in the AL dining room one Sunday per month. The service is typically attended by CCRC residents; it was not indicated that any of the Methodist churchgoers from the community come to the CCRC for this monthly service. The town center is some distance from the CCRC, so residents rely on CCRC transportation or private vehicles to participate in community events. Half of the residents interviewed were able to drive but the others could not. The CCRC does have a car with driver available but should be reserved at least a day in advance and is subject to availability. Friends and family were also indicated as means to get out to external activities. The ability to drive was connected generally with a higher social activity level and those who are unable to drive expressed difficulties accessing exterior networks. Church was found to provide a welcome escape from the CCRC with indications that church provides ties to friends, activities and even an Alzheimer's support group for one resident. In fact, one resident indicated that her lack of participation in community church was a barrier to developing stronger social networks, "There is a social life out there somewhere if it doesn't… it's closed to, unless you're in one of those groups" (Blanche). Shopping was a popular escape for some seniors who described developing weak social ties with store staff. One resident who favors shopping at consignment stores is helping a new resident to sell some of her antiques as part of transitioning to CCRC life. Volunteering and community events like a recent choir performance at a local high school, or community groups like the Rotary Club and Daughters of the American Revolution also provided ties beyond the CCRC.

Discussion

This case study set out to examine the role of third place in CCRCs toward understanding how these facilities might improve residents' health and well-being through supportive design strategies. Findings from this study underscore the need to support the social needs of seniors, whose lives are often uprooted as they move away from their (already diminishing) social networks to be closer to family post retirement. This CCRC, like many, is located in the suburbs of a city, thus geographically isolating residents' who no longer have the ability to drive to community events and other resources. Nonetheless, findings from this study suggest that designers and facility staff, working together toward a common goal, can help residents develop new social ties and improve well-being through establishing sense of place and community in their new home.

Social Support

The primary finding from this study was the role that facility policies play in helping to establish or inhibit third place. Although the designed environment is important for residents' satisfaction, activity engagement, and sense of place, it is not enough. Policy decisions can help overcome minor deficiencies in facility design and can also inhibit the establishment of third place in the most optimally designed spaces. The design of this CCRC generally aligned with EBD supportive design principles, with issues primarily related to lighting, carpet accents, and furnishing selections in a few spaces noted by the researcher (e.g., TVR, Game Room, and SAR.). Observations and interviews suggest that the TVR and Game Room do not host structured activities and are rarely used. The SAR, is frequently scheduled for games of cards, bingo, and dominos, is rarely used outside of scheduled activities, and does not function as a third place. The two spaces that were found to function as a third place, the SLR and IL Dining

Room, both align with EBD supportive design and some third-place design attributes (e.g., central location, views, and comfortable seating). They also both had a lively atmosphere (although not the playful atmosphere that Campbell (2015b) found in her study). Significantly, the IL Dining Room did not foster lingering outside of scheduled mealtimes. Despite this, it was a very successful third place for residents, in large part, because of the CCRC practice of rotating table assignments. Thus, social support – provided through staff-structured activities as well as practices that empowered residents to initiate their own events – was found to be a critical component for establishing third place in the CCRC.

Policy stipulating a monthly rotating assigned seat for residents in the IL Dining Room at lunch was surprisingly well received and supported by the staff interview, which indicated residents asked for the policy to remain in effect after being given the option to abolish it. The policy resulted in a socially level environment in the dining room and may have added to a sense of camaraderie, as one resident observed, "I think it's just people and food; and no matter how bad it [the food] is, sometimes um, we have a tendency to just laugh about it." Staff's directing new residents be placed at tables with someone on the resident council also creates early ties to the CCRC internal networks and eases integration. One interview with a couple who has been in the CCRC for only a month indicated that it already feels like home and they would not hesitate to ask fellow residents for assistance. One resident did request the use of name tags which this CCRC does not employ and would assist new residents as well as those who may be having trouble remembering names, though this could also be viewed as institutional with all the negative connotations connected therewith.

Lingering (lack of rush) was indicated as a key feature of third places (Campbell, 2015b; Rosenbaum, Sweeney, & Windhorst, 2009; Sandiford, 2019). Yet, residents seem to perceive

from CCRC practices that they are not invited to linger in most spaces. Observations found that in all the social spaces, excepting the SLR, including those without doors to control operating hours, residents arrived to participate in an activity and then promptly departed. Given the abundance of scheduled social activities that take place all over the community, residents may vacate a space immediately after an activity based on an assumption that another activity would commence shortly afterward. In office design there are often shared conference spaces and to aid the spontaneous use of these spaces, calendars are often placed on the door indicating scheduled events vs. open hours. A similar practice might be adopted for the social spaces in this CCRC. Schedules displayed in these locations could be giving "permission" for residents to use these spaces spontaneously providing they do not interfere with scheduled activities. This practice might ease the "rush" that was indicated in observations and support place identity as a third place.

Finally, although staff roles were found by the researcher to play a significant role in the success of third place, residents did not often mention the staff in the interviews. The staff in this CCRC hail from three different companies and may be unique. The food service and physical therapy staff are contractors, wearing different uniforms and with interactions limited to the environments that employ them. There is also the staff comprising administration, housekeeping, maintenance, and activities. Most observations in the lobby would see some resident asking the front desk person questions about activities, schedules, maintenance requests and even meal delivery (in lieu of meals in the dining room). Further, activities staff not only organize but also oversee and participate in many of the activities. Housekeeping and maintenance are found all over the building at any given time and residents were observed to greet them by name. It is interesting, given all these interactions, that staff was not identified in interviews as being a

resource either for social interactions or information. Furthermore, a few residents relayed that they do not use social spaces that are located near staff work areas because they do not want to be overheard, or "policed" by CCRC staff.

Sense of Control

Sense of control was another significant theme that emerged from observations and interviews in this study. Residents expressed frustration with their inability to reconfigure spaces to suite their social activities and lamented the lack of large tables to support collaborative activities like games and puzzles. This was particularly the case for the SLR and Game Room. Furthermore, observations and interviews suggest that the large number of residents who use wheelchairs and walkers are not always effectively supported by the facility design. In the SLR residents mentioned that one table was already removed but there were still accessibility issues for people using wheelchairs and walkers. Furthermore, the researcher found that there is often not space adjacent to scheduled activities to park the large number of walkers used by the seniors. These findings suggest that CCRC designers could be more sensitive to addressing residents' needs to feel ownership of their spaces, both by affording them opportunities to reconfigure spaces and better accommodating their needs for assistive devices.

Atmosphere for Positive Distraction

Studies in literature for supporting seniors, social environments and CCRC social environments refer to "homelike" finishes (Brawley, 2006; Kane & Cutler, 2009; Lundgren, 2000). Findings on what constitutes "homelike" are not universal, but avoiding "institutional" finishes (such as sheet vinyl harkening back to hospital stays) is easier to consider (Kane & Cutler, 2009). Findings suggest the design selections for this CCRC to be more hospitality-like than home-like. This hospitality atmosphere also seemed to be appreciated by residents and

positively contributed to third place (for example, the linen service in the dining room mentioned previously). In interviews, seniors described the furniture as "beautiful", but when asked if they would have any of these furnishings in their own apartment, the unanimous response was "no" indicating that it was perhaps not "homelike" but was attractive, nonetheless. One resident specifically noted the linen service in the dining room as an important aspect of the positive hospitality atmosphere in that space. Access to refreshments is a common contributor hospitality atmosphere and similarly space research themes for third place attributes (Campbell, 2015b; Rosenbaum, Sweeney, & Windhorst, 2009). The studied CCRC has two wet bars, one in the SAR and the other in the SLR. The AR does not provide glasses to serve the tap water available, although the SLR does, and neither have water coolers or juice machines that might support another third place attribute and expand use of the space(s) which were observed to be heavily utilized only during scheduled activities and not casually between events. Hospitality design often favors a style-neutral concept, which may be favorable in the CCRC to foster third place. One caution would be regarding feedback in interviews that the CCRC style felt too corporate and one resident specifically called out a lack of regionally themed artwork.

Changes to atmosphere in the many underutilized social spaces might also help foster third place through strategic design changes. For example, in the TV Meeting Room (TVR), the large sectional sofa, which is inappropriate for seniors, should be removed. Retaining the comfortable club chairs by the TV left on a sports or news channel might encourage residents to come in and stay. Alternatively, this could also be a good location for Wii activities found to support activity levels in seniors (Chao, Scherer, Montgomery, Wu, & Lucke, 2015). In the lobby the fish tank is an inviting distraction, there is a coffee bar, comfortable seats, and views to the outdoors – which would indicate high probability for an excellent third place. This is also the

only area with regular circulation of both visitors and residents, which might expand social networks. However, one resident indicated the lobby was too close to the "head shed" [administration offices]. Another indicated that there isn't enough space to feel like one is away from the front desk. Flooring changes might help alter use patterns and atmosphere in this space. The wood flooring is a dramatic contrast to the carpet surrounding and may be perceived as an elevation change. Residents were observed to closely follow the wood walking paths sidestepping in some cases to allow for cross traffic even though the transition in elevation from wood to carpet is minimal. Finally, in interviews many residents expressed desire for a store or bistro in the CCRC, which might support here a casual environment inviting residents to linger. Such as space might also support display of resident artwork or crafts, further encouraging sense of place and community.

Future Research

Staff and residents of a CCRC may be unaware of the multitude of studies linking the positive effects of socialization to increased health, decreased loneliness and the improved lifespan trajectories. Future research might examine these perceptions with respect to CCRC design and policies supporting third place. Additionally, this study found that CCRC policy might significantly impact use and function of third place. More research is needed to examine third place in CCRCs, which function as a unique community that is often geographically isolated from the larger city or town community in which it is located. Finally, CCRCs exist in a unique tension between concepts of residents' "home", their sense of being "away", and the corporate business of the facility organization and operations. This CCRC's social spaces reflected design decisions that one might expect to see in corporate conference rooms and break rooms. Future studies might examine staff perception of these spaces. Do they recognize tensions

related to perceived "ownership" of these spaces? Do residents feel they have permission to move the furniture and put their feet up in community social spaces? The concept of third place is broad and there has not been much attention to the particular attributes contributing to third place in unique communities like a CCRC. It is hoped that this study has focused attention to the need for more research in this area, particularly given the importance that strong and weak social ties play in health and well-being outcomes for seniors.

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APPENDIX A

Spatial Inventory

Facility: *Example*			Current Weather:		*Overcast, 72**	Time of inventory: *10:00am*	
Space	Flooring	Ceiling / Height	Wall Finish/Color	Lighting / Intensity	Noise Level	Proximity to res.	Other
EXAPMLE:Lobby	*Carpet: High contrast vines. Low pile hospitality style broadloom*	*2'x4' acoustic tiles. 10' ceiling*	*Text. drywall: beige*	*2'x4' fluorescent. Moderate intense.*	*Variable, low to moderate*	*200' from nearest resident, elevator required for non first-floor occupants.*	*Wood wainscoting*
Picture							
Space	Seating		Casegoods		Equipment		Comments/Condition
EXAPMLE:Lobby	*Sofas: Traditional/tapestry upholstery. Barstools: armless/leather uphol.*		*Coffee table: glass/iron. End tables: mahogany. Shelving: Mahogany w/staged accessories*		*TV (not on), bulletin board with monthly event calendar*		*normal wear*
Picture							
Additonal Notes/Observations							
Sofas appeared too deep for use by older adults, arms too high to assist egress. No obvious locations for wheelchair							
Lighting provided only by fluorescent troughs, no variation of light levels/type							

APPENDIX B

Observation and Behavioral Map

Date/Time: _____ Ambient Mood: _____ Observations and Behavior Mapping
Location: _____ Weather: _____ Length of Observation: _____

	Action: Recognition/Greet.	Location	
1	Notes:		
2			
3			
4	Action: Discussion - Banter	Location	
5	Notes:		
6			
7			
8	Action: Discussion - Events	Location	
9	Notes:		
10			
11			
12	Ambiance Changes	Location	
13	Notes:		
14			
15			
16	Actors: Non-Human/Human (Staff/Resident/Visitor)		
17	Notes:		Sketch of space
18			Additional Field Notes:
19			32
20	Networking: Information	Location	
21	Notes:		33
22			
23			34
24	Networking: Resources	Location	
25	Notes:		35
26			
27			36
28	Action: Useage/Manipul.	Location	
29	Notes:		37
30			
31			Ambient Noise Level: ____ Ambient Light Level: ____

APPENDIX C

Example of an Annotated Floor Plan
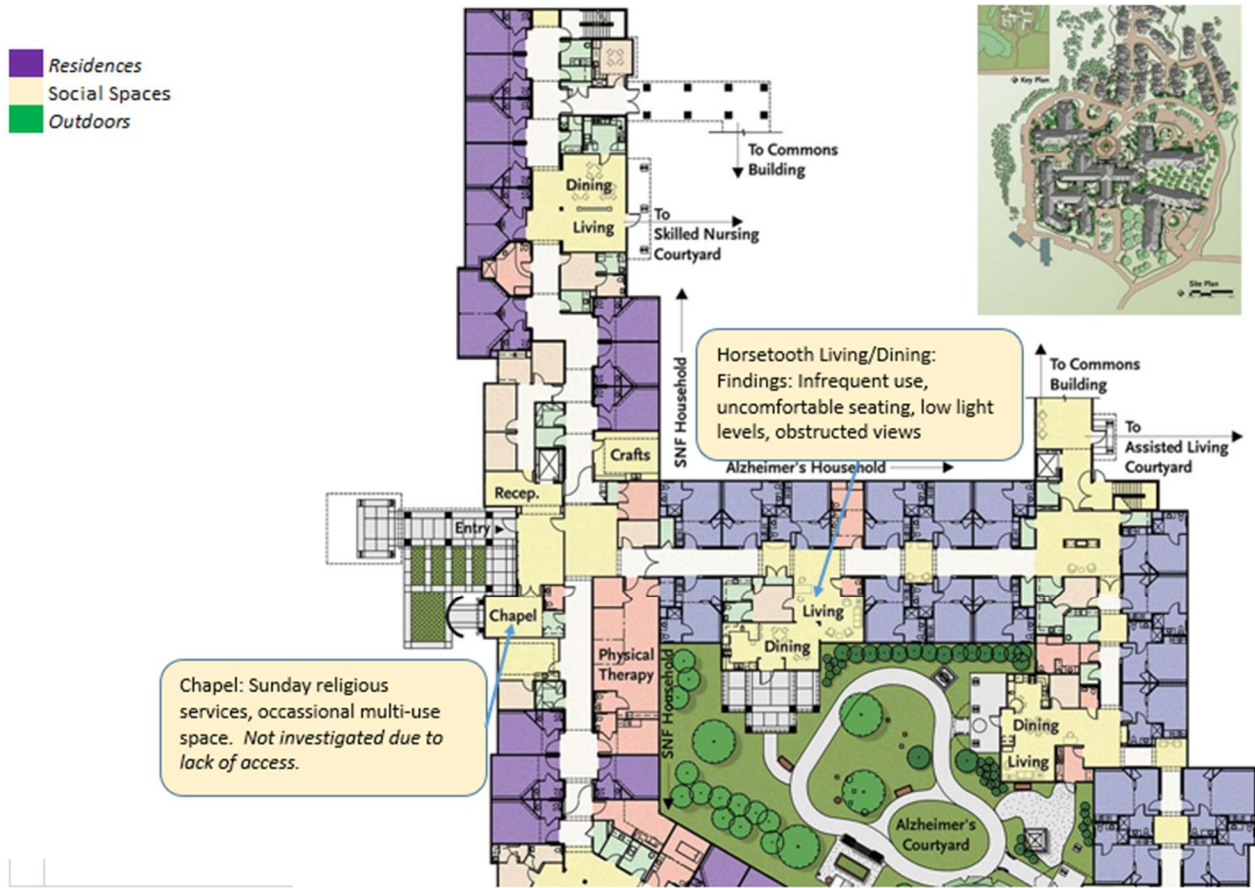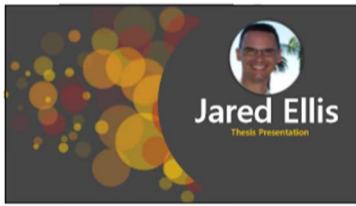
APPENDIX D

Semi-Structured Interview Schedule

Demographics:

1) What is your unit number?
2) How old are you?
3) Does anyone else live with you?
4) How long have you lived at this retirement community? Have you lived at any other communities?
5) What were your previous profession(s)?

Socializing:

1) What brought you to this community?
2) What does the community do to help you make new friends or assist you in keeping old friendships?
3) Where do you go to spend time with old friends? Where have you met new friends?
4) Where is your favorite place within the community grounds? Why? Describe what you like about this space.
5) What do you think of the decoration/style in the common areas of this retirement community?
6) What activities do you participate in? How do you find out about activities and events in the community? Is information posted in certain areas? Are activities held in certain spaces?
7) When/where do you tend to run into people you know?
8) Where would you go for lively discussion?

APPENDIX E
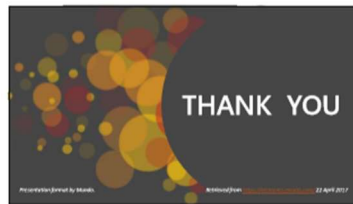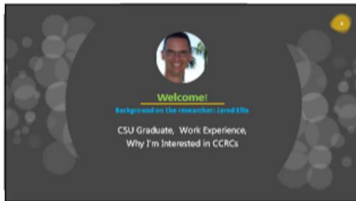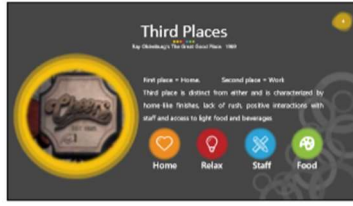
APPENDIX F

Facility Request to Participate

Date

Ms. Ria Foster
Hillcrest of Loveland
535 N. Douglas Ave.
Loveland, CO 80537

Dear Ms. Foster;

I enjoyed our meeting last week and am grateful for your support and participation in my research project. Would you mind providing a letter of support for my project that will be submitted with my Institutional Review Board application?

In summary, the focus of my research examines the intersection of the built environment and socialization in shared spaces within a CCRC. Much of the available academic literature focuses on socialization and health impacts on seniors in a CCRC. My study, however, seeks to investigate the concept of third-places and how interior design may encourage socialization, which is so important to successful aging.

My research plan includes three levels of data collection; a spatial inventory, direct observations and in-depth interviews with select residents. The spatial inventory will not impact normal function of the facility. Pictures will be taken as part of the inventory but will not capture faces of any residents or staff. Observations will be scheduled well in advance and I will be as unobtrusive as possible. Per the Committee's request, interviews will be conducted with residents who elect to sign up on the bulletin board. The value of this research lies in its contributions to evidence-based design. I hope that your board will understand and support this work as a key to future planning and decision-making for facilities and communities like yours.

My timeline is to receive your support in the form of a letter by DATE at which time I will submit the IRB application to receive protocol approval. I have also included short bios for myself and my two advisors. Dr. Malinin and Dr. Scolere have extensive design, research and strategic planning expertise and we are all sensitive to your needs.

Thank you very much for your time and consideration!

Warm regards,

Jared Ellis
Research Assistant and Graduate Student, Interior Architecture and Design
201 Pamela Dr. Loveland, CO 80537. 719.210.3279

APPENDIX G

Mr. Jared Ellis
Colorado State University
Campus Delivery 1574
Fort Collins, CO 80523

Dear Mr. Ellis;

Hillcrest of Loveland will be pleased to participate in your study, Third Place: Socialization and Community Building in CCRCs. We understand our commitment will be to provide you with access to all common areas of our facility for the purposes of a physical space inventory, scheduled observations and in-depth interviews. We will assist you in interviewing staff members but request that interviews be kept to break times and not interfere with the staff's normal operations. We request confirmation in writing of IRB protocol approval before you begin your study.

We would appreciate you sharing your findings in a summary report to us when you complete your thesis with the Graduate School at Colorado State University. If requested, we would also like you to make a short presentation to the resident-board.

Sincerely,

Ria Foster

Director of Resident Enrichment

Hillcrest of Loveland

APPENDIX H

Hello;

I'd like to introduce myself; my name is Jared Ellis and I am a graduate student in Interior Design conducting my thesis research at Colorado State University. I am interested learning about your experiences using the common areas in your community. I'd like to know if you have about 30 minutes to talk with me about your experiences? If you are interested, will you please sign this a consent letter to participate in the study?

APPENDIX I

CSU Design Study Sign-Up

Interviews will take place in: ***TBD*** Sign up with your unit number!

Time Slots	Mon. December 2	Tue. December 3	Wed. December 4	Thurs. December 5	Fri. December 6
8:00 am - 9:00 am					
9:30 am - 10:30 am					
1:00 pm – 2:00 pm					
2:30 pm – 3:30 pm					
4:00 pm – 5:00 pm					
-					

Goal is 20 interviews! Interviews last about 30 minutes.

What Are Third Places?

Ray Oldenburg's The Great Good Place. 1989

Researcher

Jared Ellis.
BS Interior Design from CSU.
15 Years Design Experience.

WHO CARES?

Retirement communities are designed for people who might not get around as easily as they once did. So social spaces within the community are vital to community building!

What can Architects and Designers do to make shared social spaces better?

First place = Home.   Second place = Work

Third place is different from home or work. Its where you go when you want to get away from home, to socialize with people, maybe enjoy a game or a drink. A place to "just be myself".

Comfortable   Engaging   Usable   Enjoyable

APPENDIX J

Letter of Informed Consent

The project is called *Third Place: A Qualitative Examination of Socialization and Community Building in CCRCs.* The researchers include Drs. Laura Malinin and Leah Scolere as the principle investigators and myself as Co-Principal Investigator.

We would like to inform you about this study and provide an option to either consent to participate in this study, or opt out of participation. The intent of this study is to gain deeper knowledge of how the physical design of public areas support community building and socialization within a retirement community. The interview you are about to participate in is completely voluntary.

Your unit number will serve as your identifier. I will not collect your names. With your permission, the interview will be digitally recorded. The intent of this research is to better understand how and if the social spaces within Hillcrest support community building and thereby improve lives of the residents.

There are no known risks in participation of this study. It is not possible to identify all potential risks in research procedures, but the researchers have taken reasonable safeguards to minimize any known and potential (but unknown) risks.

Should you have any questions about the research, please contact me at ellis_jared@yahoo.com. If you have any questions about your rights as a volunteer in this research, you may contact CSU IRB at: RICRO_IRB@mail.colostate.edu; 970-491-1381. Again, thank you very much for your support.

Sincerely,

Jared Ellis, Graduate Student
Laura Malinin, PhD AIA
Leah Scolere, PhD