

Utilization of Community Space in Affordable Housing and Assisted Living:
Design Recommendations for a New Housing Typology

by

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A Thesis Presented in Partial Fulfillment
of the Requirements for the Degree
Master of Science in Design

Approved April 2014 by the
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ARIZONA STATE UNIVERSITY

May 2014

ABSTRACT

The United States elderly population is becoming increasingly larger, there is a need for a more adequate housing type to accommodate this population. It is estimated that by 2020, there will be a need for approximately 1.6 to 2.9 million units of affordable Assisted Living (Blake, 2005). With limited income and higher health bills, adequate housing becomes a low priority. It is estimated that 7.1 million elderly households have serious housing problems. (Blake, 2005) The scope of this research will look at literature, case studies, and interviews to begin to create and understand the necessary design aspects of Assisted Living and Affordable Housing to better create a housing typology that includes both low income residents and Assisted Living needs. This research hopes to have an outcome of Design Recommendations that can be utilized by designers when designing for an Affordable Assisted Living typology.

ACKNOWLEDGMENTS

I want to acknowledge all of those who have helped get me through the last two years of Graduate School. A big thank you to all of my family, friends and supporters for being my personal cheerleaders and a shoulder to lean on when the going gets tough. A special thanks to the folks below for believing in me:

Kurt and Kathi Rothner

Andy Simpson

Lizzy Jeffrey

Amie Jane Dabu

And to my Committee members for answering my endless emails, and giving me the confidence I needed to keep producing great work!

Diane Bender

James Shraiky

Mark Stapp

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

As the United States elderly population becomes increasingly larger and older, there is becoming a need for more adequate housing to accommodate this population (Stone, Harahan & Sanders, 2008). It is estimated that 17% of seniors are classified as poor or near poor, with an average median income of only \$13,769 (Blake, 2005). The elderly can also have higher medical bills and less ability to perform activities of daily living (ADLs). Therefore a traditional single family home can become hard to maintain and a financial burden (Stone, Harahan, Sanders, 2008). Unfortunately for seniors with health needs living on a fixed or low income, there is not a wide array of safe and affordable alternatives to traditional housing. Although nursing homes might seem like the most realistic option, they are often very expensive and are not designed to cater to those who still want to maintain partial independence (Chapin & Dobbs-Kepper, 2001). Due to state Medicaid providers often paying for nursing home costs, there has been a governmental shift to curtail nursing home growth and to implement community based strategies to keep costs down (Golant, 2008). A more recent alternative to nursing homes has begun to make a breakthrough in the housing market. Assisted living is an alternative to nursing homes and affords a more homelike setting where patients have the ability to maintain partial independence. Assisted living is still a privatized system and there is no governmental standard that helps to regulate Assisted Living. As stated by Golant (2008):

“This identity is clouded by their very different development and management origins, diverse offerings of both high and low acuity care, varied service delivery strategies, they’re both licensed and unlicensed status, and the absence of a dedicated nonprofit organization championing their merits. This has resulted in uncertainty as to whether they have a common and distinctive mission.” (pg.5)

1.2 SIGNIFICANCE

With an elderly population that is continually growing larger, older and frailer, designers must find a way to design housing that can accommodate this growing population. It is estimated that by 2020 there will be a need for approximately 1.6 to 2.9 million units of affordable Assisted Living (Blake, 2005). As the baby boomers start to retire, there will be more people relying on Social Security benefits and personal savings to get them through their elder years. With limited income and higher health bills, adequate housing becomes a low priority. It is estimated that 7.1 million elderly households have serious housing problems, due to high rent burdens, or unaffordable home repairs (Blake, 2005). There is a current lack of Assisted Living housing that is geared toward this elderly subgroup of low income seniors, because Affordable Housing has not traditionally included healthcare and health promotion services. One of the reasons that Assisted Living may not be as successful as it promises to be is its lack of standardization of care (Golant, 2008). This is unlike its counterpart of Affordable Housing, which has immense governmental regulation. The researcher chose to focus on two sites in the Greater Phoenix area. These sites are each part of a larger parent company. This means, that even though the research only focused on two sites specifically, there is generalizability to a larger population. The researcher gained access (from a programmatic and operational standpoint) to over 27 facilities in the Greater Phoenix area, because of each facility’s ties to larger management companies.

1.3 OBJECTIVES + RESEARCH QUESTIONS

This research will discuss design recommendations that are important to the longevity of designing a successful affordable Assisted Living typology. This will be done through analyzing the current utilization of community spaces in an affordable senior housing development and an Assisted Living development in the Greater Phoenix area. Based on the subsequent literature review, the two research questions for this study are:

Q1: What are the design factors in the community areas that contribute to either the utilization or underutilization of space in Assisted Living?

Q2: What are the design factors in the community areas that contribute to either the utilization or underutilization of space in Affordable Housing?

By understanding the design considerations that are successful and unsuccessful, in both Assisted Living and affordable senior housing, a new affordable Assisted Living housing typology can be created by implementing design recommendations to facilitate housing for this specific elderly subgroup.

1.4 SCOPE

The scope of this research will include facility tours and interviews with property managers at two properties.

FACILITY A: Facility A is an affordable senior housing facility located in the downtown Phoenix area. The facility sits on a one and a half acre site located close to frequent bus transit and city amenities. The facility was built in 2006, but kept the original clubhouse on the site that was built in 1973. The clubhouse is currently used to house the community spaces. The facility is a 36

unit community with a mix of one and two bedroom units. These units are full apartment units with kitchen, living and bedroom areas. The facility is an income restricted property that was built using Low Income Housing Tax Credits (LIHTC). To be eligible for this housing at least one member of the household must be 55+ and meet eligible income restrictions. The facility welcomes Section 8 and Veteran's Affairs Supportive Housing (VASH) vouchers as well.

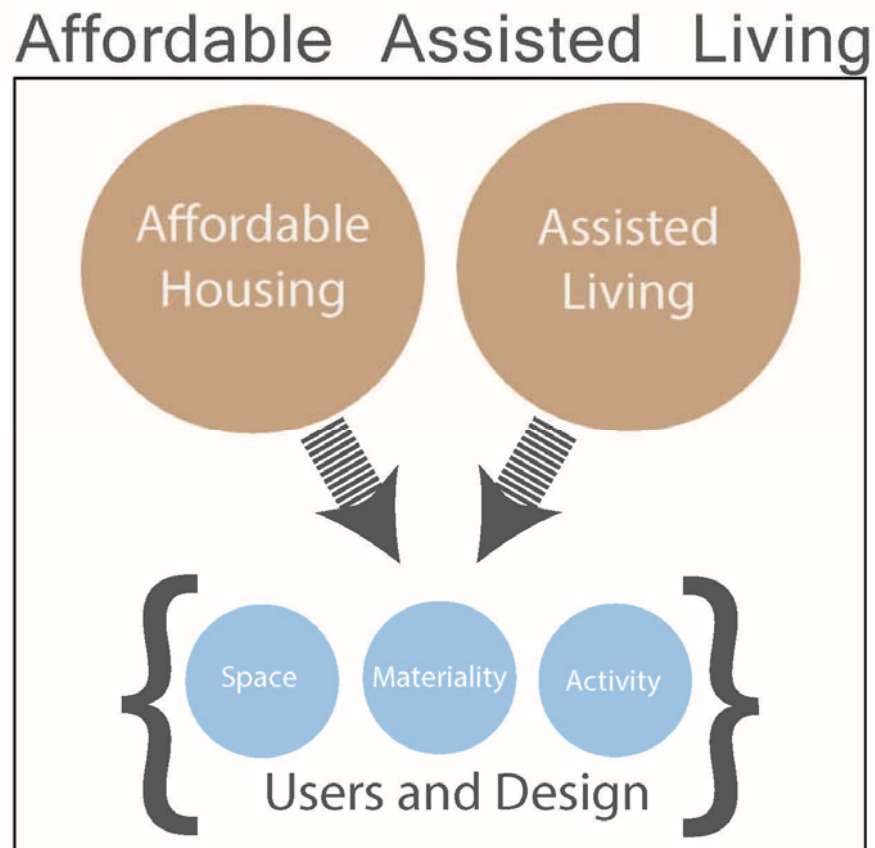
FACILITY B: Facility B is a market rate Assisted Living community located in Mesa, a suburb of Phoenix. The site sits on roughly three acres of land and is located near a main transportation thoroughfare with frequent bus transit. The community is a one story 63 room facility, built in 1997. The facilities' apartments include both single occupancy and double occupancy apartments, with private bathrooms and kitchenettes (sink, miniature refrigerator and microwave). The facility supports mainly Assisted Living, but also has a memory care section as well, that was not observed. Residents may use insurance or private funds to pay for the facility.

Although the scope of the research focuses specifically on two facilities in the greater Phoenix area, both of the facilities are part of larger companies with many similar properties in their portfolio, both in Arizona and around the United States. Because of the similarity of Phoenix to other larger metropolitan areas, these recommendations have the probability to be generalizable to other large western metropolitan areas where senior housing occurs.

1.5 CONCEPTUAL FRAMEWORK

The goal of this conceptual framework is to show the similarities that can be deduced from studying both Affordable Senior Housing and Assisted Living. The framework looks to take both the similarities and differences into consideration when it comes to utilization of space. This can be done because of the similarities in the populations served. Regardless of income, all populations served are similar in age and location, and are all judged on the same scale as far as health and living abilities. As shown in Figure 1, framework focuses on three main areas of improvement for community space utilization: Space, Materiality and Activity. The focus on these three areas is intended to provide design recommendations for an affordable Assisted Living typology.

Figure 1- Study Conceptual Framework



1.6 RESEARCH DEFINITIONS

Assisted Living: The medical definition of Assisted Living states it is a system of housing and limited care that is designed for senior citizens who need some assistance with day-to-day activities but are not sufficiently incapacitated to require care in a nursing home and that usually includes private quarters, meals, personal assistance, housekeeping aid, monitoring of medications, and nurses' visits (ALFA, 2014).

Affordable Housing: Affordable Housing is housing that receives direct or indirect financial assistance. It is housing that is developed outside the purely market-rate private system (Davis, 1995).

Baby Boomer: The generation of people born between 1946 and 1964, and has a large impact on society as the largest generation. This is due to the delay of families waiting to have children until after World War II. This generation is made up of almost 75 million people.

Activities of Daily Living (ADL): Healthcare terminology that refers to the self-maintenance care one needs to be able to do on one's own in order to live safely alone. These ADLs refer to dressing, eating, mobility, using the toilet, and personal hygiene. These are commonly referenced in senior living as a measurement of how much help one needs daily (Touhy & Jett, 2011).

Frequent Bus Transit: Transit must meet the projected frequency of stops. For the Greater Phoenix Area, this includes a minimum of 30 minute weekday headways from 6 am to 6 pm, a minimum of 1 hour headways from 6 am to 6 pm

on weekend days, a minimum of 15 hours of service on weekdays and a minimum of 12 hours of service on weekend days (ADOH QAP, 2014).

High Capacity Transit: This transit type is defined by the ADOH Qualified Allocation Plan as all existing light rail stations, the funded 3.2 light rail extension into north Phoenix along North 19th Avenue to West Dunlap Avenue, the 6 mile light rail extension to downtown mesa, the commuter rail, the inner city rail, and the street car routes in Tucson (2014).

Elderly: A person aged 62 years or older, this definition focuses on age and not the physical characteristics of the individual (HUD, 2014).

1.7 THESIS ORGANIZATION

This research will take an in-depth look at current research in the form of a literature review. It looks at existing research that supports a multitude of different focuses, including senior health needs, design for Affordable Housing, and design for Assisted Living. The research will then present the data analysis and findings from facility interviews and building analysis. Finally, the research will address conclusions and design recommendations based on research findings.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The literature review for this research can be split into four main focuses of defining and understanding the user (Men and Women 55 and older), Assisted Living, Affordable Housing, government regulations and design considerations for each of those foci. By having an overall understanding of each of these foci, it reinforces that all of these working parts need to come together to better understand the design needs of affordable Assisted Living. The research does this specifically through looking at public community spaces that are likely to have a large impact on sociability and health promotion of seniors in these environments.

2.2 USER

2.2.1- DEFINITION OF USER

In order to design a better housing type, the user must first be looked at in depth to understand his needs. This part of the literature review will look at the user in terms of population trends, healthcare needs of the population, housing trends of the population, and special cultural considerations.

The 2010 U.S. census states there were approximately 1.2 million persons 60 years and older living in Arizona, which is a 41.5% increase from 2000. This increase is almost double the national percent increase of 24.6% for people over the age of 60 living in the United States. By the year 2020, it is projected the number of 60+ people in Arizona, will jump to roughly 1.86 million people (U.S. Census, 2010). These projections show that people are living longer, and with that comes more health needs as well as an increased need for suitable housing (Golant, 2008).

2.2.2- HEALTH ISSUES THAT AFFECT THE USER

In order to focus on environments designed for the elderly, it is first important to understand the main factors that begin to affect adults in their later years. These factors can be categorized into three main types: physical health related issues, mental health related issues, and physical environment health related issues.

This section looks specifically at the medical syndromes that affect the elderly. If the designer of a facility can plan for these common illnesses, the interior spaces can be tailored to better accommodate the needs that are associated with older age. This research will look at the five most common syndromes that affect those aged 65 and older (Inouye, Studenski, Inetti & Kuchel, 2007). Knowing the symptoms of each of these syndromes can help the designer to better identify the needs of the user, and the design implications necessary to alleviate negative implications of living with these syndromes.

The five syndromes are ulcers, incontinence, functional decline, falls and delirium (Inouye et al., 2007). Ulcers are characterized as holes or breaks in the lining of the small intestine or stomach. Those people suffering from ulcers tend to have discomfort. Ulcers may be linked to poor dietary habits and stress. Both incontinence and functional decline are common syndromes due to age. The body becomes unable to respond as it did at a more prime age. Incontinence is characterized as the body's inability to control urination or defecation. Functional decline is the overall umbrella to characterize the loss of certain abilities normally needed to perform everyday life skills. Some of the abilities covered under functional

decline are vision, hearing, balance and memory. Falls and delirium are not necessarily medical syndromes. They can be the root cause of future problems, if an elderly person is suffering from falls or delirium. Delirium is characterized as severe confusion and disorientation. Falls are characterized as the inability to be safely stable on one's own feet, although not specifically hazardous to oneself. These two syndromes can lead to becoming seriously hurt or permanently injured (Inouye et al., 2007).

Based on these syndromes, one can look to the Activities of Daily Living a measurement tool used to measure how able a person is to live on his or her own without any help (Touhy & Jett, 2011). The Instrumental Activities of Daily Living Scale is shown in Appendix A Figure 5. Symptoms mentioned above can begin to lower the likelihood that elderly people are able to live on their own. This measurement system can help to assess this ability. A few different scales of activities of daily living exist. For the purpose of this research, the Lawton-Brody scale is referenced due to its comprehensive questions asked. The assessment tool looks at a senior's ability to 1) use the telephone, 2) go shopping, 3) prepare food, 4) maintain a clean household, 5) do laundry, 6) travel independently either using public transportation, car or taxi, 7) maintain medications and 8) handle finances. A low score can help to determine if a person is no longer a candidate for living independently.

2.2.3- CULTURAL NEEDS THAT AFFECT THE USER

The current research study focuses on the housing needs of seniors in the Greater Phoenix area in Arizona. Therefore, it is necessary to understand the different cultural concerns that are important for this population. The culture of

taking care of the elderly population is dramatically different in the United States than it is in most other countries and cultures (Adler, 2006). In more traditional cultures, elderly people are looked at as the Patriarchs/Matriarchs of the family, and tend to live with multiple generations under a single roof to teach the younger generations about life and the importance of their culture. This contradicts the United States common practice of putting elders into a home in which they can thrive, and have better care given to them without the design limitations of the setup of a single generational American home. This may create a stigma within certain cultures about putting the elderly in homes. It is important to identify cultures within the Greater Phoenix area to make sure that Assisted Living environments are accepting and nurturing of culturally specific needs (Adler, 2006).

Within relation to Phoenix, some of the more prominent cultures are Native Americans and Mexican Americans. Those from Asian cultures and African American cultures are also represented in Arizona. It is also worth noting that there are heavily concentrated populations of both members of the Catholic religion and the Latter Day Saints religion that have their own religious/cultural needs (U.S. Census, 2012).

2.2.4- SENIOR HOUSING TRENDS

Research by Blake (2005) identifies the lack of quality housing for the elderly due to the large influx of elderly in the last ten years, because of the magnitude of the baby boomer generation. It is estimated that by 2020, there will be a need for approximately 1.6 to 2.9 million units of affordable Assisted Living (Blake, 2005). As health worsens for seniors, more of their fixed income may go to medical bills, which

means less for housing. It is estimated that 7.1 million elderly households have serious housing problems (Blake, 2005).

2.3 FACILITY TYPES

The goal of this research is to analyze two different housing typologies for the elderly. By beginning to understand the successes and needs of both, a third type can be recommended that merges the important parts of each as a new housing typology. In order to recommend this new typology, it is important to understand the characteristics of each of the two housing methods under investigation. One typology is Assisted Living, which is a form of lower acuity housing where an elderly person receives some care and life assistance (ALFA, 2014). The other typology is affordable senior housing, which is government subsidized housing for those who are 62 and older with low or fixed incomes (HUD, 2014). It is important to note the basic characteristics of each housing type, as well as the demands of the housing types and their importance to senior wellness.

2.3.1- ASSISTED LIVING BACKGROUND

Assisted living emerged in the early 1990s as an alternative form of elderly care. It was intended to serve those residents who did not need round the clock care, but were not able to live safely and effectively by themselves. According to the National Survey of Residential Care Facilities (2010), there are over 31,000 Assisted Living facilities in the nation which serve about one million seniors. It is expected that this number will grow two and a half times by 2020 (Park-Lee, E., Caffrey, C., Sengupta, M., Moss, A., Rosenoff, E. & Harris-Kojetin, L.). Assisted living focuses on those who do not necessarily need heavy daily healthcare. Residents are often characterized as single people who could no longer live in their previous housing due

to limitations like the inability to drive, or are often times seeking more companionship than a single family home can offer. According to the Assisted Living Federation of America (2013), half of all residents are aged 85 and older. Of those, almost 40% are characterized as needing help with three or more activities of daily living. The median stay of those in Assisted Living is around 22 months, before they move on to either a higher acuity housing type like a nursing home or hospice, or they pass on. Assisted Living is said to be the fastest growing and most preferred long term care option for seniors (Stevenson & Grabowski, 2010).

Although there are no federal regulations for Assisted Living, it is regulated on a state to state basis in all 50 states and has become a popular option in the last five years due to the affordability in comparison to that of a nursing care facility (Chapin & Dobbs-Kepper, 2001). As of 2010, the median monthly rate for Assisted Living was a little over \$3,000 compared to that of nursing home care at around \$7,000. While \$3,000 a month is certainly not affordable for everyone, it is estimated that over 86% of those living in Assisted Living are paying this cost out of pocket (National Investment Conference, 2010). The \$3,000 a month in assisted living payments goes towards resident's rent, utilities, food, 24-hour security, housekeeping, health monitoring, lawn care, property tax, insurance, trash removal, repairs, maintenance and most in-house entertainment (National Investment Conference, 2010).

A typical Assisted Living residence includes many different amenities to help make daily living easier for a resident. These amenities typically include meals served in a common dining space, housekeeping, transportation, 24-hour security, exercise and wellness programs, personal laundry services and various social and

recreational activities (Kerr, Calson, Sallis, Rosenberg, Leak, Saelens, Chapman & King, 2011). Assisted Living facilities tend to have a fully staffed kitchen to prepare meals. However residents are also given anywhere from a full kitchen to a warming kitchen to be able to prepare meals or snacks themselves. Personal care for each resident is a little less typical and changes from facility to facility. Personal care can include assistance with eating, bathing, dressing, toileting and walking, in addition to third parties may come in and help with medical services like physical therapy or ongoing medical treatment such as dialysis, and help with taking medication (Chapin & Dobbs-Kepper, 2001).

2.3.2- AFFORDABLE HOUSING BACKGROUND

The Department of Housing and Urban Development (HUD) creates and regulates the standards for Affordable Housing in the United States. The generally accepted definition of affordability in terms of housing is for a household to pay no more than 30% of their income towards housing. If a family is paying more than 30% of their income towards housing, they may be eligible to live in Affordable Housing sponsored by HUD. Most Affordable Housing aims to supply housing to those who make between 30-80% of the Area Median Income based on the residents annual gross income, not including any exclusions they might receive (HUD, 2014).

Affordable Housing facilities are subsidized by many government programs, such as Section 202 and Lower Income Housing Tax Credits which are the most pertinent to this study. Section 8 is also a common form of housing subsidy that is utilized by seniors. Section 202 is a housing program that specifically targets seniors 62 and older and is focused on a supportive housing typology (HUD, 2014). This housing is for those seniors who wish to live independently but still might need light

daily help like cooking, cleaning and transportation needs. The Section 202 program gives capital advances to property developers who are building or rehabilitating senior low income housing. Those capital advances do not have to be repaid as long as the project stays in service to low income seniors for a minimum of 40 years (Schwartz, 2010). Section 202 also allows previously funded projects to receive project based subsidies which cover the difference between the operating cost and the amount that residents pay towards their rent (Schwartz, 2010; HUD, 2014).

Like Section 202, Lower Income Housing Tax Credits (LIHTC) is a governmental program that helps to provide low income housing. Tax credits are awarded to property developers based on a set of criteria defined individually by each state. After the tax credits are awarded, the developers sell the tax credits to large companies, at roughly ninety cents to the dollar, to raise the capital to build housing. Often times, LIHTC and Section 202 funding are used in conjunction to build senior low income housing. Unlike Section 202, LIHTC housing is not age restrictive, so developers can use those funds to develop low income housing that is not age restrictive. Because each state defines the criteria for how funding is awarded, certain states may include criteria that supports senior specific housing (Schwartz, 2010; HUD, 2014).

It is common for seniors to fall into the low income spectrum due to their inability to maintain a traditional income. Many seniors are retired and no longer working. They are dependent on their fixed incomes either from their retirement savings, social security payments or support from their children in order to pay monthly expenses (Davis, 1995). Because people are living longer than in the past, most retirement savings may be inefficient to maintain an adequate standard of

living (Skinner, 2007). Using housing subsidies can help to alleviate this financial burden. Affordable Housing is also beneficial for seniors because most facilities tend to be situated in urban areas with amenities within walking distances or available to get to by public transportation (Guhathakurta, 2000).

Research on Affordable Housing and Affordable Housing typologies specific to the elderly looks at past projects and suggest future trends and guidelines for new successful developments (Mihalko, 2003; Guhatharkurta, 2000; Golant, 2008).

According to Guhathakurta (2000) location and community size often contribute to the success of Affordable Housing projects. Because Affordable Housing is known to have an effect on the community, builders and the government need to be aware of housing placement based on location. Research has found that there is a need for community sizes to be manageable within Affordable Housing, so as to not over populate the area or create unsafe spaces within the community due to high density (Golant, 2008). Location is also important due to many low income families' inability to rely on personal cars as a mode of transportation. In Phoenix, Affordable Housing developments have been awarded to developers based on their proximity to schools, grocery stores and other public amenities, as well as being near both light rail and high frequency bus systems (ADOH QAP, 2014; Guhuathakurta, 2000).

Affordable Housing for the elderly has grown within the last ten years, and it may dramatically grow in the future as well, based on population trends and needs. Researchers discuss the importance of getting away from the institutionalization of senior housing, while also looking at the balance of how these housing developments need to foster a community like setting (Davis, 1995; Golant, 2008; Schwartz, 2010). Although Section 202 and LIHTC funding are the best sources of housing available

right now for the low income elderly population, Heumann (2004) states that “neither alone can provide the variety of housing, supportive services and locations needed by diverse low-income aging populations” (pg. 172).

2.3.3- ASSISTED LIVING WELLNESS

Because there are very few government regulations on what Assisted Living is or is not, there is much discrepancy from facility to facility, as far as what residents do and what residents can expect in their care (Chapin & Dobbs-Kepper, 2001). The acuity levels of the patients in Assisted Living reach many different spectrums. Although most Assisted Living facilities tend to have regulations on how sick a person can be when they enter, and tend to turn away people then, they have a harder time standardizing when a resident might need to enter a higher acuity housing facility like a nursing home or hospice care (Mihalko & Wickley, 2003).

Mihalko and Wickley’s (2003) research looks at the importance of an active lifestyle for elderly living. Because of the lack of standardization within Assisted Living, the promotion of daily active lifestyle tasks differ from housing development to housing development. According to this research, designers can begin to create a better space, by basing the activities that occur within these spaces around what the elderly want and need to do to facilitate an enhanced quality of life. Assisted Living market trends can be found in the research of Stevenson and Grabkowski (2010) and Chapin and Dobbs-Kepper (2001). Both of these teams’ research focuses on the market share needs for Assisted Living, how many people it can help and why it is important to create it on a more widespread level. Assisted Living is becoming more important as both the government and private pay consumers are looking for long term care that is not focused on institutionalization (Chapin, Dobbs-Kepper, 2001).

The elderly are looking for a space that delivers supportive services in a non-institutional environment. This demand is because of the 14 million elderly who will need care in the next 20 years (Chapin & Dobbs-Kepper, 2001). Wellness and aging in place is an integral part of the elderly's need for Assisted Living. In Assisted Living, residents are likely to live on their own, but often need some help performing certain activities, which include those on the list of activities of daily living (ADLs) (Mihalko, Wickley, 2003).

2.3.4- AFFORDABLE HOUSING WELLNESS

Wellness within Affordable Housing, looks at the common needs of low income residents, and the needs that may be specific to that population. Residents with lower incomes might require supportive services because they often have a combination of age-based chronic illness, low incomes and limited social support (Cotrell & Cardner, 2010). As stated by Huemann “the low income population is the most likely to find the cost of Assisted Living out of reach” (2004, pg.166). Therefore those who need the services are unable to afford these services on their own.

Supportive services in Affordable Housing may be necessary so residents are not improperly being considered for institutionalization, as supportive services have not been traditionally provided, leaving little space for those who are not candidates for institutionalization, but need more than independent living (Cotrell & Cardner, 2010). Some of the healthcare needs of affordable housing residents includes transportation to offsite medical services, feelings of social isolation and care of long term chronic conditions (Cotrell & Cardner, 2010; Golant, 2008).

2.4 AMENITIES AND DESIGN TYPICAL OF ASSISTED LIVING

Through a review of literature as well as case study examples, Victor Rangier has compiled a thorough review of design needs for building Assisted Living residences (2002). Rangier notes that core services are available in 92% of Assisted Living sites (2002). Based on his list, there are 14 core services that are included in Assisted Living. The ones that are most applicable to this research are 1) three meals per day, 2) assistance with basic ADLs, 3) medication assistance, 4) wellness activities, 5) beauty/barber services and 6) Emergency call services. He also lists the most common activities that are provided in Assisted Living. Those that are pertinent to this research include watching television, reading, spiritual and religious activities, cards and games, crafts, exercise, sports, dancing and gardening. According to the 1998 NIC survey, 31.9% of prospective residents chose a facility based on the services offered.

2.5 AMENITIES TYPICAL OF AFFORDABLE HOUSING

Amenities and design that are typical of Affordable Housing for this research are gathered from two places: The Arizona Department of Housing (ADOH) LIHTC 2014 Mandatory Design Guidelines and the Qualified Allocation Plan, and the United States Department of Housing and Urban Development (HUD) Section 202-Chapter 1 and Appendix 6.

ADOH's LIHTC mandatory design guidelines, suggest that the general design of the building should be appropriate to the neighborhood, and reflect the outcomes of neighborhood involvement (ADOH, 2014). The location should be chosen to reflect walkable neighborhoods that link to open spaces, public spaces and adjacent development in accordance to state and federal guidelines. Common areas in the facility include a community and office space on the same tract of land as the

low income housing project, and can either be a standalone building or incorporated into the overall building footprint. The community service facility must serve primarily individuals at or below 60% AMI. The facility must provide services at the facility that improve the quality of life for residents, and if fees are charged they must be affordable to those whose income is at or below 60% AMI. Projects that serve 80% or more seniors must be either single story buildings or multi-level buildings that serve all levels of the building (ADOH, 2014).

The ADOH QAP demonstrates that the project should include as many of these specific concepts as necessary if they want to be considered for federal funds for this project (ADOH, 2014). Projects with an urban location should be within one mile of a grocery store, senior center, hospital/urgent care facility, sports and fitness center, public park and public library and located near transportation cores. Communities for seniors should also include supportive services including monthly nutrition and financial literacy classes, onsite weekly transportation and onsite continuous accessibility to blood pressure and other health screening services as well as health promotion/prevention/recreation/wellness classes provided bi-monthly (ADOH, 2014).

Based on the type of funding a developer and designer are receiving, the criteria for building changes. For Section 202 funding design criteria includes supportive services such as meal service, housekeeping aid, personal assistance, transportation services and health-related services. At least five percent of the units and all of the common areas must be ADA accessible (HUD, 2014; Schwartz, 2010).

2.6 RELATION TO DESIGN

Because of the similarities in populations in both Assisted Living and affordable senior housing, there is a commonality within design concepts that are shown in both. Within community spaces and building design set up, there is a division of three main aspects that can be influenced by the interior design. These are Space, Materiality and Activity.

2.6.1 SPACE

The general set up of the facility that can be defined by specific rooms and spaces define these Assisted Living and Affordable Housing facilities. A common practice in Affordable Housing and service enriched housing that is subsidized by the government is having a single point of entry. A single point of entry is defined as one entrance that all residents and guests use and that connects to the entire community. Having a single point of entry in Affordable Housing provides a higher level of security (Towers, 2005).

The general design of the facility can also be mainly defined by the selection of corridor design. According to Davis (1995), the ideal practice in Affordable Housing would be a single loaded corridor. A single loaded corridor can be either an interior or exterior corridor that has rooms on one side, and access to views and natural light on the other (Davis, 2005). An interior corridor would provide more physical safety, as well as safety from the elements (Duncan, Travis & McAuley, 1995). But an exterior corridor decreases operating costs because it does not need to be heated or air conditioned. A double loaded corridor is less acceptable as a successful practice in housing, but can be used. This type of corridor meets architectural code and is sometimes needed based on space and cost of the design (Davis, 1995). Interior corridors, whether double or single loaded, have also been

shown as a successful exercise tool utilized by elderly residents. Elderly residents utilize interior hallway walking because of the evenness of the ground, the availability of handrails and/or close in walls to grab and steady oneself, convenience and the abundance of either natural or artificial lighting (Lu, Rodiek & Duffy, 2010).

Dining for an elderly population is focused not just on nutrition, but is also used as a form of socialization. Residents in Assisted Living often look forward to dining and tend to spend more time in the dining area, than any other area in the facility (Reginer, 2002). Long-term care settings, can help to promote a higher quality of life and the success of aging for the elderly in part because of the food and nutrition services provided (IOM, 2000). According to Reginer (2002), dining spaces should have lower than nine foot ceilings, with backed seats and chairs with backs. The space should also have carpeting and adequate lighting that will help residents who are sight and hearing impaired.

2.6.2- MATERIALITY

The materiality in both Assisted Living and Affordable Housing is significant for a few different reasons such as cost efficiency, durability, and safety. The elderly population has a high instance of fall risks as well as bleeding risks, due to decreased stability, poor sight and skin elasticity (Inouye et al., 2007). When choosing furniture for an elderly population the furniture requires more specific features such as more contoured support, and the ease of transfer from a chair to other surfaces or to another form of mobility (Holden, 1988). Flooring is another material that should be considered when designing for the elderly. Falls and fear of falling are a risk associated with over 60% of the elderly population over 65, and as age progresses, the numbers gets higher (Yardley& Smith, 2002). Using proper

flooring can help to reduce slips, trips and falls, as well as reduce injuries associated with falls. Flooring also needs to be durable and prevent surface contamination from spreading (Nada, Malone, Joseph, 2012). Some of the most cost effective, durable and nonslip floorings include terrazzo, linoleum and rubber. These flooring types also come in many different colors and textures to better promote way finding (Nada, Malone & Joseph, 2012).

2.6.3 ACTIVITY

One of the main reasons senior choose Assisted Living, is to combat the social isolation that tends to occur with the elderly, providing spaces for socialization within these housing types helps to combat the feeling of isolation (Regneier, 2002). Activities in these spaces include educational programing that help residents to increase their own health promotion, such as memory strengthening activities. “Activities that stimulate the mind, like reading and discussion groups, also create opportunities for friendship formation, informal social exchange, and the sharing of personal feelings” (Regneier, 2002, pg. 6). Other forms of activity that is needed for senior living residents is exercise. Exercise is important to a resident’s physical wellbeing, and helps to improve strength in the elderly which can lead to an increased quality of life, other reasons for exercising include avoidance of muscle loss, reduction of body fats, improved glucose metabolism, reduction in back pain and reduction in blood pressure (Cayley, 2008). Incorporating exercise for power training also helps older adults with improved motion, endurance, stability and cognitive status (Cayley, 2008).

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

In order to fully research this topic, research is being completed in a multitude of different ways. A qualitative analysis was used through a mixed method approach, mainly using phenomenology to show a comprehensive understanding of the subject. The aim is to create a recommendation of building needs and design that fit into both the standards for Affordable Housing and Assisted Living. The research was done using a phenomenological approach that looks at one Affordable Housing community and one Assisted Living community in the Greater Phoenix area.

3.2 LITERATURE REVIEW

As evident in the previous chapter, a literature review is used to understand data that pertains to this subject. A literature review should demonstrate the researcher's knowledge of the literature in the specific field of study, regardless of their relevance to the study or not, though most should be relevant to the study (Maxwell, 2013). This includes literature on the common health problems that seniors face as they begin to age, research that looks at the definition and implementation of Affordable Housing and Assisted Living, as well as design needs that are specific to the senior population, which can be found in both or either Affordable Housing and Assisted Living.

3.3 PHENOMENOLOGICAL APPROACH

A phenomenological approach allows the researcher to fully immerse in the interview and facility observation process and to be able to understand and learn

from the interviewee's point of view. This research takes a phenomenological approach to designing for the senior population, through an in-depth look at the current phenomenon of housing dedicated to a specific subgroup, in this case, seniors. "The phenomenon is studied in fewer people, but in a way that is more in depth, that would otherwise be possible to reach" (Connelly, 2010 pg.127).

Phenomenology is rooted on the basis of Edmund Husserl's work, and is described as a way for researchers to fully immerse themselves in research by putting aside our own consciousness and experiences and focusing on the experiences of the subject matter that is being researched (Husserl, 1970). Phenomenology is pertinent to this research, as it allowed the researcher to fully immerse in the subject, while withholding any ideals about the experience itself. Phenomenology allows the researcher to "examine how situations present themselves through the experience" (Wertz et al, 2011, pg.125). According to Girogi (2009), there are four steps in order to facilitate proper analysis using a phenomenological approach 1. Reading for a sense of the whole, 2. Differentiating the description into meaningful units, 3. Reflection of the physiological significance of each meaningful unit and 4. Clarifying the physiological structures of the phenomenon. These steps are commonly done through in-depth interviews, with interviewees chosen through focused sampling as identified in Section 1.4.

Although there are many instances of these Affordable Housing and Assisted Living communities in large urban areas, there is a very small pool of companies that build, own and run these communities. Therefore, the researcher felt by choosing two facilities that were run by larger parent companies, there was the ability to get to know two facilities on an intimate basis. It is noteworthy that these

facilities are likely to have many of the same qualities as other communities all over Phoenix because they are under the same ownership.

3.4 RECRUITMENT

Recruitment for this research used a two part approach to find qualified facilities with available interviewees. Recruitment was done by using a purposeful sampling technique to find eligible facilities within the stated geographic area. Interviewee's were then chosen based on job descriptions within the facility.

3.4.1 FACILITY IDENTIFICATION

To obtain interviews and observations at facilities, the researcher identified facilities in the greater Phoenix area that fit a specific criteria set forth by the researcher as determined through the literature review. Criteria for facilities included the facility being either an Affordable Senior Housing Community or an Assisted Living Housing Community. The facilities must also be of a mid-range size as defined by the AFLA (2013): Assisted Living facilities range from 25 beds (small) to 120 beds (large). Regardless of size, facilities should be perceived as small and intimate in order to not overwhelm the residents. Although 25 to 30 units is characterized as ideal, one with 40 to 60 units is a more common size in order to provide competitive rates and services (Regnier, 2002). Having amenities and supportive facilities were also an important condition of facility selection. Because of the phenomenological approach and the smaller sample size, it was important to choose facilities that were not independently owned, but functioning as part of a larger parent company. The researcher contacted 19 facilities, and was granted access to two facilities, one Affordable Housing and one Assisted Living.

3.4.2 INTERVIEWEE IDENTIFICATION

Interviewees were selected based on their job title and description. The researcher chose to focus specifically on interviewing a person in charge of the day to day operations of the facility. A person in this position would likely have the most interaction with both residents and facilities. In the case of the Affordable Housing facility this was the Community Manager. In the case of the Assisted Living facility, this was the Director of Resident Services.

3.5 INTERVIEWS

The interviews were done in-person and on location as semi-structured interviews. The interviews lasted approximately 30 minutes and were facilitated at roughly the same time during the day. Each interviewee was given a brief overview of the goals of the research, as well as verbal transcription of an International Review Board (IRB) approved research interview agreement. This agreement explained that the research was voluntary, that they could stop at any point in time, and that the research had no foreseeable risks. The semi structured interview focused on seven open ended questions with the ability for follow up questions based on the conversation flow (see Figure 2). All interviews were recorded and transcribed based on the approved procedure laid out by the IRB at Arizona State University.

Figure 2- Interview Questions

Question Number	Category of Question	Question
1a.	Funding	What are the types of government subsidies that fund your programs/facilities? (Affordable Housing)

1b.	Funding	What are the types of funding sources people use to pay for your facilities? (Assisted Living)
2	Space	What are the different types of community spaces available in your facility? And which are the most commonly utilized?
3.	Space	Do you have adequate spaces for the services that you provide?
4.	Space	Do you feel there is adequate space for 3 rd party companies to provide healthcare services?
5.	Safety	How often do you enlist the help of emergency services?
6.	Safety	Are there specific design features that are utilize for safety in the common areas?

3.6 FACILITY TOURS

A facility tour was provided to the researcher by the interviewee after the interview was completed. During the facility tours, there were additional open ended questions and conversation based on the flow of the tour. The researcher requested a facility tour that included the common areas of the facility. Each facility tour lasted about 45 minutes. Each facility tour was given in the late morning to see the activity levels going on during that time. The Assisted Living facility (Facility B) was also able to include a tour of a model residential room. During this time, the researcher was also conducting additional observations through note taking and asking further questions based on the topics discussed. The facility tours gave the researcher the

opportunity to observe the spaces during the day when residents were most likely to be using the spaces, as well as the opportunity to see the design of the spaces. The researcher paid specific attention to the materiality and design of the space.

Photographs of the spaces were taken during the tour of Facility A (Appendix A).

Facility B would not allow the researcher to take photographs, but allowed the researcher access to stock images that they had available. The facility went through an update just a few month prior, therefore the images are slightly different than what the researcher saw (material colors differed, but structure did not).

3.7 DATA ANALYSIS: THEMATIC CODING

After interviews were transcribed into a word processing software, the researcher coded the data using a thematic coding method. By pulling out key words from the interviews the researcher was able to code the data into reoccurring concepts. These reoccurring concepts were then translated into design strategies, which will be discussed in the next chapter. The researcher also used the same thematic coding based on notes from observations during the facility tours. Thematic coding is described as “a method for identifying, analyzing and reporting patterns within data” (Braun & Clarke, 2006 pg.6). Data analysis through a phenomenological approach also involves re-reading interview transcripts multiple times in order to identify important information (Connelly, 2010).

3.8 CONCLUSION

This chapter on methodology explained the study’s approach to the research. This included how the research was designed to demonstrate findings on design utilization in Assisted Living and Affordable Housing. This research was done

through a phenomenological approach using literature review, interviews, facility tours and observations.

CHAPTER 4

RESULTS

4.1 INTRODUCTION

This chapter shows the outcomes based on the interviews, facility tours and observations seen throughout the data collection process. The chapter looks at the different answers stated by each facility interviewee. Although there were six main questions, due to the semi-structured nature of the interview, there were additional questions asked after each main question based on conversation flow. Those answers will be grouped with the most relevant main question stated. Data was then analyzed through thematic coding, using a phenomenological approach. Based on this approach, the researcher transcribed the data, proceeded to listen to the recordings twice to confirm the main themes, and then read the transcripts twice to pull out main themes. Data collected through first person research was then compared to research collected in the literature review, based on best and common practices. These themes will then be analyzed in the next chapter, to compare the research to see common similarities and pull out important concepts that lead to recommendations for future design. A visual analysis of the data can be seen below in figures 4 and 5.

Figure 4- Thematic Coding Visualization

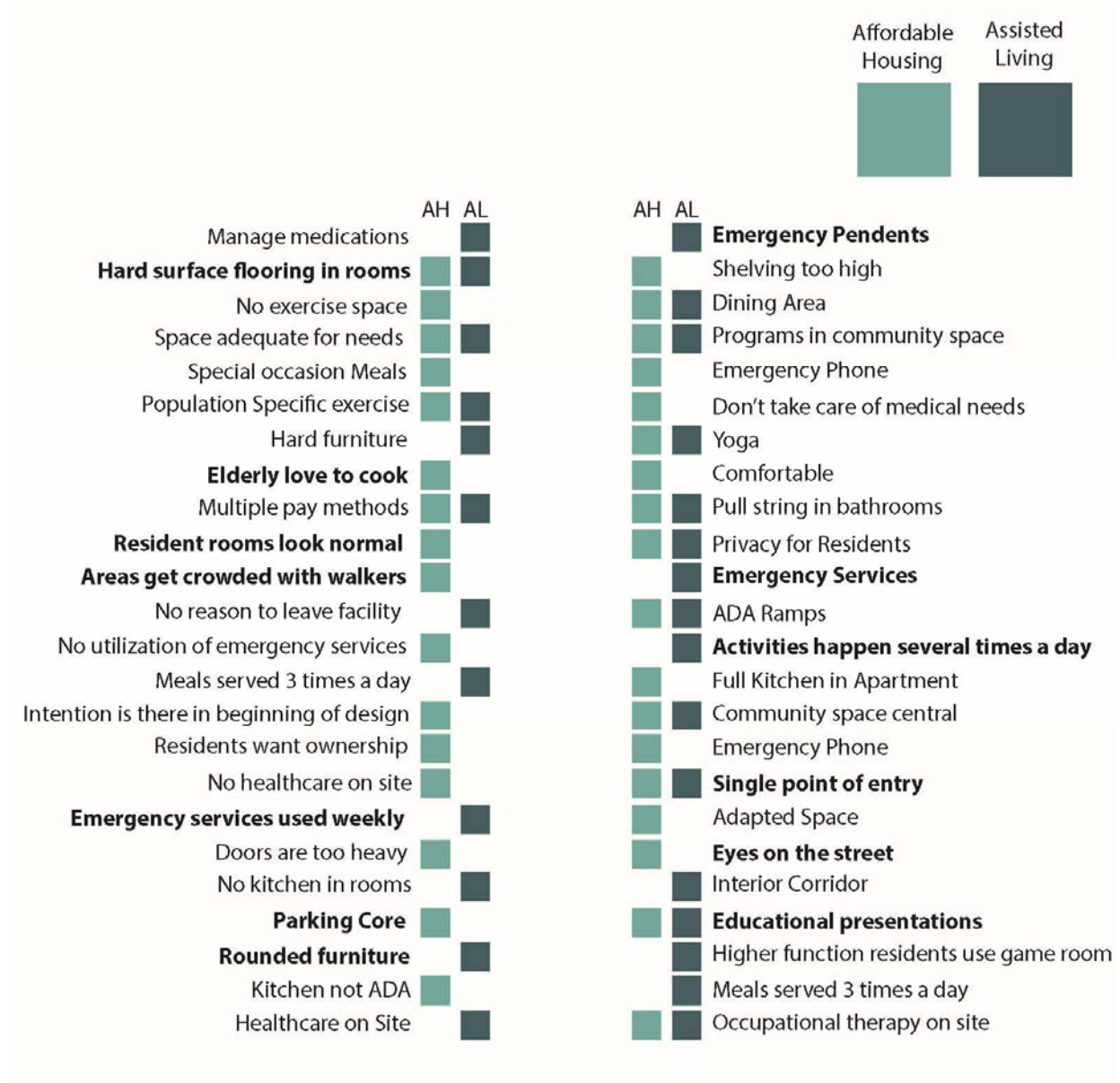
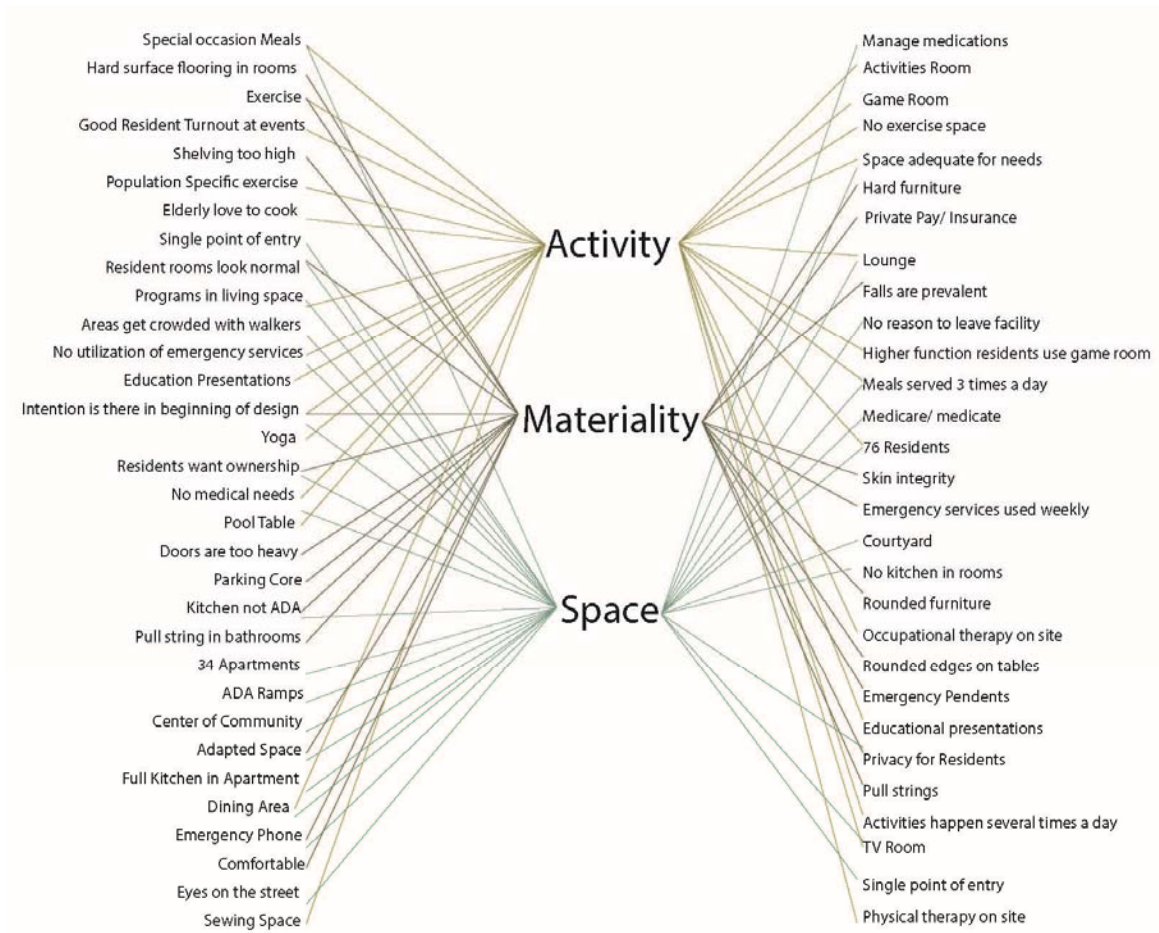


Figure 5- Thematic Coding Theme Organization



4.2 PARTICPANTS

4.2.1 FACILITY A INTERVIEWEE

The interviewee for Facility A (Affordable Housing) is a man in his mid-twenties who was the interim property manager and previously the resident services coordinator. His prior experience is in resident service coordination. Through the process of getting IRB certification for this data, after the initial contact of the facility on June 20th, 2013 and the interview date of November 27th, 2013 the initial property manager contact had parted ways with the company. Although the management company had hired a new property manager, just two weeks before the scheduled interview, the researcher had decided it was best to interview with the interim property manager, as he had worked there previously as the resident services coordinator, and had more knowledge of the property than the new property manager. The interview took place during the late morning.

4.2.2 FACILITY B INTERVIEWEE

The interviewee for Facility B (Assisted Living) is a woman in her mid to late 40s who is the Resident Care Director for the facility. She has spent time working in other similar facilities and in similar positions. She has a background in nursing and her focus with helping residents is based on her nursing background. The interview took place on January 14th, 2014 in the late morning.

4.3 SEMI STRUCTURED INTERVIEW RESULTS

4.3.1 QUESTION ONE A & ONE B

1a.	Funding	What are the types of government subsidies that
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		fund your programs/facilities? (Affordable Housing)
1b.	Funding	What are the types of funding sources do people use to pay for your facilities? (Assisted Living)

*Due to the different types of facilities, this question is split into two different questions based on the type of facility and the different funding processes of each facility.

4.3.1.1 FACILITY A

Due to complexities of the funding process, the property manager explained that they had no hand in the funding process. The interviewee provided the researcher the name of a person who worked within the management company, who was able to answer the question via email. The facility itself was built using LIHTC funding, and the project recognizes both Section 8 vouchers and VASH vouchers. At least one member of the household has to be 55 and older in order to qualify to live in this housing, and must be a low income resident who falls into an Area Median Income (AMI) bracket of 40% to 60%. In order for a 30% AMI resident to be eligible to live in the facility, they would need either a Section 8 or VASH voucher. Figure 3 shows how much residents must make in order to qualify for this housing type, based on their household makeup:

Figure 3- Area Median Income Table

	30 % AMI	40% AMI	50% AMI	60% AMI
1 person	\$13,260	\$17,680	\$22,100	\$26,520

2 People	\$15,150	\$20,200	\$25,250	\$30,300
3 People	\$17,040	\$22,720	\$28,400	\$34,080

Area Median Income Table for Maricopa and Pima Counties in Arizona

The interviewee said that for those residents who were on fixed incomes such as social security and disability the facility worked really well and those residents tended to stay for long periods of time. In fact, a number of residents have lived there since the residence opened in 2007. But he also noted that those who were still active and working, did not seem to stay long in the facility, and moved to other facilities with more of an active population.

4.3.1.2 FACILITY B

The interviewee in Facility B said that there were many different ways that residents funded their stay at the Assisted Living facility. She mentioned that the goal of residents would be to pay privately. She stated that although private pay is the goal, some residents also use private insurance as a form of payment. She also mentioned that resident’s family members also contribute to help residents to pay privately. Medicare and Medicaid may also be used to cover any expenses that are eligible for Medicare and Medicaid reimbursement. Although the facility would not tell the specifics of their particular costs of room and board, the average cost of Assisted Living facilities in the U.S. is \$3,000 per month (NIC Investment Guide, 2010).

4.3.2 QUESTION TWO

2	Space	What are the different types of community spaces
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		available in your facility? And which are the most commonly utilized?
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4.3.2.1 FACILITY A

The facility was built new in 2007, but the original clubhouse that was on the property was kept as part of the new design. The clubhouse was built in 1973 and currently houses all of the community spaces for the facility. The community spaces include a dining area, television room, community kitchen, sewing room, pool table room and an exercise room. The facility also has a mix of one and two bedroom units which are not in the scope of focus for this specific research study.

KITCHEN: It is of importance to note that although there is a community kitchen and a dining area. The areas are used infrequently as eating and cooking spaces during community events. Residents have full kitchens in their apartments and are responsible for cooking their own meals. The interviewee said that the ladies of the community would frequently get together to put on a large community dinner for special occasions. The interviewee told the researcher that most recently they had a Thanksgiving potluck, in which the residents cooked the side dishes and they received a donated turkey to cook and serve. The interviewee also mentioned that the kitchen, although utilized, was not designed with the elderly in mind. The countertops and cupboards were quite high, and there was limited storage to keep community kitchen supplies. The interviewee also mentioned that because the residents mostly used the kitchen for larger community events, the kitchen tended to get overcrowded because multiple residents were all cooking at once.

DINING AREA: The dining area of the community space, is utilized as the main socialization area of the clubhouse. The area has large round tables and chairs that can be moved around based on need. Residents utilize these tables not just to eat during community events, but also to play cards and games, and do crafting projects. The interviewee noted that residents requested doing a Christmas community event next month that involved painting ornaments (this would be done in the dining room area). The interviewee had reported that although the residents did utilize this space the most, the area tended to become crowded and at times hard to navigate because so many of the residents have walkers and oxygen tank which were often left in the aisle between tables where the resident is sitting.

TELEVISION ROOM: The television room is the most utilized room after the dining area. This space is an intimate area that includes a large television (TV), and a few sofas. The space is utilized as an area for residents to watch television either independently or during community events. These community events often include a themed event with a movie and popcorn. The interviewee mentioned that although the residents do watch the television in there, the space is not set up well for those who are hard of hearing. The only form of sound comes from the speakers that are located in the TV. The residents have often asked about the option to put in surround sound so that they can hear better. It is of note to mention that the one design factor the interviewee mentioned that was the worst about the space was the television space was sunken roughly two feet below the rest of the club house. Therefore two steps are there to transition from the dining room to the living room, and that is a constant concern with facility managers and

residents due to the inability for the elderly population to navigate stairs as easily as a younger population.

SEWING ROOM: The sewing room is a room that is important to this specific population that is served at this housing type. Although this Affordable Housing community welcomes everyone, there is a large population of Native American residents. These residents are very interested in being able to still hold onto their cultural identity. The sewing room is a way in which this can be done. The sewing room provides a space for residents to quilt, sew and socialize. The residents that use this room are mainly women, who tend to spend a lot of time in this room, and are frequently working as a group. According to the interviewee, the room is very well utilized by the women of the community, but there is limited storage. This limited storage means that residents have to bring their supplies back and forth as they use them. The room also only includes two sewing machines. The residents have expressed interest in wanting more equipment, specifically a loom for weaving projects.

POOL ROOM: There is not much to the pool room, but it could be considered the men's counterpart to the women's sewing room. The pool table room is mostly utilized by the men as a place to hang out and play pool games. The men in the community come together and utilize this space for game activities.

EXERCISE ROOM: This room, although labeled as the exercise room, could hardly be considered so. The room has one lone exercise bike in the corner of the room, and the rest of the space is utilized for storage. Although residents have expressed interest in adding more equipment in the room, the staff are concerned about safety. The interviewee did express interest in being able to do both

exercises that did not necessarily involve equipment, or purchasing equipment that was specifically designing for the elderly population. It was of note to mention that although the interviewee expressed interest in updating and revamping the exercise room, he also mentioned that there is only one resident who currently utilizes the space on a daily basis.

4.3.2.2 FACILITY B

The facility was built in 1997 and recently renovated in 2010. The community spaces include a dining area, television room, game room, activities room, lounge area and a courtyard. The facility also has a mix of one and two bedroom units, which are not in the scope of focus for this specific research study.

DINING ROOM: The dining room in this facility serves as the main area for eating for the residents. Residents do not have kitchens in their rooms, and are served three meals a day in the dining area. The dining area is the most utilized room in the facility. The dining room acts as not just an area for eating but also a place for residents to socialize. The dining room has large square tables that can be rearranged as needed depending on the meal, and the residents' seating preferences.

GAMING ROOM/ LIBRARY: The gaming room is used as an area for resident to play all sorts of games. They most commonly play card games including poker. The interviewee stated that although the room was utilized, it was only by a certain population within the community. The game room really served the higher functioning residents of the community. Although this is an Assisted Living community, the interviewee mentioned that for an Assisted Living residence this was one with a lower level of functioning residents. The gaming room is also home to a large set of bookcases, and books, and it often times utilized as a reading area.

ACTIVITIES ROOM: The activities room is considered their multi-purpose room, which includes tables, a television, and a small snack kitchen. As the room is utilized for many different activities, the interviewee noted that activities happen multiple times a day, and most take place in this space. The room also has a computer available for residents to use, as well as a musical keyboard. The activities room space directly connects and opens up to the courtyard, so the courtyard is often used as an extension of the space.

TELEVISION ROOM: The television room is utilized by residents all the time, but it is specifically utilized during the evenings. The television room has a large TV with two sofas and a few different seating areas as well. The space is also utilized as a space for community activities, where they will have resident movie nights and screen large sporting games.

LOUNGE AREA/LOBBY: The lounge area and lobby is the first area that is seen when entering the community. This space is used mainly for residents and family members when waiting to meet one another. Employees also use this space when talking with residents. Residents will use this area for one on one conversations with each other as well.

COURTYARD: The interviewee said that courtyard was well utilized during specific times of the year, when the weather was nice. Residents have the opportunity to be able to dine out there during certain months. There is also a smoking gazebo, and an area to garden. The building is a courtyard style building, so the courtyard is the center of the community. This allows for the courtyard to be accessible from almost any of the main common rooms. The doors from the activities room to the courtyard often stay open for the courtyard to be utilized as an extension of the space.

4.3.3 QUESTION 3

3.	Space	Do you have adequate spaces for the services that you provide?
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4.3.3.1 FACILITY A

According to the interviewee, the community space in the facility is adequate. He mentioned that they can make it work for their needs, but that if there was a new space being built there are definitely different decisions that would have been made. The living room is utilized for movies and the dining area is an area for presentations and any other activities. They also provide an activity called “Circle of Healing” every Thursday and Friday. The circle of healing is an activity rooted in Native American culture, that focuses on coming together and healing one another through talking openly and listen deeply (Wilbur, Wilbur, Garrett & Yuhas, 2001). This activity is done in the television space using the furniture and folding chairs to make up the circle. The one area in which space is a factor is providing activities outside. There is limited outdoor space and it is mostly parking area. The interviewee expressed interest in being able to provide outdoor space for exercise, such as a walking path. The interviewee also mentioned that when the building was built, it was clear that there was the intention to be able to include all of the spaces that they would like, but as the building goes into construction these often are the spaces that get cut first.

4.3.3.2 FACILITY B

The interviewee felt that there was adequate space for the services that they provide, but mentioned that she has been in other facilities where this was not the case. The interviewee also admitted that the spaces work well in part because of the high instance of residents with very low levels of functioning. Some spaces are smaller in size for the community, but only a small population of the residents utilized them. The activity room is the area in which they have to move furniture and change the space a lot to plan for specific events. She mentioned that this community in particular does not have an exercise room, so any exercise that takes place will happen in the activity area. Other than community events, the main healthcare need that the facility provides is managing medications for patients. Residents are given a test to see if they are able to manage their medications of their own. Only about five percent of their resident population manage their own medications. Staff are there to make sure residents are okay, and have everything they need including getting to doctors' appointments and grocery's. However, they are not able to give hands on medical care.

4.3.4 QUESTION FOUR

4.	Space	Do you feel there is adequate space for 3 rd party companies to provide healthcare services?
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4.3.4.1 FACILITY A

The companies that come into Facility A to provide many different services. These services could be anywhere from a weekly basis to a monthly basis, depending on the service. Yoga was provided by a 3rd party company, Conscious Community Yoga, who would come in on a weekly basis to provide free yoga to residents. Outside

community members were also able to be involved in the event. This program was fairly successful but the manager felt that the yoga was not geared enough toward the elderly residents, so is currently looking for a similar program that will provide exercise and health promotion that is specific to elderly residents. The facility also hosted a variety of presenters that came into the community to give lectures to the residents on elderly care. Some such presentations educated residents on the warning signs of diabetes, and how to manage diabetes. Presenters also come in from local hospice care companies, to provide important information on their next steps of living and how to begin to save for late in life expenses like hospice, or after life planning. Presentations are also given to residents on how to sign up for government programs such as the Supplemental Assistance Nutrition Program (SNAP), Medicaid, and Social Security. It is also of importance to note that the facility does not offer any medical support other than health promotion techniques such as education and exercise. The interviewee noted that residents might have night or day nurses that help them in their own apartments. The facility is not involved in this particular part of management because it is too much of a liability for them to be involved.

4.3.4.2 FACILITY B

In this facility, mostly all activities that are related to medical needs are provided by 3rd party services. Residents do not have to leave the facility to receive any of their basic medical treatment. Residents can do their physical therapy and occupational therapy on site. Hospice care and home health are also arranged for the resident at an additional cost. The facility has recommended companies that they like to work with, but it is up to the resident's discretion to choose their own care.

Doctors are also allowed on site to do medical visits with patients. The interviewee did mention that there is not dedicated space for these meetings to take place. The residents mostly choose to do their visits in their room, but are able to conduct their visits anywhere in the facility as long as HIPPA law is not violated.

4.3.5 QUESTION FIVE

5.	Safety	How often do you enlist the help of emergency services?
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4.3.5.1 FACILITY A

Because Facility A is just a senior specific housing community, it has no caretaking component to the living status of residents. The interviewee said that he was unaware of the need to enlist the help of emergency services. In his time at the facility [approximately four months as interim manager], he had not needed to call emergency services to help a resident. Thus, he would be unaware if residents called emergency services or went to emergency services on their own terms.

4.3.5.2 FACILITY B

Facility B acts as both a housing and caretaker for residents of the community. The interviewee said that emergency services were enlisted on average once a week. Emergency services are called mostly due to resident falls. The second most common reason emergency services are called at the facility is for upper respiratory infections like pneumonia and influenza.

4.3.6 QUESTION SIX

6.	Safety	Are there specific design features that are utilized for safety in the common areas?
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4.3.6.1 FACILITY A

Facility A has a minimal amount of design features that focus on safety. The interviewee mentioned that when building and designing Affordable Housing, there is the intent to include most the safety features. But as construction progresses, budgets get tightened and these design features typically are the first to be scrapped. Because the clubhouse (the area in which that the community areas are located) was retrofitted from the original site, most of the safety features that are incorporated are located only in the newly built residential units. Those safety features include non-carpeted non-slip hardwood flooring, safety pull strings and safety bars in the restroom areas. The whole facility is up to proper building code including the Americans with Disabilities Act (ADA) and Fire code standards. In the community space, the only safety feature that is included is a land-line phone for communication in the event of an emergency. The design features of emergency pull strings and grab bars in the restrooms and the non-slip, non-carpeted hardwood flooring were not implemented in the community space. The interviewee mentioned that he thought these implementations were left out due to budget constraints.

4.3.6.2 FACILITY B

Within Facility B, their emergency services span both the residential units and the community areas. Specific to the community areas, the facility design took into consideration its senior specific population, such as furniture without sharp corners

and edges. The interviewee mentioned this as important because the skin integrity of seniors makes it easier for senior's skin to bleed. Furniture is also non-skidding so residents can utilize the furniture and lean on the furniture without worry that the resident will slide or fall. Furniture is also harder surfaced, making it so residents do not sink into chairs. This way, they are better able to get up themselves. The whole facility is up to proper building code including the Americans with Disabilities Act (ADA) and Fire code standards. The community also operates with an emergency pendant service. With this service, residents utilize a wearable pendant that when activated contacts the front desk to let them know there is an emergency, who is having it and where the emergency is taking place. The staff then is able to appear at the location, and make a determination on whether the staff can take care of the problem, or if the staff should notify local emergency services. In addition to the pendants, both public and private restrooms are equipped with emergency pull strings.

4.4 FACILITY TOURS

4.4.1 FACILITY A

Facility A is a series of smaller buildings that make up the larger community. The common area of the complex is in a centralized area within the complex. Upon driving up to the community, there is a drive corridor that is equipped with surface parking, and the clubhouse area is halfway up the drive corridor, approximately 116 yards from the street. The interview took place in the Dining Room of the clubhouse, and then the interviewer was able to tour the different facility spaces. The tour included the dining area, TV room, sewing room, pool table area, kitchen and the exercise area.

4.4.2 FACILITY B

Facility B, is a courtyard building with surface parking. The community is serviced by one main entry and all of the resident spaces and community areas are off the circulating hallway around the courtyard, the main entry is right in the front of the community off the main street. The interview took place in a staff only area of the community. The tour included the dining area, activities room, television room, gaming room, lounge area and the courtyard, as well as a residents room, although the scope of this research does not include resident rooms.

4.5 OBSERVATIONS

Observations were done throughout the entire scope of entering, interviewing, touring and leaving the facility. In this case, the interviewer was also the observer, and utilized field notes as a form of writing down key observations.

4.5.1 FACILITY A

ARRIVAL/ DEPARTURE: Upon entering the threshold of the community, there is a clear sign that it is a tight knight community. Although the community is made up of a few stand along buildings, there is only one primary car entrance and exit. The community itself is not gated, but the driveway creates a feel of a single point of entry. There are residents standing on the walkways taking note of an unfamiliar vehicle as it transverses through the drive corridor. The leasing office, and club house are side by side. The interviewer met the interviewee in the leasing office, and then was escorted to the clubhouse area. In the leasing office there was a resident hanging out and talking with the office staff.

INTERVIEW: The interview took place in the Dining area of the community space. Therefore the interviewer was able to see the majority of spaces they were

discussing from the area in which they were sitting. This proved helpful, as the interviewee was able to point to specific features when talking about various areas. During the interview residents passed by the table, and the interviewee was always able to greet each resident using their proper name. During one point of the interview, it was also important to note that the interviewee said “see this here, this scares me”. This is an important observation because there was a notable tone of concern that goes beyond the idea of just being a manager, but of being a person who cares about the facility, and the people living in it. The interviewee at the end also noted that it was of benefit that there were not too many residents that were within ear shot, as many of the changes mentioned, would be of interest to residents and they would instantly want these things implemented, regardless of budgetary constraints.

TOUR:

DINING ROOM:

The Dining Area was filled with rounded folding tables that could be moved around as needed. The area is carpeted, and adjacent to the exercise room, the living room, reading room, and the kitchen. The tables were fairly close together, with the inability for people sitting at the table, to be able to sit back to back in chairs. The dining room is connected to the kitchen through a window/breakfast bar cut through a wall. In addition to the table and chair seating there are three bar height chairs at the breakfast bar area.

TELEVISION ROOM:

Within the television room, one of the first observations that stuck the researcher, was that the room was multi-level. Therefore there was the need to

step down two steps or enter on a ramp in order to enter the space. The researcher also observed that not every chair available had a view to the television set. There was only seating in view of the television for five residents, with an additional conversation corner with two chairs that were not in view of the television. The television area is carpeted with white walls, and minimal tribal artwork. The space also includes a large rock fireplace, and exposed beams, as well as some plant life. The television space is tiered directly below the reading area, and has a lot of natural light.

SEWING ROOM: The sewing room area space was little more than a wide corridor connecting the study area to the pool table room. The sewing room was scattered with different projects in the middle of being cut or sewed, and had no substantial storage. There were a few baskets used as storage that were located on the floor next to the sewing machine tables. Adjacent to the sewing room, were the two restrooms (men/women). The wall separating the bathrooms included two computers that were available for residents to use. The two sewing machine tables were placed underneath the large picture windows in the area, which helped to bring in lots of natural light. The sewing room had terracotta tile flooring and white walls, and minimal artwork.

POOL TABLE ROOM: The pool table room was fairly basic. The space included the pool table, a dart board, and four bar-height chairs for seating. The room had a long shallow window that let in natural light, but had just one small ceiling fixture for artificial light. The space had carpeted flooring, and white walls, and minimal desert scene art work.

EXERCISE ROOM: The exercise room is connected through the dining area. The space is cinder block area with white walls and carpeted flooring. The space includes one bike that looks is set along the back wall and door to the outside patio. The space has minimal windows, but has an arch opening and a pass through opening to the dining area.

READING AREA: The reading area, could be seen as a continuation of the television area as they are open to one another, but separated by a change in flooring height. The area has two oversized chairs, as well as one of the dining room tables with three chairs around the space. The space has white walls, with a large picture window, and a stone tile flooring. Although a different space from the television room, there is the opportunity to be able to see the television and participate in the activities going on in the television room from this reading area.

4.5.2 FACILITY B

ARRIVAL/DEPARTURE: Upon driving up to the entrance of the community, the researcher noticed that it was a courtyard style building with a single point of entry. Residents, guests and staff were all filtered in and out through one entrance, and all spaces were circulated from the main entrance in a circle, with a courtyard in the middle. The entrance area had a desk in which there was a sign in, but there was no person working the desk at that moment. However within, minutes the researcher was greeted with an employee who contacted the interviewee.

INTERVIEW: For the interview, the interviewee suggested the interview take place in an enclosed staff space because it was less noisy than other spaces. The

staff lounge, included a clock-in machine, lockers and seating for employee breaks. The space was less noisy, but each staff is equipped with radios, so they can connect with one another. Therefore, there was a constant background noise of the staff radioing to one another to communicate.

TOUR:

DINING ROOM: The Dining area in the facility, is a welcoming space, with a mix of round and square tables. The tables seat four persons each, but can be pushed together as necessary for different events. The dining area is a carpeted area. There is artwork on the walls, and double French doors that open up to the courtyard. The tables are set further apart than in a traditional restaurant. The area has a lot of natural lighting as well as artificial lighting. The researcher noticed that it felt like a real restaurant that people were eating at, complete with a multi-course meal, servers and china.

TELEVISION ROOM: The Television space is a long room with two Couches, and six oversized chairs. The space has area for both watching Television and having conversations as well. The area has carpeting and large picture windows as well as minimal artwork. The observer noticed that the space felt very cozy and welcoming. The room is very bright, the space is able to be a closed off space with the solid double doors. The windows have both valences and curtains to shut out light as necessary.

GAME ROOM/ LIBRARY: The game room and library are located in one space. There is a four person card table that can be used for cards and board games, as well as large bookcases with many books on them. The observer

noted that there does not look like there are any chairs in this space in which one might read in, and this might just be the area in which books are stored, and not the area in which people read in. There is also a writing desk that can be utilized. The space has carpeting, and a large picture window with valence and sheer curtains. The walls of the room are aligned with book themed artwork.

ACTIVITIES ROOM: The activities room is the logical multipurpose of all the spaces toured because the space gets utilized for many different purposes. The space has hard surface linoleum flooring, and two large tables with seating for 12, as well as a desk with a chair and computer that can be used by residents. The interesting thing about the space was that there was a kitchen in the area, complete with microwave, refrigerator and stove. This was particularly interesting as this is also the area in which group exercise takes place. The researcher felt that mixing the two activities of cooking and exercise could be potentially dangerous. The researcher noted that of all the spaces, this one had a bit more of an institutional feel to the space, due to style of the room and the linoleum flooring.

LOUNGE AREA: The lounge area is the first space that one sees when walking into the facility. It is welcoming and inviting, with light wood flooring, and a few different conversation areas with chairs and couches. The space also connects out to the courtyard patio with two French doors. The area is also home to the snack center where there is a popcorn machine, and water and fruit set out for residents in the event they get hungry when it is

not meal time. Above the water and snack area is also a bulletin board that has posted activities for the month.

COURTYARD: The courtyard is located in the middle of the facility, and is surrounded by resident rooms and community spaces. Most of the community spaces open up to the courtyard, but resident rooms do not. The courtyard is comprised of four main areas. 1) the gazebo, which is where residents who smoke tend to hang out, 2) the patio which is utilized on the hotter days as a shaded covered area that is still outdoors, 3) the dining area, which is adjacent to the dining room during the nicer months, residents have the opportunity to eat dinner outside and 4) The gardening space is an area where residents are in control of planting and upkeep of the garden area. The space is all grass, with concrete pathways that weave through the space and are wide enough for wheelchairs and walkers to utilize. The area has trees that provide shade, as well as shrubbery and flowers to enhance the garden feel. The observer felt that this area felt very safe, as even though it was outside there was a high degree of visibility, and residents were still contained within the community grounds.

4.6 CONCLUSION

The results of the reported data will be further discussed, analyzed and organized in the next chapter. The researcher will be making recommendations of design, based on the results of the data collection and the literature review.

CHAPTER 5

DISCUSSION

5.1 INTRODUCTION

The purpose of this study was to understand the utilization of community space in both affordable housing and Assisted Living facilities. This was done through a Phenomenological approach that included interviews, facility tours and observations. This chapter will look at the main themes that appeared throughout the collection and thematic coding of the data. Based on these themes recommendations will be made for the new housing typology. The main themes that emerged from the data analysis are space, materiality, and activity.

5.1.1 SPACE

The theme of space looks at the overall set-up and design of the communities, and the room types that are necessary in all forms of senior housing. The topics frequently addressed when dealing with the theme of space focus on the kitchen, dining areas, and master plan setup of the community.

For the kitchen and dining space, the researcher heard things like “shelving is too high”, “residents are served three meals in the dining space”, “dining as a gathering place”, “elderly love to get together and cook” and “meals for special occasions”. Through the data coding, the researcher found the importance of dining as a form of socialization. Whether the residents are cooking their own meals (like in the Affordable Housing facility) or are served meals by the facility itself (like in the Assisted Living facility), the key concept of all of these is being surrounded and socializing with other residents as they are enjoying food.

The master plan of the community is a big comfort to both residents and stakeholders in resident's lives who are helping to make a decision on their next housing choice. Common themes that were heard and observed based on the master plan of the community focused on "eyes on the street approach", "single point of entry", "visibility of cars driving in", "centralized community space", "enclosed outdoor space", "double loaded corridor" and "open core entry". These ideals all focus on the idea of residents being able to see and understand everything that is going on in the facility, and the idea that residents are an important part of the facility and have a stake hold in the facility by being able to see anyone who walks into the space.

5.1.2 MATERIALITY

Due to the health sensitivities associated with this senior population, there is the necessity to focus on materiality that keeps in mind health needs. These health needs that are focused on in the literature review, include balance, sight and skin integrity. With certain materials, there is the opportunity to avoid health scares utilizing specific materials and furniture. The researcher identified materiality the most in discussions and observations of flooring, furniture and finishes, and safety interventions.

The researcher heard and observed the concepts of flooring in "no carpeting in units", "multiple different flooring types", "snag less flooring types", "useable with walkers and wheelchairs", "no steps", "non-slip flooring", "hard surface flooring". All of these ideals fit with the concepts of flooring as a form of safety, as falls are the most common form of health concern with seniors (Yardley & Smith, 2002).

Designing for seniors with proper furniture and finishes in mind is closely related to that of flooring, as both can be utilized as preventative measures for falls and injury. The themes that were observed and heard in furniture were “no sharp edges”, “rounded edge furniture”, “important for skin integrity”, “non-skidding furniture”, “non-sinking furniture”, “residents can get in and out of on their own”, “resident can utilize”, and “residents do not hurt themselves”, “doors are too heavy”, and “surround sound for TV for those hard of hearing”. All of these concepts that were observed and heard are of importance to designers to choose furniture and finishes that residents will utilize, and more importantly furniture and finishes they will utilize safely.

Safety interventions in design were very different in the Assisted Living and Affordable Housing concepts. In Assisted Living, one of the main ideals the researcher heard was that the intention of safety and design, is present through the initial design process, but as budgets change they are one of the first things to go. Therefore, in Affordable Housing, the researcher observed and heard concepts like “emergency phone” and “safety interventions in residential units” and “up to ADA/ Fire Codes”. Whereas in the Assisted Living community, the researcher heard many different safety interventions such as “pull strings”, “grab bars”, “safety pendants”, and “manage medications for residents”. Although these two differed in their safety interventions, the concept of safety was still important from both management perspectives, even though budgetary constraints changed what they were able to implement through building design.

5.1.3 ACTIVITY

The Activity concept focuses on the spaces that are important to the senior housing population, and are more than living spaces. These spaces include the gym/exercise space, multipurpose activity, educational activity, and community gathering activities.

There was discrepancy within the literature review and data collection, between the need for a gym versus the need for exercise and health promotion. Through data collection and observations, the researcher heard instances of “population specific exercise”, “exercise room is constantly utilized by only one resident”, “our population is not a high functioning population to utilize equipment”, “not enough space for exercise”, “exercise space outdoors”, and “yoga worked well”. These overall ideas show that although exercise for residents is important, exercise in a traditional form of gym equipment might not be the best type of exercise for a senior population. There is also the idea of residents and their need to take care of their health. The researcher heard and observed concepts such as “the residents are centrally located to healthcare buildings”, “residents do not need to leave the facility the doctors will come to them”, and “physical therapy and occupational therapy on site”. This shows that there was an ease for residents to be able to schedule their own appointments in close proximity, in the Affordable Housing typology, or in the case of Assisted Living where staff would help facilitate the medical needs for the residents with a third party service on site.

Educational activities that dealt with health promotion seemed to be run as equally and as frequently as the exercise programs themselves. The researcher heard things like “education opportunity”, “diabetes education”, and “home health presentations”, “hospice presentations” and “SNAP program education”. Although

these educational activities may not require larger spaces, they are likely to require connectivity and technology to allow making presentations to residents easier.

The last form of activity is the idea of socialization and community gathering activities. Although, these activities do not focus on the physical wellbeing of residents, they are still important to the mental wellbeing of residents. The researcher heard concepts like “multiple activities provided a day”, “high functioning residents use game room”, “Residents do not need to leave facility”, “residents cook for one another”, “residents like to watch TV at night”, “Activity room is used all day” and “Residents like to get together and do projects together”. This shows the flexibility that is needed as far as the vast difference in the types of activities that may take place, and how the design needs to be respectable and utilizable for all of these activities, whether they are social, educational, health, or health promotion related. In a realistic building footprint, there is simply not enough space or budget for a specific room for each activity.

5.2 DESIGN RECCOMENDATIONS

5.2.1 SPACE

5.2.1.1 CORRIDOR SET UP & SINGLE POINT OF ENTRY

In Facility A (Affordable Housing), the researcher found that the community was made up of a series of small two and one story buildings, with no single point of entry, but a dedicated entrance to the land, that facilitated the feeling of a single point of entry. In Facility B (Assisted Living), the researcher saw a community that was a single story courtyard building, with a dedicated single-point of entry, with facilities and resident rooms that were connected by an interior double-loaded corridor. In the literature review, the researcher found that the best practices for

community set up was a single loaded interior corridor, with the ability to utilize a double loaded corridor or exterior single loaded corridor based on need and budget restraints.

5.2.1.2 DINING

In addition to the set-up of the community, the dining space was an area that was utilized by both housing forms, but in different types of ways. In Facility A, the researcher found that there was a community kitchen and dining area that was utilized for special occasions, put on either by residents or the community managers, while residents themselves had full kitchens in their rooms to utilize for meal making on a daily basis. In Facility B, the researcher found that residents did not have kitchens in their apartments, and therefore utilized the dining room three times a day as the main form of eating venue. In the literature review, it was noted that communal dining is of importance in senior housing, as it gives residents an opportunity to use meal time as a form of socialization. Facility B also mentioned that meal times are used as a check in point for residents. If residents do not show up at meal time, a member of staff check on the resident to ensure that the resident is safe.

5.2.2 MATERIALITY

5.2.2.1 FLOORING

In Facility A, the researcher heard that although these spaces are built for seniors, the special considerations that could be made for them, often times do not make it through the preliminary designs of new facilities due to budget constraints. This is particularly seen through the multiple different types of flooring that included rough and uneven stone flooring, slippery tiles and the changes in flooring

depth. In Facility B, there was no mention by the interviewee of flooring types, but observations showed that their whole facility was on one level, and the differences in flooring were utilized as a way finding technique, which showed specific flooring for different room types, but were all kept to a non-slip linoleum. In activity spaces linoleum and harder flooring was used, whereas in spaces that were more conducive to sitting, like the dining area and the television area there was carpeting. The literature review found that hard non-slip flooring is the best form of flooring for seniors to traverse. Way finding techniques can also be utilized through changes in flooring to delineate specific types of spaces.

5.2.2.2 FURNITURE

Using furniture that is specific to seniors can have the same safety benefits as flooring. As mentioned above in Facility A, there is the same tendency to include these senior specific design aspects, but the specific furniture rarely gets past the initial design concepts due to budget constraints. This can be seen specifically in the heights of furniture used. In Facility A, there were many bar height chairs which would not be safe for seniors because of a seniors need to physically climb up the chair to utilize it, they would be unable to use their assistive devices to help them. In Facility A the normal height chairs and sofas, were an acceptable form of seating for seniors, because they had a harder, non-sinking design to them, which allows residents to not sink, and therefore residents can get in and out of them without assistance. The interviewee also mentioned that the heights in the kitchen are based on a traditional user, and those utilizing the kitchen would prefer to have more storage that was lower and more accessible. The possibility of having lower countertops was also mentioned. In the interview with the Facility B interviewee,

the researcher heard her mention that having furniture with rounded edges is important, so that residents do not hurt themselves on the hard and sharp surfaces. She also mentioned that having furniture the residents could utilize without help is important. Some of these factors include residents utilizing furniture with hard surfaces so they can lift themselves in and out of the furniture.

5.2.2.3 SAFETY INTERVENTIONS

The final materiality consideration focuses on the safety interventions provided with the housing types for this specific population. In Facility A, the main design considerations for safety are more focused in the resident rooms, due to budget constraints. The community is fully compliant with proper building code safety, including ramps and fire alarms. The main safety consideration is the phone in the community space that can be utilized for residents to call for help in the event of an emergency. In facility B, each resident is equipped with a pendent system, which alerts the main desk when the resident has fallen or is in need of help. The facility also has pull strings in the restrooms which serve the same purpose.

5.2.3 ACTIVITY

5.2.3.1 GYM & EXERCISE

In Facility A, the researcher saw an underutilized exercise space that served double duty as a storage room. The only exercise machine that was in the space was one stationary bike. The researcher found that exercise activities also took place outside of the gym. These activities were less oriented to specific machines, and utilized the area for yoga and other similar activities. In Facility B, there was no dedicated gym space, but many of the activities that were provided focused on exercise activities. Some of these activities included yoga, morning stretch and

Nintendo Wii. In both of these facilities, there was no clear designated gym, but the idea of exercise and health promotion was very much facilitated within both housing types. In the research, there are instances in which gym areas with senior specific equipment are the main form of exercise and health promotion. But the space footprint, budgetary constraints, and needs of the residents in the research sites under investigation showed that a gym was an underutilized way of getting residents to exercise.

5.2.3.2 EDUCATIONAL SPACE

In both Facility A and B, because of the similarities in age of the population, most of the educational activities that are done at the facility were very similar. Some of the educational activities included Diabetes and Hospice presentations. These presentations helped to build awareness and to make sure they know the next steps, and be aware of illnesses they might develop in their later years. In the literature, the research shows that in order to design for Assisted Living, there should be programs that support wellness (Reigner, 2002).

5.2.3.3 COMMUNITY GATHERING EVENTS

In Facility A and B, both communities created events that used community gatherings as a form of socialization. Research mentions there is a need for residents to participate in socialization activities. These activities help residents to interact with others and not just stay in their rooms and become reclusive (Reigner, 2002). At both facilities, activities included Thanksgiving potlucks, Valentine's Day card making and movie nights. All of these events do not necessarily need a designated

space, and many could take place in the main activities space or television room in the facilities.

5.2.3.4 MULTIPURPOSE SPACE

Based on the activities that both interviewees discussed, the researcher noticed a clear need for space that serves multiple and different purposes. In Facility A the interviewee said, “the space is kind of choppy, but we make it work for our needs”, and in Facility B the researcher heard that between five to seven activities happen in these spaces daily. In a single given day, the activities room could be used for morning stretch, bingo, cards and a nighttime social. Typically Assisted Living has many separate rooms for each activity such as, gym, cards, exercise, and crafting, but with the small budget and tiny space allocations for Affordable Housing. The researcher saw that a space that can hold many of these different activities during different times could be a better use of space, budget and building footprint.

CHAPTER 6

CONCLUSION

6.1 INTRODUCTION

The purpose of this research was to understand the necessary design considerations that would go into building a new affordable Assisted Living housing typology. An affordable Assisted Living housing typology would combine the federal low income housing concept with the supportive services that are included in the Assisted Living housing. The research showed that many services that Assisted Living provides, are already provided in Affordable Housing, but the space in which the services are provided are very different. Affordable Housing utilizes a much more multipurpose type space that provides flexibility to host different types of services, whereas Assisted Living uses a rigid set of spaces that are utilized for different services, and also includes a space that can be utilized as multi-purpose based on programmatic need.

The research utilized a phenomenological approach to data collection which used employee interviews, facility tours and observations to see which design concepts might be the most imperative. The research showed that a closed facility that has a single point of entry, and double loaded interior corridors would be a recommendation for the housing that took both Assisted Living and Affordable Housing into mind. The recommended facility finishes should also focus on the needs of the senior population, and the spaces should be flexible for a variety of different service and programmatic needs. The recommendations also focus on the space for activities that are specific to an affordable Assisted Living housing typology. The

researcher recommends that there be a few different multipurpose spaces that are designed to be able to handle many different forms of activity.

6.1 FUTURE RESEARCH

This research provides recommendations for a safer living concept that could be provided to lower income residents who are 62 and older. Future research in this discipline should look into doing similar research with a larger sample size and also including a resident's perspective. Future research could also look at the design of the healthcare space that needs to be provided for the third party healthcare service providers. Future research that is not in the realm of design should also look into the governmental regulations that would need to be adjusted in order to provide this type of housing to Affordable Housing residents, as well as the potential for alternate subsidies that may be utilized to build and manage this housing type. As the demographics of the U.S. elderly population continue to change, there will also be a need to identify specific design choices and services that support the different types of elderly populations. The Baby Boomers born in 1946 to 1955 had a childhood filled with political unrest and the assassinations of John F. Kennedy and Martin Luther King, Jr. and the fears of being drafted. They tend to be very free spirited. In contrast, the Baby Boomers born from 1956 to 1964, faced a childhood with the Cold War and the Vietnam War, as well as inflation and gasoline shortages. These baby boomers were less optimistic than their older counterparts, and have a general distrust of the government (Schuman & Scott, 1989). Identifying the differences in the different elderly populations who will soon be utilizing these housing types, shows that services and needs will change as the elderly population changes.

CHAPTER 7

DESIGN RECCOMENDATIONS BASED ON DATA ANALYSIS

7.1 RESEARCHER RECCOMENDATIONS

The researcher set out to design a new housing typology, Affordable Assisted Living, by analyzing two different housing typologies that serve a similar population. This research looked at an Affordable Housing community and an Assisted Living community to be able to understand the utilization of space and services, in order to define the space and design that might go into this new housing typology servicing similar populations. Overall, the researcher found similarities between the types of services provided, but saw a difference in how the spaces for the services provided were designed.

The analysis of the research found that there were three main areas that were of importance for design. These three areas focused on space, materiality and activity. By collecting data through researching the two housing typologies and looking at current research, the researcher was able to recommend the design strategies and recommendations provided below, to help a designer better plan for an affordable Assisted Living housing typology. The design recommendations take into account the concept of budgetary constraints. These recommendations focus not just on design but also how economic viability and policy are impacted through the design and development of these facilities. Therefore these recommendations may not necessarily parallel best practices as specified in the literature review.

SPACE

- ❖ Community entrance is a single point of entry
- ❖ Hallways are designed as double loaded interior corridors

- ❖ Community dining space in partnership with a non-profit to supply meals to residents

MATERIALITY

- ❖ Non-slip flooring
- ❖ Rounded furniture and hardware
- ❖ Hard surface furniture
- ❖ Emergency pull strings in common areas

ACTIVITY

- ❖ Larger multipurpose spaces with easily movable furniture
- ❖ Projection screen and connectivity ports for educational presentations
- ❖ Hearing impaired assistive devices in television space
- ❖ Alternative methods for exercise that do not include gym space, but health promotion activities such as yoga

The concept of space, as defined in the previous chapter, focused on two main ideas: the overall set up of the community, and individual dining versus community dining. Based on the data collection and the literature review, the researcher recommends that the overall set up of the community should utilize a single point of entry enclosed community set up that includes a double loaded interior corridor system, with an enclosed outdoor space. The researcher recognizes that a community dining space is the most ideal way for residents to be provided meals, but that also includes the added cost of having a commercial kitchen, and kitchen/wait staff. Therefore the researcher is proposing a recommendation for a dining space with a warming kitchen, this will allow residents to cook meals together for special

occasions, and also have a third party low income meal supply company such as Meals on Wheels to come in and provide daily meals to residents. This would allow residents to still be able to have an established daily meal program, without adding the extra cost onto the facility and residents.

The focus of materiality, as defined by the previous chapter as the flooring, furniture and safety features that are applied to the design finishes associated with the project. The researcher heard a powerful statement in which the interviewee of the Affordable Housing facility (Facility A) said, “the idea of safety is funding driven, I think what you’ll see is the interior or idea of safety will come into play early on and as the actual design and then costs come, we’ll eliminate some of that”. The design must take into consideration that these last finishes and fixtures will be the most likely to be eliminated due to budgetary constraints. Therefore, the fixtures and finishes should be targeted to an elderly specific population, while still keeping cost in mind. The researcher recommends a non-slip flooring type, as falls are the number one concern of both seniors and staff who work in senior facilities (Yardley & Smith, 2002). Linoleum is the most cost effective form of non-slip flooring as it is durable and long lasting (Nada, Malone & Joseph, 2012). The designer should stay away from white or sterile colors so as to limit the feeling of institutionalization (Nada, Malone & Joseph, 2012). These same ideals should be followed through furniture choices as well. Furniture should also include rounded corners and furniture that is ergonomically designed for a senior population. Some of the ergonomic factors include harder non-sinking furniture, furniture that is lower to the ground, and that does not slide easily as discovered in the interview with the Facility B manager. The researcher recommends that designers implement the pull

string safety features in common areas of the design, which will allow residents to take emergency action easily. Although this method is not as technologically advanced as other supportive safety features that are on the market today, this is the only method that is implemented directly into the design and therefore does not require an added cost of use to the resident, like a wearable pendant.

Recommendations for Activity, include space for exercise, education and socialization as defined earlier in the research. The researcher recommends that designers should attempt to design for larger multipurpose space, as opposed to smaller spaces with a defined activity need. These spaces should be large, with non-slip flooring to account for exercise activities, and include tables and chairs that are easily stackable and foldable in order to be able to keep the space open and free of hazards. The researcher also recommends that the activity spaces include projectors and screens to accommodate for educational activities so that presenters can make presentations to residents. This technology could also include surround speakers that can accommodate those with poor hearing. It is recommended that all of these spaces are open and inviting with a non-institutionalization feel, so residents are comfortable enough to socialize and make friends (Regneier, 2002).

This research set out to begin to discuss a new housing typology. Within this study the researcher found that neither Affordable Housing nor Assisted Living, in its current state includes the low income elderly population that is living with health needs. This third typology takes in account different concepts from both Assisted Living and Affordable Housing, and began to explore the design and development of an Affordable Assisted Living typology.

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APPENDIX A
ADDITIONAL INFORMATION

Figure 6- Interview Questions

Interview Questions

- 1a. What types of government subsidies fund your program/facility?
- 1b. What are the types of funding sources people use to pay for your facilities?

2. What are the different types of community spaces?

3. Do you have adequate space for the services you provide?

4. Do you feel there is adequate space for 3rd party companies to provide healthcare services?

5. How often do you enlist the help of emergency services?

6. Are there specific design features that are utilized for safety in the common areas?

Figure 7- Instrumental Activities of Daily Living Scale

Patient Name: _____ Date: _____

Patient ID # _____

LAWTON - BRODY INSTRUMENTAL ACTIVITIES OF DAILY LIVING SCALE (I.A.D.L.)			
Scoring: For each category, circle the item description that most closely resembles the client's highest functional level (either 0 or 1).			
A. Ability to Use Telephone		E. Laundry	
1. Operates telephone on own initiative-looks up and dials numbers, etc.	1	1. Does personal laundry completely	1
2. Dials a few well-known numbers	1	2. Launders small items-rinses stockings, etc.	1
3. Answers telephone but does not dial	1	3. All laundry must be done by others	0
4. Does not use telephone at all	0		
B. Shopping		F. Mode of Transportation	
1. Takes care of all shopping needs independently	1	1. Travels independently on public transportation or drives own car	1
2. Shops independently for small purchases	0	2. Arranges own travel via taxi, but does not otherwise use public transportation	1
3. Needs to be accompanied on any shopping trip	0	3. Travels on public transportation when accompanied by another	1
4. Completely unable to shop	0	4. Travel limited to taxi or automobile with assistance of another	0
		5. Does not travel at all	0
C. Food Preparation		G. Responsibility for Own Medications	
1. Plans, prepares and serves adequate meals independently	1	1. Is responsible for taking medication in correct dosages at correct time	1
2. Prepares adequate meals if supplied with ingredients	0	2. Takes responsibility if medication is prepared in advance in separate dosage	0
3. Heats, serves and prepares meals, or prepares meals, or prepares meals but does not maintain adequate diet	0	3. Is not capable of dispensing own medication	0
4. Needs to have meals prepared and served	0		
D. Housekeeping		H. Ability to Handle Finances	
1. Maintains house alone or with occasional assistance (e.g. "heavy work domestic help")	1	1. Manages financial matters independently (budgets, writes checks, pays rent, bills, goes to bank), collects and keeps track of income	1
2. Performs light daily tasks such as dish washing, bed making	1	2. Manages day-to-day purchases, but needs help with banking, major purchases, etc.	1
3. Performs light daily tasks but cannot maintain acceptable level of cleanliness	1	3. Incapable of handling money	0
4. Needs help with all home maintenance tasks	1		
5. Does not participate in any housekeeping tasks	0		
Score		Score	
Total score _____			
A summary score ranges from 0 (low function, dependent) to 8 (high function, independent) for women and 0 through 5 for men to avoid potential gender bias.			

Source: *try this: Best Practices in Nursing Care to Older Adults*, The Hartford Institute for Geriatric Nursing, New York University, College of Nursing, www.hartfordign.org

MaineHealth

Figure 8- Assisted Living Floorplan

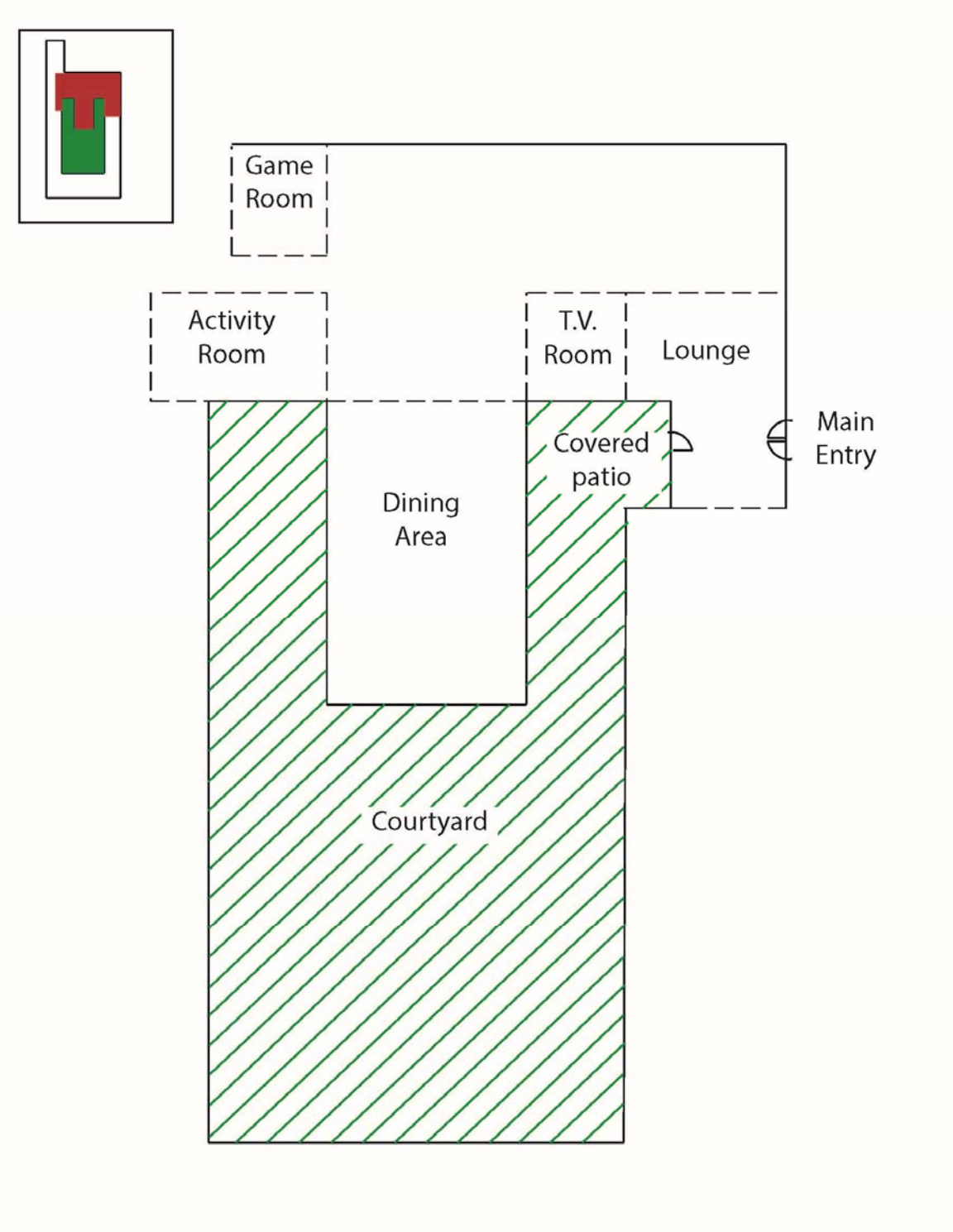


Figure 9- Affordable Housing Floorplan

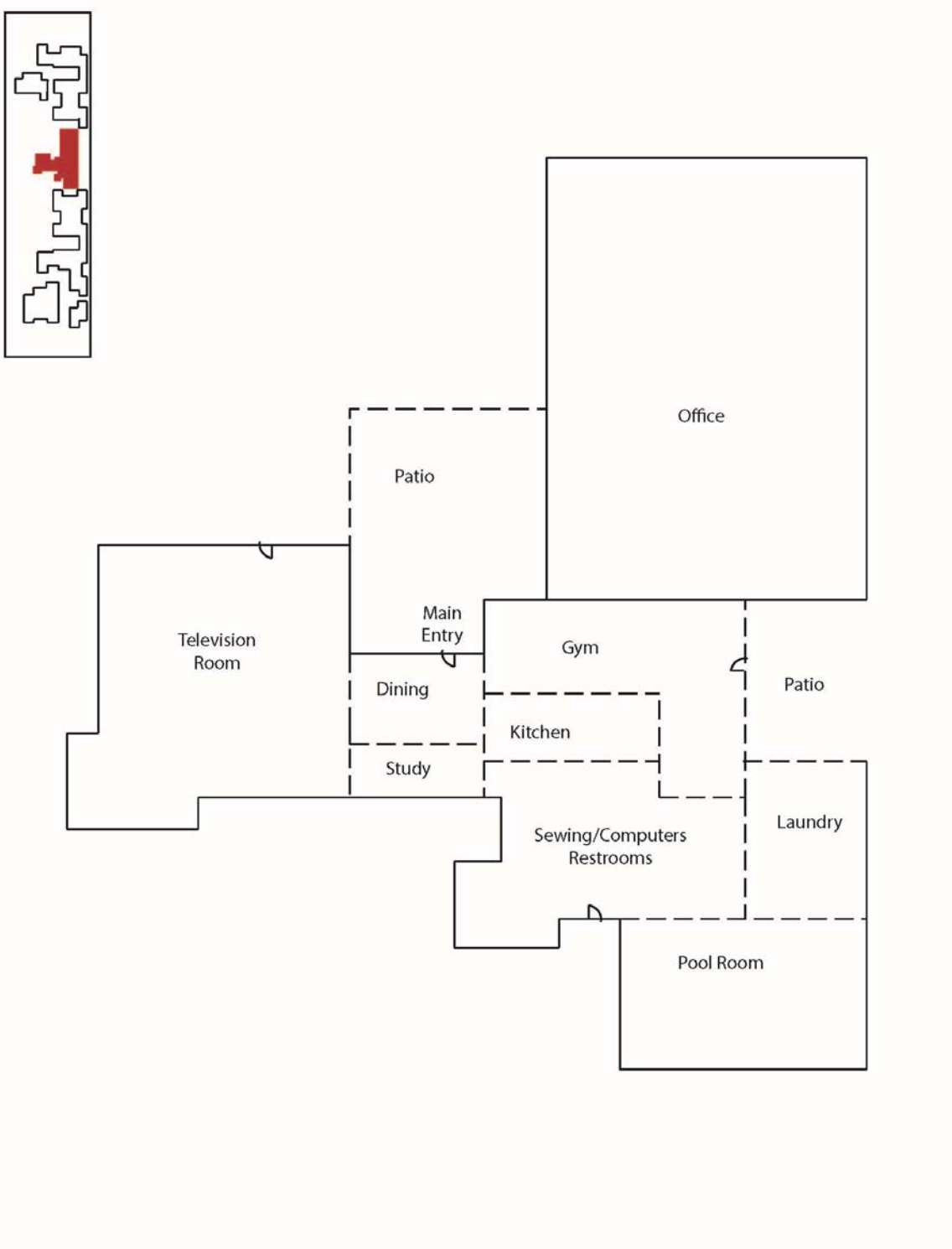


Figure 10- Assisted Living Lounge, Dining, Activity

Lounge



Dining



Activity



Figure 11- Assisted Living Library, Television Room

Library/ Card Room



Television Room



Figure 12- Assisted Living Entrance, Gazebo

Entrance



Single point of entry

Gazebo



Shaded Area

Seating Area

Figure 13- Assisted Living Courtyard, Outdoor Patio, Garden

Courtyard



Outdoor Patio

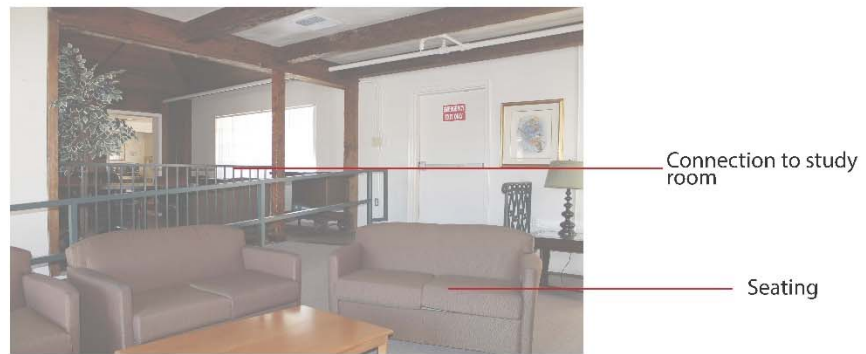


Garden



Figure 14- Affordable Housing Television Room

Television Room



Conversation Area (within TV area)

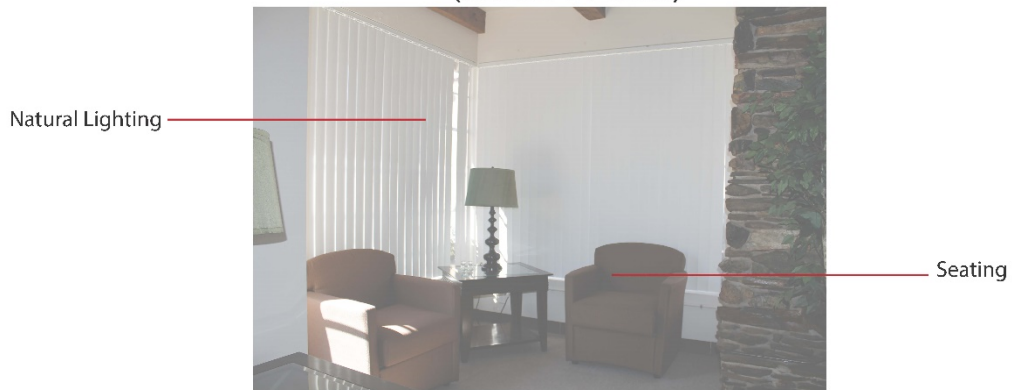


Figure 15- Affordable Housing Study Room, Pool Table Room

Study Room



Pool Table Room

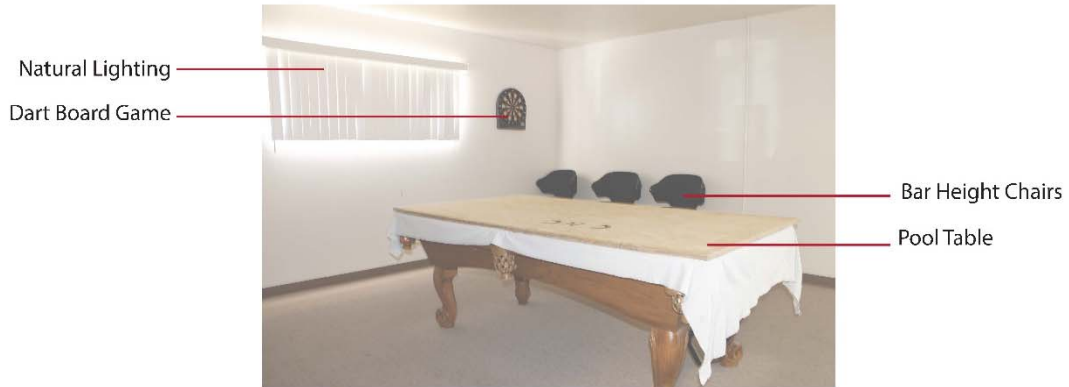


Figure 16- Affordable Housing Dining Space, Kitchen

Dining Space



Kitchen



Figure 17- Affordable Housing Sewing Room, Computer Area and Bathrooms, Gym

Sewing Room



Computer Area and Bathrooms



Gym



Figure 18- Affordable Housing Entrance to Clubhouse, Entrance to Community, Parking Core

Entrance to Clubhouse

Litghted entrance at night

Ramp Entrance



Large Windows

Entrance to Community

Single point of entry



Gated Access

Parking Core



"eyes on the street"
Units look onto parking core