

# North Dakota State University

## Graduate School

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**Title**

BRIDGING GENERATIONS: EXPLORING INTERGENERATIONAL SHARED  
BUILDING SITES TO COUNTERACT AGE SEGREGATION

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**MASTER OF ARCHITECTURE**

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BRIDGING GENERATIONS: EXPLORING INTERGENERATIONAL SHARED BUILDING  
SITES TO COUNTERACT AGE SEGREGATION

A Thesis  
Submitted to the Graduate Faculty  
of the  
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## **ABSTRACT**

Age segregation is a rising problem in the United States. Since the early 1900s, this country has relied on age as a driving force in determining rules and regulations. Because of this, older and younger populations continue to face a divide that brings negative consequences for both generations. The formation of stereotypes and prejudices have formed on different age groups has and will continue to lead to reduced understanding and empathy of generations. This thesis project proposes intergenerational shared building sites as a solution to bring together the young and old to foster relationships and bridge the gap that has formed between these two generations through the building design and program. The typology of an intergenerational daycare center would provide daily care to older adults and young children while providing spaces that allow for learning and collaboration between the participants.

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## **1. INTRODUCTION**

The separation between younger generations and older adults is an increasing phenomenon in the United States. Each day, children go to their respective institutions for the day such as daycare or school, and older adults in senior living facilities stay in their community. There are little to no opportunities for mutual contact between these two generations, even though these interactions are proven to provide benefits to both parties involved. Pairing together younger individuals with older individuals in a shared space can facilitate meaningful relationships and push to keep societies together.

Intergenerational shared building sites offer services with a shared program between youth and older adults. They address the increasing demand for childcare and older adult services. Examples of these programs include facilities that provide adult day services and childcare or senior housing with a childcare center located in the building. These shared building sites can address topics such as physical, cognitive, and mental health, social isolation, and loneliness in both parties involved. Additionally, children can benefit from having relationships with older adults who can provide care and mentoring that correlate to developmental skills that are essential in young people. With age segregation continuing to grow in the United States, intergenerational shared building sites can bring together generations and prove the benefits of sharing a space.

### **1.1. Age Segregation**

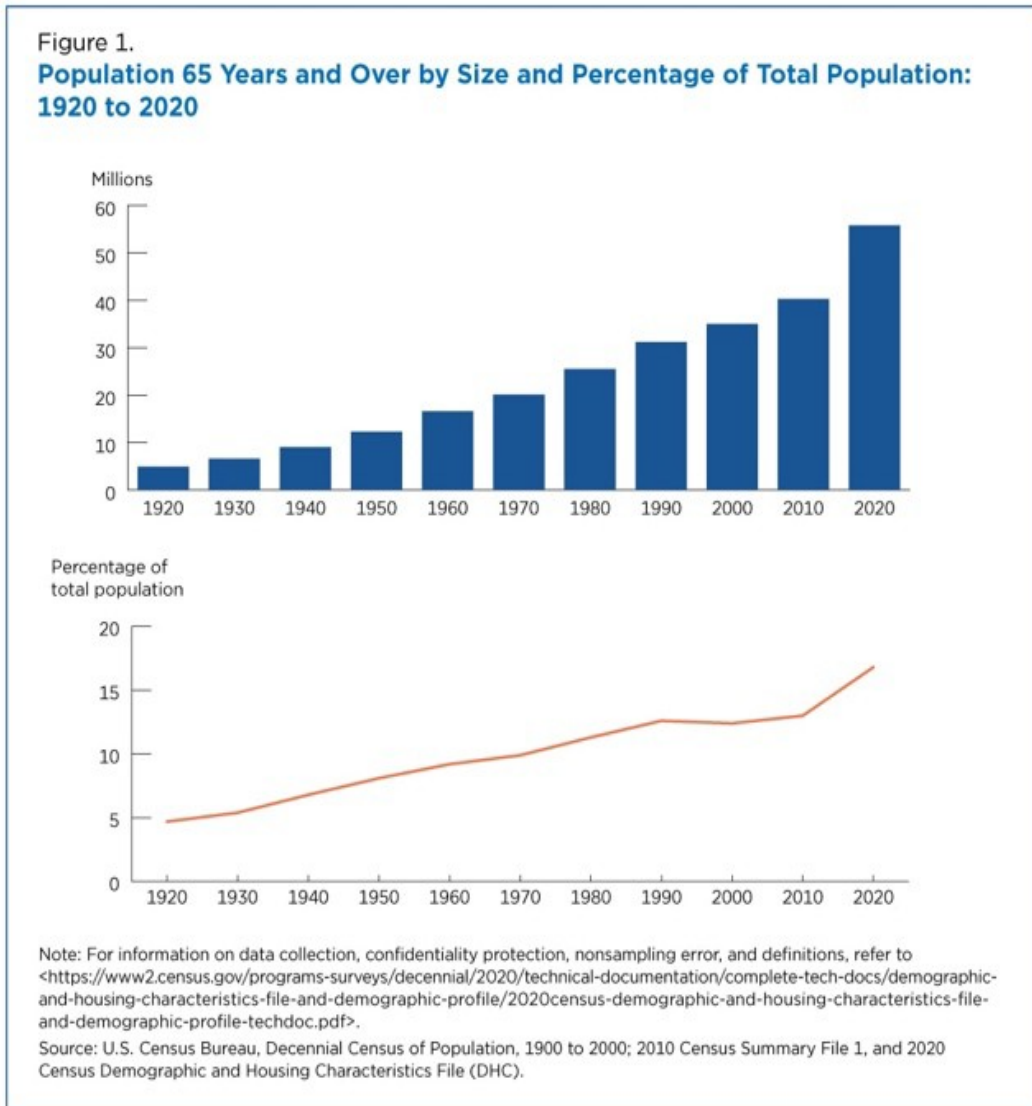
The United States is a quickly aging country. According to the United States 2020 Census, those aged 65 and older grew approximately five times faster than the total population over 100 years from 1920 to 2020 (Bureau, n.d.). This rapid growth plays a large part in aging baby boomers who began to turn 65 in 2011. As the population continues to grow in age, age segregation has

become a norm in the present day preventing interactions between generations. It is common to find age segregation among institutions such as schools or work, and even in households around the country (Riley & Riley, 2000). Young people go to school for the day, while older people stay in their retirement communities or facilities. These separations could lead to a sense of competition between age groups for different resources to support interests, services, or institutions that fit their age group (Binstock, 2010). However, some different activities and interests can be seen between older and younger generations. Older adults may find themselves more concerned with social and political interests involving social security, senior care, leisure, and health-related services. Younger generations may be more interested in services that support education, family policies, and active recreation (Winkler, 2013).

According to Parisi and his colleagues, segregation can occur on many different levels (Parisi et al., 2011). These can include *macro* and *micro* segregation. Macrosegregation refers to higher levels of segregation between states, counties, and/or county subdivisions. Microsegregation refers to segregation at a local neighborhood level, between blocks, or within counties (Winkler, 2013). According to a study done by Winkler, most age segregation occurs at a micro level in the United States after measuring segregation with the dissimilarity index and looking at Microsegregation within census blocks within county subdivisions (Winkler, 2013).

**Figure 1.**

*U.S. Population 65 Years and Over*



*Note:* This chart focuses on the total population from 1920 to 2020. From *U.S. Older Population Grew From 2010 to 2020 at Fastest Rate Since 1880 to 1890*, by Caplan, 2023.

(<https://www.census.gov/library/stories/2023/05/2020-census-united-states-older-population-grew.html>). Copyright 2020 by U.S. Census Bureau.

With obvious evidence that age segregation is a real concern in the United States, one may find themselves asking why this subject matters. One main reason is that age segregation prevents the opportunity for individuals to meet, interact, and move away from an “us versus

them” mentality (Hagestad & Uhlenberg, 2006). Preventing this opportunity for people of different generations to meet, produces and reproduces ageism. Secondly, it can increase the risk of individuals becoming isolated later in life and prevent socialization between the young and old. Finally, it does not allow for the creation of a generative society. (Hagestad & Uhlenberg, 2006).

### **1.1.1. Research Questions**

As discussed above, this paper will aim to contribute to research on intergenerational shared building sites as an aid in limiting the consequences of age segregation. Broadly, my research will be organized into these main areas:

**Age Segregation:** Has the United States always been an age-segregated country? What triggered the separation of people by age? What does age segregation look like today and what have the consequences been? How can we find strong solutions to combat the consequences that continue to divide Americans?

**Interaction between generations:** How do we bring together the old and young through shared building sites? Why is it important to unite generations? What types of benefits do we see? How can building design impact age segregation? What types of spaces are needed to facilitate the relationship between the young and old?

**Intergenerational Shared Sites:** What are intergenerational programs? What is the purpose of these programs? What kinds of settings are these found in? Are there any challenges faced by intergenerational programs? Are they proving to be a successful answer to age segregation? What types of spaces are seen in facilities that these programs? How can we design a day center that provides the spaces and means that promote intergenerational relationships and address age segregation?

### **1.1.2. Proposed Outcomes**

This paper is expected to provide information on intergenerational shared building sites as a step in addressing age segregation through the design and spaces. This will include the benefits of uniting generations and why it is essential to provide opportunities for interaction between the youth and the older population along with what kind of building program is needed to provide the opportunity. This will include but is not limited to universal design, where spaces and products will be accessible to people with a wide range of abilities, disabilities, and other characteristics, spatial layouts that encourage and provide the means to interact, community spaces, and outdoor spaces (*DO-IT*, n.d.). There will be examples included of successful shared building programs already established along with what makes them successful and the benefits that have been provided. There is limited literature on intergenerational shared building sites, so this paper will contribute to the growing research that is being done on the topic and will hopefully bring more interest to the topic of addressing age segregation in the United States with shared building sites.

## **1.2. Objective**

### **1.2.1. Aim**

This research paper aims to investigate intergenerational shared building programs as a potential solution to age segregation in the United States. With age segregation continuing to find itself integrated into our everyday norms, there must be more attention and literature brought to providing solutions to this occurring problem in America and why shared building sites can be a strong step in that solution. There will be specific research to analyze why age segregation has grown to the magnitude it has today, focusing on young and old generations, along with what building solutions have been established and why they are successful.

### **1.2.2. Significance**

This research is necessary to bring attention to the growing consequences of age segregation. Society must be presented with problems that are occurring every day because of continuing to separate generations. There must also be more literature on why it is important to unite generations today and what types of benefits people are seeing. Intergenerational shared building sites are a relatively new phenomenon in the United States. More research and information need to be provided on how to establish these building programs and why they are serving as potential solutions to age segregation.

## 2. BACKGROUND

### 2.1. History of Age Segregation in the United States

The United States was once considered the most age-integrated society in the world (Freedman & Stamp, 2018). Before the industrial age in America, agriculture dominated the economy (Dannefer & Feldman, 2017). It was common to see multigenerational households working together on farms with little to no age-defined divisions. As soon as children were old enough to provide labor, they were thrust into the activities of economic production (Dannefer & Feldman, 2017). There were also one-room schoolhouses where children and adults often learned together (see Figure 2). This was the time when there was little awareness of age, and birthdays were rarely celebrated.

#### Figure 2.

*Students in front of Schoolhouse*



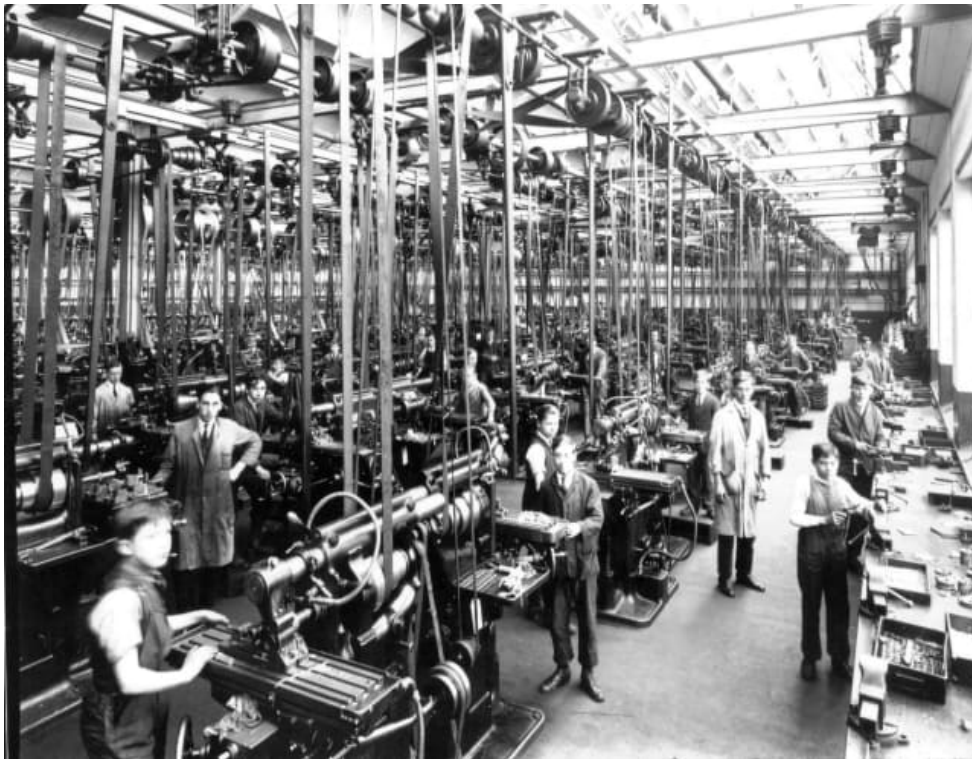
*Note:* A group of students and teachers in front of a one-room schoolhouse in Decatur County, Kansas. From *The only remaining sod schoolhouse in Decatur County, Kansas*, by Library of Congress, n.d. (<https://www.loc.gov/item/95501342/>). Copyright 1908 by Jos. H. Young.



The idea of this age-integrated society changed with the introduction of industrialization. The economy no longer relied on the idea of the family but instead on the factory as shown in Figure 3 (Dannefer & Feldman, 2017). With a stronger need for production and specialization, it was using age as a guiding point that allowed for easier separation of people. This new American life created new laws and institutions that put young people with young people and older people with older people (Freedman & Stamp, 2021). As a result, age became the driving force of social organization.

**Figure 3.**

*Industrial Revolution Factory*



*Note:* Many children were employed in factories during this time. From *Was the Industrial Revolution Really Worth it?*, by Wright, 2017. (<https://www.engineering.com/story/was-the-industrial-revolution-really-worth-it>). Copyright n.d. by John Abbott.

With a new consciousness of age, many changes and new ideas came to light in the United States. There was an establishment of the medical specialty of pediatrics as doctors realized children experienced different diseases and developments than older adults. Schools started to cluster together children of the same age and assign specific age-related skills. Activities both in and outside of schools were also seeing the formation of members that were of similar age. (Chudacoff, 1989). Unfortunately, old people were the ones to see more of the negative effects of the newfound interest in age. According to historians W. Andrew Achenbaum and Carole Haber, older people suffered a decline in status in the nineteenth-century (Chudacoff, 1989). Instead of there being respect and admiration for one's life experiences and knowledge, there was disrespect and hostility. This not only leads to more separation of those at an older age but also strong prejudices against this population.

## **2.2. Types of Age Segregation in Organizations**

Depending on what stage an individual is in their life, they can encounter different types of age segregation. Sociologists have determined that the social structure of a person's life can be structured into three main segments (Riley & Riley, 2000). The first area focuses on preparation and education, the second on family building and work, and the third on retirement (Hagestad & Uhlenberg, 2006). After discussing how social segmentation of one's life course is closely linked to age segregation, Hagestad and Uhlenberg argued that segmentation of individual life trajectories leads to institutional, spatial, and cultural separation of people in different phases of their life (Hagestad & Uhlenberg, 2006).

Institutional age segregation happens when social institutions use chronological age as eligibility criteria for participation (Hagestad & Uhlenberg, 2006). Good examples include school and work. Children go to school for the day with peers their age and adults spend a large

amount of time in their work setting with limited relations with the young or old. Age plays a large role in the way that social welfare policies and programs are created and implemented within institutions. (Hagestad & Uhlenberg, 2006).

Spatial age segregation occurs when those of different generations do not occupy the same space and cannot engage with one another (Hagestad & Uhlenberg, 2006). Assisted living facilities are examples of spatial age segregation as the older adults who live in these spaces are limited to interactions with other residents their age (Figures 4 and 5). Lastly, according to Hagestad and Uhlenberg, institutional and spatial age segregation is reflected and reproduced in cultural contrasts (Hagestad & Uhlenberg, 2006). When looking at generations, it's easy to see different cultures expressed. For example, music and clothing are often expressed differently. Although this may not be a negative thing, it still goes to show that this separation of culture will further create a divide between generations.

**Figure 4.**

*Assisted Living*



*Note:* Older adults are limited to interaction with other residents their age in assisted living facilities. From *Assisted Living*, by North Dakota Department of Health and Human Services, 2022. (<https://www.hhs.nd.gov/adults-and-aging/assisted-living>). Copyright 2022 by North Dakota Department of Health and Human Services.

**Figure 5.**

*Elementary School*



*Note:* Elementary kids are limited to interaction with kids their age. From *10 key questions to ask when choosing an elementary school*, by The GreatSchools Editorial Team, 2023. (<https://www.greatschools.org/gk/articles/choosing-elementary-school-ten-questions-to-ask/>). Copyright 2023 by GreatSchools.org.

### **2.3. Results of Age Segregation in an Aging Country**

The consequences of age segregation are slowly becoming more of a topic discussed between scholars. Gerontologist, family sociologist, and Cornell University professor Karl Pillemer told The Huffington Post in an interview, “I think we’re in the midst of a dangerous experiment. This is the most age-segregated society that’s ever been” (*The Love Advice That Shocked A Marriage Expert*, 2015). One of the biggest impacts of lack of contact between generations is ageism. Hagestad and Uhlenberg (2006) discuss how age segregation and ageism seem to be a part of a cycle of reproduction. One is the consequence of the other. In chapter 3 of *Ageism: Stereotyping and Prejudice against Older Persons*, authors Levy and Banaji describe ageism as an “alteration in feeling, belief, or behavior in response to an individual’s or group’s

perceived chronological age” (Levy & Banaji, 2002). People of all ages are faced with stereotyping and discrimination based on their age.

Unfortunately, age segregation is more prevalent in the young and old. Generations United, a national nonprofit that focuses on improving lives of the children and older adults through intergenerational programs, defines these as “the bookend generations” (Hagestad & Uhlenberg, 2006). There is a lack of essential opportunities between these two generations to meet and interact which can lead to isolation and loneliness. This also triggers a contradictory view of each other. According to Cuddy and Fiske, elders are seen as “incompetent but warm” (Cuddy & Fiske, 2002). This prejudice against older people only fuels age segregation and continues to wedge the divide between generations. In *Ageism: Denying the Face of the Future*, Greenberg, Schimel, and Mertens propose the idea that these views of older people are because of one’s fear of their mortality (Greenberg et al., 2002). Seeing an elderly person may cause one to feel anxiety about their impending death. If younger generations took the opportunity to be with older adults, they could develop a learning and understanding of aging. This can help alleviate these negative feelings about the elderly and aging. It’s important to create understanding and empathy between generations to allow for reduced isolation and make room for new learning opportunities.

Exploring the effects of age segregation on the elderly, more inclusion and supportive living arrangements must be met to help combat the implications brought on by age segregation. Assisted living facilities have the potential to provide the solution with proper environments that can generate community and social connections with people outside of one’s age group.

## **2.4. Intergenerational Shared Sites**

### **2.4.1. What are Intergenerational Shared Sites?**

Intergenerational shared sites are programs that intentionally unite younger and older generations in a physical location with activities that bring them together (*Intergenerational Shared Sites Fact Sheet*, n.d.). These programs vary in what types of services are provided but all strive to enrich participants' lives. They address social and community issues such as isolation and loneliness, while proving to offer benefits that leave a lasting effect on everyone involved.

A report done in 2018 by Generations United and The Eisner Foundation includes a survey done by The Ohio State University where 110 intergenerational shared sites were identified in the United States (Generations United, 2020). There are generally four models that intergenerational programs are structured and followed around: youth assist older adults, older adults assist youth, youth, and older adults work towards a mutual goal or serve the community together, and shared care sites (Gilchrist, n.d.; S. Jarrott & Bruno, 2007). These can include intergenerational building programs such as housing, community centers, public spaces, or care facilities. An early survey of 281 shared site representatives indicated that the most common building model showed nursing homes or adult day services located in the same facility as childcare centers (S. E. Jarrott & Lee, 2023). These types of programs can share rooms, resources, and staff and can be run by the same organization or a different entity.

**Figure 6.**

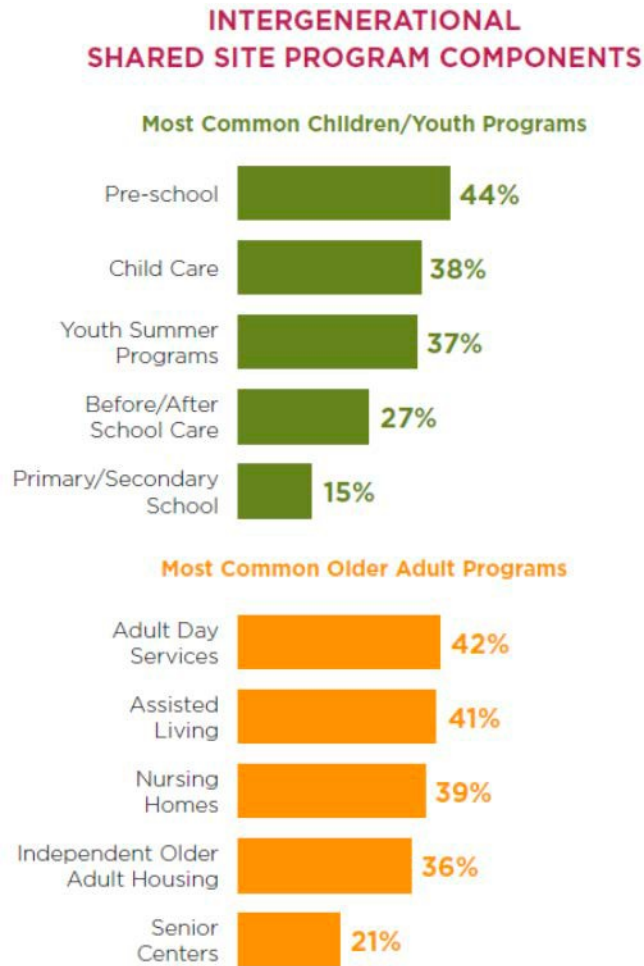
*Amaran Assisted Living*



*Note:* Amaran Assisted Living in Albuquerque, NM offers opportunities for intergenerational relationships. From *Saving a seat for every generation*, by Dekker Perich Sabatini, n.d. (<https://www.dpsdesign.org/project/amaran-assisted-living/>). Copyright 2023 by Dekker Perich Sabatini.

**Figure 7.**

*Intergenerational Shared Site Program Components*



Source: Generations United/The Ohio State University 2018 Survey of Shared Site Intergenerational Programs sponsored by The Eisner Foundation and included in "All In Together: Creating Spaces Where Young and Old Thrive."

*Note:* This model was produced by Generations United and The Ohio State University from a 2018 Survey of Shared Site Intergenerational Programs. Pre-school and Adult Day Services were most common. From *All in Together: Creating Places Where Young and Old Thrive*, by The Eisner Foundation and Generations United, 2018. Copyright 2018 by The Eisner Foundation and Generations United.

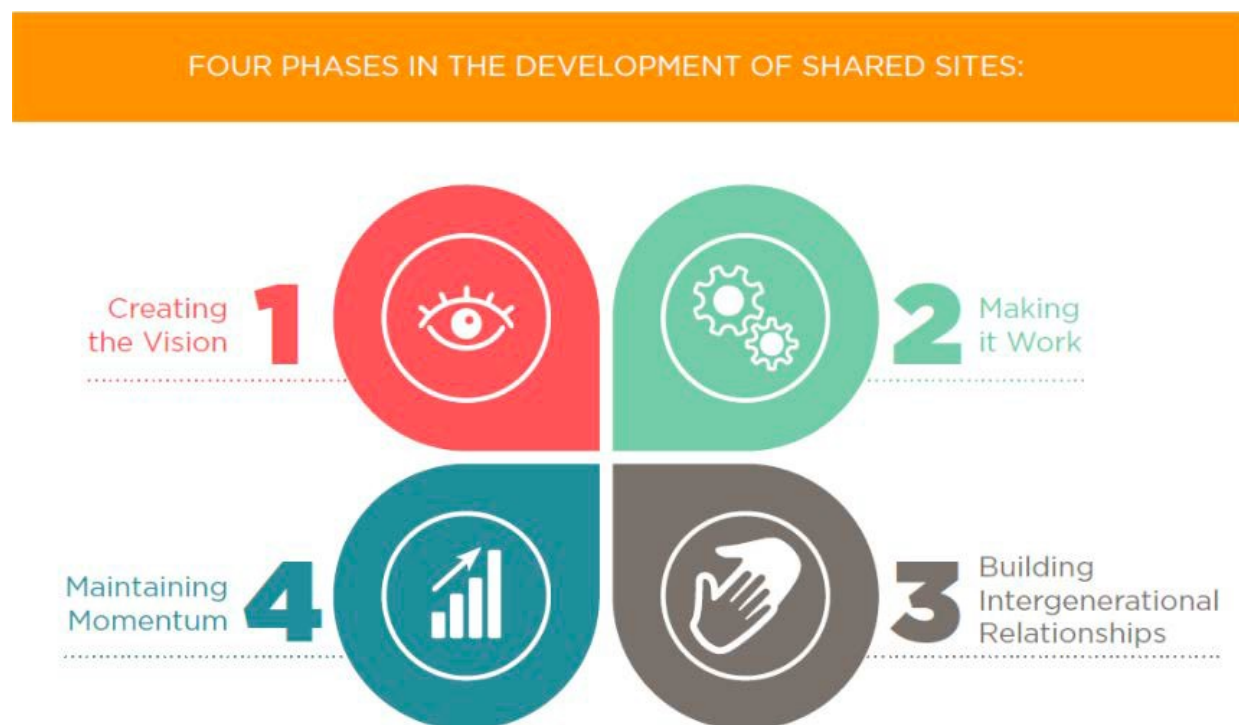
A recent study done by Jarrot et al. identified thirteen evidence-based practices that can provide a guide in establishing an intergenerational shared site: incorporate mechanisms for



friendship, select or set the environment, provide training to staff or participant groups, foster empathy, promote cooperation, offer meaningful roles such as mentorship and/or decision making, be mindful of time and scheduling, structure activities for flexibility, ensure authority figures endorse intergenerational contact, use technology, train facilitators to promote interaction, offer something novel, and convey equal group status (S. E. Jarrott et al., 2021; *Generations United*, 2021).

**Figure 8.**

*Four Phases in the Development of Shared Sites*



*Note:* Note: This model was produced in a report by Generations United and The Eisner Foundation on the development of shared sites. From *The Best of Both Worlds: A Closer Look at Creating Spaces that Connect Young and Old*, by The Eisner Foundation and Generations United, 2019. Copyright 2019 by The Eisner Foundation and Generations United.

Despite the many positive benefits and success of intergenerational shared sites, there are struggles that these programs continue to face. One of the biggest challenges that is faced is

funding (S. E. Jarrott & Lee, 2023). It is not uncommon to see programs close their doors due to financial and internal challenges. These include changes in the organizational culture or administration or cuts in the budget that can lead to discontinuing partnerships (Henkin & Patterson, 2017). There is also a lack of evaluation tools to measure the impact shared sites have (Generations United, 2020). However, in 2019, Generations United and The Eisner Foundation released *The Best of Both Worlds: A Closer Look at Created Spaces that Connect Young and Old*, a report that identifies four phases in the development and operation of shared sites. These include spreading the word, providing support, refining the rules, measuring the merits, and building the field (Generations United, 2023). Through these factors, intergenerational shared sites can boom and successfully provide relationships between generations.

#### **2.4.2. History of Intergenerational Programs**

During the 1960s, intergenerational programs were starting to launch around the world to help combat the consequences of age segregation. One of the first known programs in the U.S. was the Foster Grandparent and Retired Senior Volunteer Programs created in 1965. This was created between the Office of Economic Opportunity and the Department of Health, Education, and Welfare to help Americans 55 years and older to volunteer and provide one-on-one support to children with special needs ( *ND Senior Career Development | AmeriCorps Seniors Foster Grandparent Program*, n.d.). In 1986, Generations United was created by the National Council on Aging, Child Welfare League of America, Children’s Defense Fund, and AARP to help improve the lives of youth and older adults through intergenerational programs (*Generations United*, 2023). These two programs have been leaders in the development of intergenerational programs around the United States and continue to advocate for the interaction between generations.

### **2.4.3. Benefits of Intergenerational Shared Building Sites**

Research shows that intergenerational shared building sites can help form the relationship between youth and older adults. These two generations can come together to learn, grow, improve, and play. The building program can provide shared spaces that create a sense of meaning for participants and foster companionship. According to University of Wollongong Associate Professor Lyn Phillipson, bringing together generations allows older people to see the enthusiasm and wonder in children and children can see the wisdom that older people can offer (Michie, 2022). This allows both generations to feel valuable and included. This paper breaks down three main areas that participants may see benefits from education and learning, health and wellness, and community building.

#### ***2.4.3.1. Education and Learning***

One of the biggest impacts that intergenerational shared building sites can have on participants is mutual learning from each other. Transferring knowledge of skills from older generations to younger ones is a valuable benefit of sharing sites. Older adults tend to have a lifetime of experiences, skills, and wisdom that they can pass down to the youth. Children also experience enhanced communication skills, improved vocabulary and reading, and better abilities to cooperate and problem solve (B, 2021). Children are also exposed to the aging. They can learn about the process of aging and become comfortable with it instead of something to be scared of, allowing for learning of empathy and social acceptance (Bosak, n.d.). Older adults can also experience a sense of learning from the younger generation as well. They too can learn problem solving, communication skills, and an increased understanding of children and their development. Especially now, older adults are also able to experience an increased comfort with technology by learning from a younger generation that has more experience (B, 2021).

#### **2.4.3.2. *Health and Wellness***

Mental health, emotional well-being, and physical health are also topics that intergenerational shared building sites address. Older adults can see an increase in physical activities by participating in events with children. Researchers have also noted that their self-esteem and worth can be increased by feeling needed and valued by a younger generation (B, 2021). This can help offset feelings of isolation and loneliness that many older adults experience. They may also find that they have better physical health, are less likely to suffer from depression, and may have a higher degree of satisfaction in life (Michie, 2022).

#### **2.4.3.3. *Community Building***

Intergenerational shared building sites also provide the opportunity for community building. They bring awareness to the power that intergenerational relationships can have on generations and offer new community spaces (B, 2021). These spaces can include community centers, childcare facilities, and senior living facilities. Through these, there can be a bridge in the generation gap that many communities face along with divides between race, socio-economic classes, and other traditional divides (Generations United, 2023). Conversations can spark to help address issues in neighborhoods and build alliances around community interests.

#### **2.4.4. *Shared Building Design***

When looking at intergenerational shared building sites, there is more than one age group that needs to be considered when it comes to the design and spaces in the building. Older adults will need a program that aims to support their age such as spaces for relaxation while young children will need spaces that focus on their development. Intergenerational shared building sites can have the ability to address both in one setting. Both older adults and children need spaces that address their physical and cognitive needs.

#### ***2.4.4.1. Accessibility and Universal Design***

Intergenerational shared building sites must ensure that their design is accessible to people of all ages and abilities. The Center for Universal Design has established seven principles for the universal design of any environment, these include (University of Washington, 2021):

1. Equitable use: The design is useful and marketable to people with diverse abilities.
2. Flexibility in use: The design accommodates a wide range of individual preferences and abilities.
3. Simple and intuitive use: The design of the building is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.
4. Perceptible information: The building/spatial design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.
5. Tolerance for error: The building/spatial design minimizes hazards and the adverse consequences of accidental or unintended actions.
6. Low physical effort: The building/spatial design can be used efficiently and comfortably and with a minimum of fatigue.
7. Size and space for approach and use: Appropriate size and space are provided for approach, reach, manipulation, and use regardless of the user's body size, posture, or mobility.

Regardless of looking at design and spaces for older adults or young children, the design of an intergenerational shared building site must follow these applications to achieve universal design and accessibility. For children, this can include using moveable furniture and equipment, structures, and materials. For older adults, this can include ramps, grab bars, wide doorways, and

sidewalks. These are a smaller number of examples of how a shared building site would need to consider both generations when looking at universal design for all their users.

#### ***2.4.4.2. The Entrance***

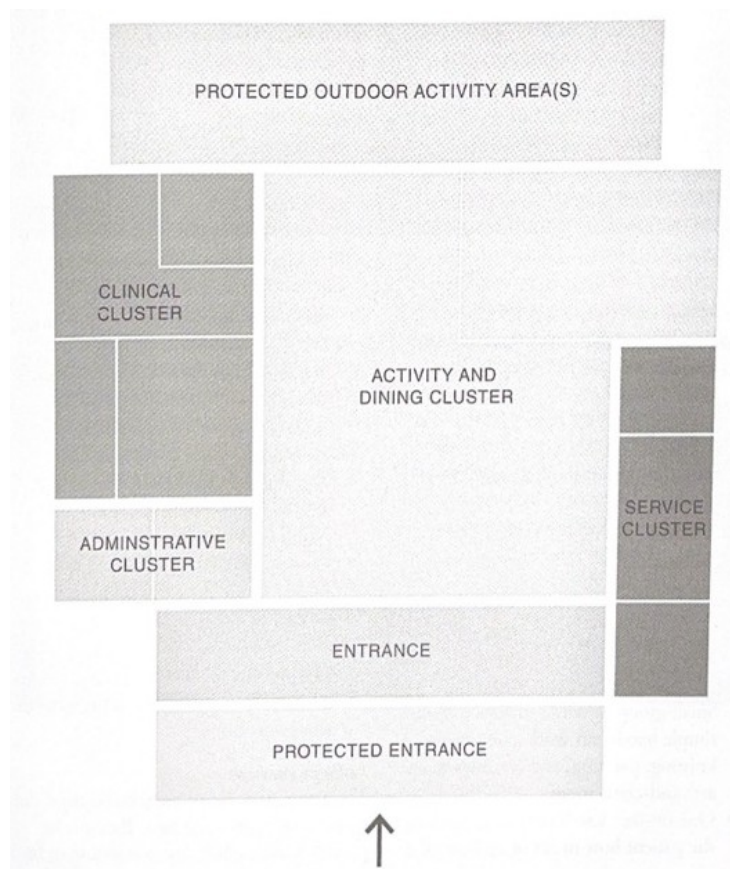
The entrance of an intergenerational shared building site marks a significant role for the individual walking through it. It marks a transition point for many as they walk into a new environment, especially for children as it can become associated with a welcome or farewell (Meuser, 2020). This is why it is important to create a welcoming, safe, and functional entrance that will be one of the first elements seen in the building by the users when entering. Designers must use measures that provide speedy orientation, without forcing any users to feel obliged to adapt to any obligation, security, and beauty (Meuser, 2020).

#### ***2.4.4.3. Spatial Layout***

One of the most important design qualities of an intergenerational shared building site is the spatial layout of the building. Communal spaces are essential in providing opportunities for both generations to interact with each other. Many spaces will need to be constructed to allow for more than one age group to use it. Perkins Eastman created an ideal spatial layout for an adult daycare center. This includes a protected entrance into the program areas as shown in Figure 9 (Perkins Eastman, 2013). This spatial layout could be looked at as an intergenerational shared building site and expanded to include spaces for young children.

**Figure 9.**

*Senior Daycare Program*



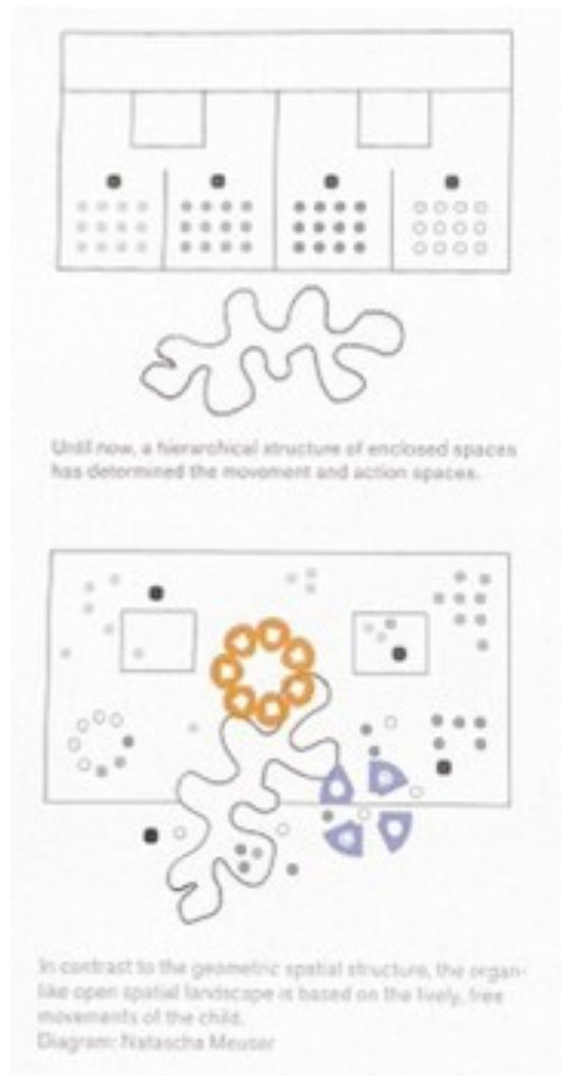
*Note:* The ideal spatial layout for an adult day care center. From *Building Type Basics for Senior Living* (p. 27), by Perkins Eastman, 2013, Hoboken, NJ: John Wiley & Sons, Inc. Copyright [2013] by John Wiley & Sons, Inc.

In the book *Construction and Design Manual: Childcare Facilities*, author Natascha Meuser provides two different structures of childcare facilities as shown in Figure 10. This includes a typical hierarchical structure with enclosed spaces, but Meuser introduces a geometric structure with an organic shape that allows for the movement of children (Meuser, 2020). Both examples of Perkins Eastman and Meuser's geometric layout will provide good starting points when creating a layout for an intergenerational shared site daycare. There must be spaces that

bring together children and older adults but there must also be spaces that are dedicated to specific ages.

**Figure 10.**

*Childcare Facility Structures*



*Note.* Organic-like open spatial landscape. From *Construction and Design Manual: Childcare Facilities* (p. 43), by Natascha Meuser, 2020, Berlin: DOM publishers. Copyright [2020] by DOM publishers.



Physical proximity is not enough to generate relationships between two generations. The spatial layout and function of the building program should support the goal of what an intergenerational shared building site offers such as reducing loneliness, enhancing cognitive and socioemotional skills, promoting healthy behaviors, and bridging the age gap between children and older adults (Generations United, 2021).

#### **2.4.5. Indoor Spaces**

Indoor spaces will become the biggest tool in promoting cross-age interaction. Common areas will encourage social interaction among everyone involved. Some common spaces include a community kitchen, a cafeteria where children and older adults can eat together, a multipurpose room, nooks and crannies with comfortable chairs and tables, and a lobby area (Generations United, 2021). In addition to common spaces, an intergenerational shared building site would benefit from seeing learning spaces such as classrooms that can host educational activities or classes. As for more age-appropriate spaces, a playroom would benefit young children while a wellness area would benefit older adults.

#### **2.4.6. Outdoor Spaces**

Outdoor spaces are also crucial for an intergenerational shared building site. They can contribute to the overall well-being of individuals while promoting social interaction between generations. Having a courtyard in the center of a shared building site can allow for physical activity for both children and older adults. Walking paths can be incorporated with adult and child fitness equipment and benches in shaded areas (Generations United, 2021). Another common outdoor space that is seen in intergenerational shared building sites is shared gardens. Both generations can work together to grow fruit or vegetables while learning from each other and promoting healthy eating (Generations United, 2021).

**Figure 11.**

*Shared Garden*



*Note:* This is a shared garden at Ebenezer Ridges, a senior living facility in Burnsville, MN. From *Designing*, by Generations United, 2021. (<http://www.sharingourspace.org/designing/>). Copyright 2021 by Generations United.

#### **2.4.6.1. Interior Design**

The interior design on an intergenerational shared building site will have to adopt design elements that are catered towards children and older adults. In addition to creating spaces that allow for interaction, designers must also focus on materials, lighting design, wayfinding, finishes, and furnishings. With children and older adults in the same spaces, it is important to find a balance in the design elements. For example, drastic changes in flooring or patterns in carpeting should be avoided as a tripping hazard for older adults (Generations United, 2021).

Materials will play a crucial role in ensuring safety, easy maintenance, and a stimulating environment for both young children and older adults. Soft and resilient materials will aid in

playing for children while non-slip materials will reduce risks of falling. Easy-to-clean materials can help with hygiene or stains. Colorful walls can help stimulate children and provide contrasting colors for older adults who may be visually impaired while navigating spaces.

Good lighting can help with color recognition, encourage contact between users, improve mood and health, and even make food look more appetizing (Perkins Eastman, 2013). Natural lighting is desired in environments with children and older adults. Large windows can be incorporated in large spaces such as the dining area or a multipurpose room. General lighting should include bright and even illumination throughout spaces to allow for easy navigation and reduced shadows. Depending on the environment, cooler temperature lighting can create more awareness while warmer tones can create a cozier, welcoming space.

Furniture designed for children versus older adults can differ greatly, but intergenerational shared building sites must provide options that can provide comfort, engagement, and durability. Offering oversized furniture can allow a child to share a seat with an older adult or making sure seating allows for eye contact between the two generations can promote conversation and interaction (Generations United, 2021). Modular furniture such as fold-up tables or shelving on wheels can allow for flexible spaces that can accommodate different activities or events.

Overall, the building design and program must provide the necessary environment that promotes the interaction between youth and older adults. These spaces will provide opportunities for conversation, activities, and learning between the two generations to help lessen the age segregation that has become prominent in today's world. Designers must make the effort to research how the building program can prevent separation and instead promote unification.

## **2.5. Project Type**

This thesis project revolves around the idea that intergenerational shared building sites can be a strong step in addressing age segregation in the United States. These programs are becoming more popular in the U.S., but there needs to be more awareness brought to the subject. This project focuses on addressing age segregation by bringing older adults and children together through an intergenerational daycare center that offers services to both.

## **2.6. Project Issues**

This thesis project will address the growing concern of age segregation in the United States. Creating an intergenerational shared building site will not only bring together generations but will also provide an opportunity for education and learning, bettering health and wellness, and offering community building for neighborhoods. Intergenerational building programs can be a solution to many problems that communities continue to face while opening new doors for learning and guidance in creating a united community instead of being separated.

One successful program in the United States is the Intergenerational Learning Center, Providence Mount St. Vincent in Seattle Washington. This facility is licensed as a daycare but also has assisted living apartments that can accommodate 400 older adults (Flash, 2015). Children interact with senior residents five days a week to participate in art and music classes, storytime, and exercise activities (Flash, 2015). Through this, the kids can come together with older adults and learn about the aging process, seniors can gain physical activity, and wisdom is passed between the two generations. In Singapore, 3 billion Singaporean dollars was spent to turn its population of 5.6 million people into a “kampong for all ages”, a village built on intergenerational harmony (Freedman & Stamp, 2021). This allowed for putting senior centers and preschools in the same location and building new housing that is focused on

multigenerational living. Both are great examples of implementing intergenerational programs and sites.

**Figure 12.**

*Participants Working Together*



*Note: Alex Stafie, 5, and Wallace Scherer, 92, making lunches at Providence Mount St. Vincent. From Retirement home meets day care at Providence Mount St. Vincent, by Sami Edge, 2015, The Seattle Times. Copyright 2016 by Erika Schultz and The Seattle Times.*

### **3. Methodology**

#### **3.1. Approach**

This paper will investigate age segregation in the United States and how intergenerational shared building sites can be a solution to the growing concern. Qualitative research will be gathered by exploring current intergenerational building programs already established in the United States what types of benefits they provide and why they are successful. A thorough scope will be also completed on published literature on the topic along with looking at books and websites that provide information on proper design for the elderly and children.

### **3.1.1. Data Collection**

Data collection for this thesis project will need to include how intergenerational shared building sites are created and what type of spaces are needed to successfully implement programs. Information regarding requirements for building typologies that hold both the elderly and children will need to be explored including accessibility, room sizes, and amenities. This qualitative data will mainly be gained through material from North Dakota State University's libraries along with gathering literature from their database and scholarly websites. This data will be selected for review if it follows authority, accuracy, objectivity, and currency. Case studies Generations United and zwei+ plus Intergenerational Housing will also be an important opportunity to gather information on intergenerational programs and sites that are already in place, what type of amenities and spaces they provide, and what kinds of facilities they are in.

Data will also need to be collected regarding a site location for this thesis project. A location will be selected based on location to other amenities important for the building users, and the surrounding landscape, and ensuring that the site is a proper size for designing a building that holds an intergenerational shared building site through the International Building Code, zoning regulations, and site analysis.

### **3.1.2. Analysis of Literature**

To find and use data for this paper, there will need to be an analysis that thoroughly examines each source critically and actively through looking at the publication source, determining the currency of the information, checking for bias, identifying evidence and support, and making sure the context is relevant for this paper. Sources will be found in the library, databases, and websites. Each source will be organized and grouped into different areas regarding age segregation, intergenerational shared sites, and design. Going further into research

and analysis, recurring themes and information will be identified to help gain a consensus on the discussed topics. Finally, the information will be presented not only in the literature review but also in the overall final design that occurs because of the research.

### **3.1.3. Conclusion**

The key aspects of this research will include reviewing literature such as scholarly books and journals, and websites, along with looking at case studies of programs and specific facilities that focus on the care of the elderly and children. This research is essential in providing more information on the formation of intergenerational shared sites and what considerations need to be looked at in the design of these spaces and programs. Age segregation in the United States will only continue to grow if more attention is not brought to the benefits of intergenerational shared building sites and why bringing together the elderly and youth is a big step in unifying generations.

## **3.2. Project Location – Fargo, ND**

Fargo, North Dakota is a growing city in eastern North Dakota with a population of over 131,500 people. This city was founded in 1871 when the first settlers created homes where the Northern Pacific Railroad met the Red River (*The City of Fargo - City History*, n.d.). Over the years, Fargo has continued to grow and expand with new businesses and homes. In a recent demographic forecast done by the Fargo-Moorhead Metropolitan Council of Governments, it was estimated that the population of the Fargo-Moorhead area could grow to over 350,000 by 2050 as shown in Figure 14 (*Fargo-Moorhead Metropolitan Council of Governments, 2022*).

**Figure 13.**

*Map of Fargo, ND*

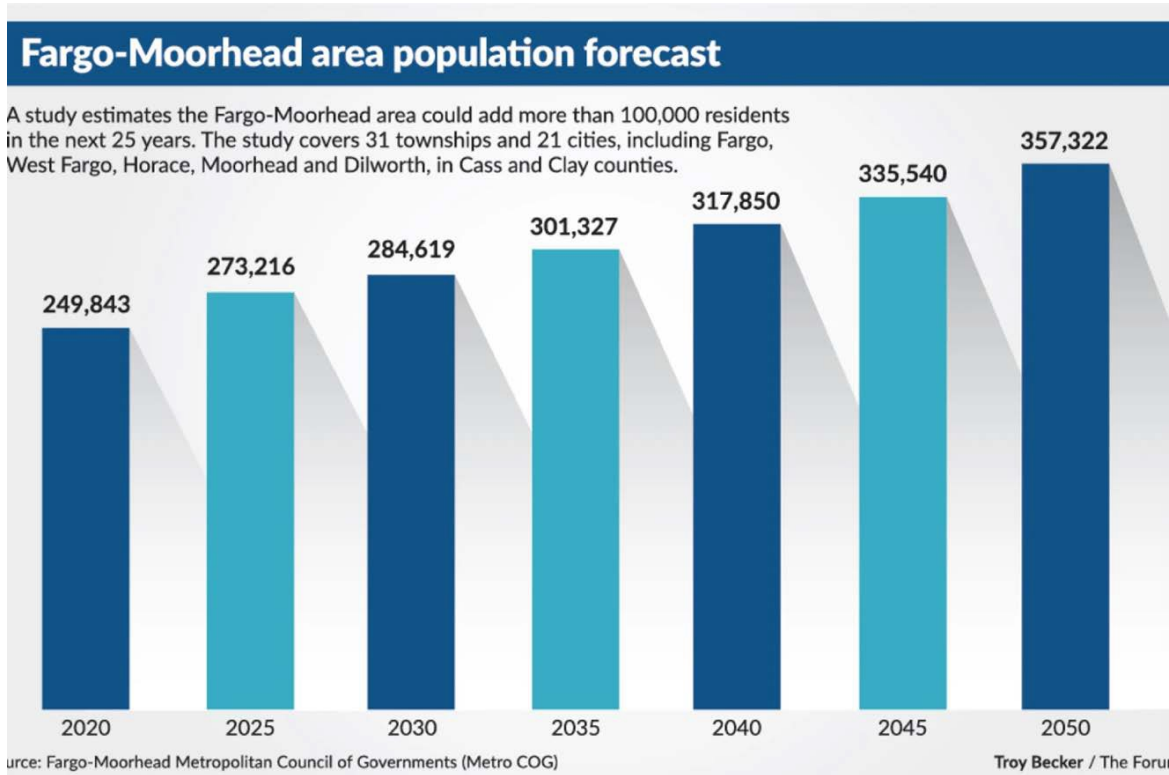


*Note:* The overall area of Fargo, ND. From *Map of Fargo, North Dakota*, by GIS Geography, 2023. (<https://gisgeography.com/fargo-map-north-dakota/>). Copyright 2023 by GIS Geography.



**Figure 14.**

*Fargo-Moorhead Area Population Forecast*

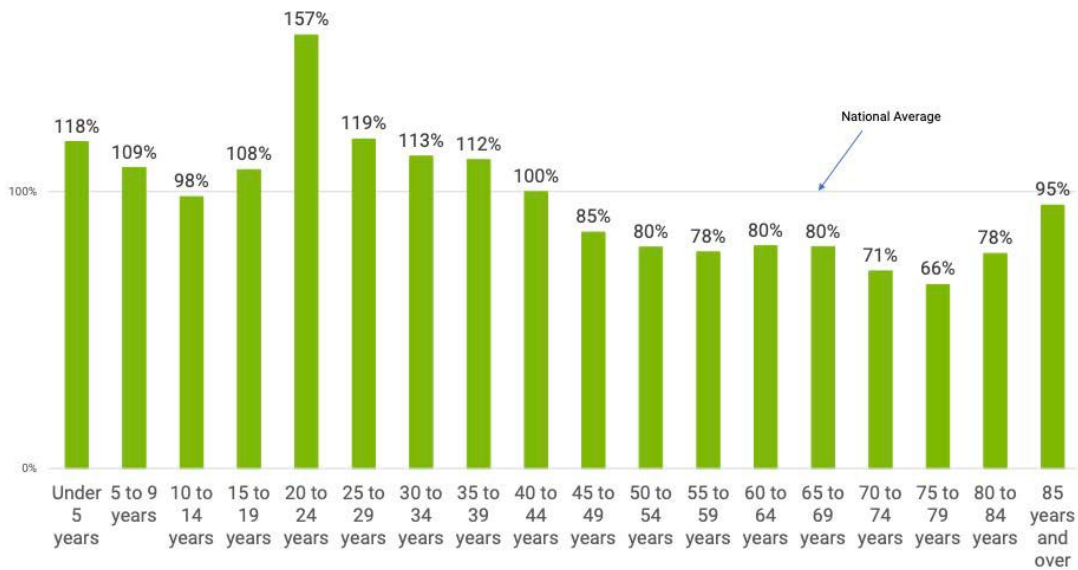


*Note:* The population is expected to increase significantly in the next 25 years. From *Fargo-Moorhead area projected to grow by at least 100,000 people by 2050, Metro COG says*, by Reuer and Troy Becker 2023, *The Forum*. Copyright 2023 by Fargo-Moorhead Metropolitan Council of Governments (Metro COG).

When looking more closely at Fargo-Moorhead’s population, it seems to be dominated by young with a high number of college-aged students in their early 20s as shown in Figure 15 (*Fargo-Moorhead Metropolitan Council of Governments, 2022*). The Fargo-Moorhead area has several universities include North Dakota State University, Concordia College, and Minnesota State University. This will likely contribute to the projected population growth. There is a smaller number of seniors, but this number can also be expected to grow in the future.

**Figure 15.**

*Fargo-Moorhead Age Group Averages*

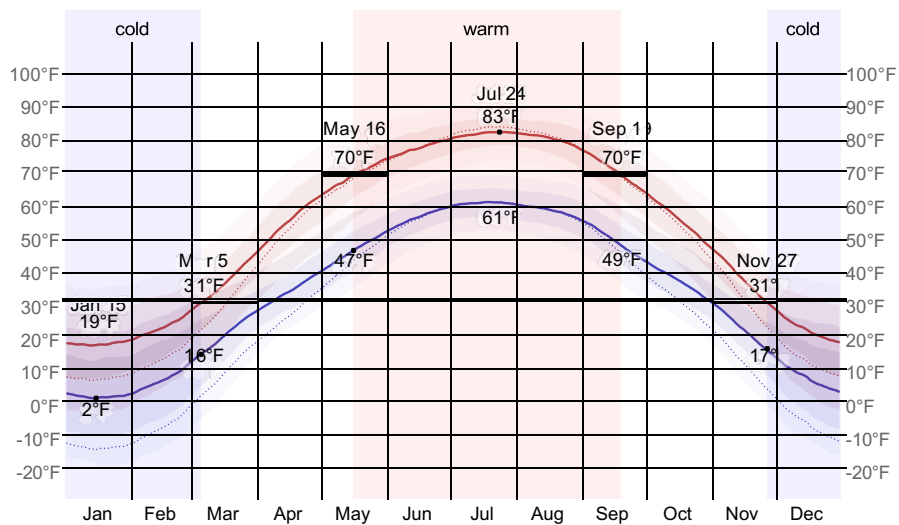


*Note:* Fargo-Moorhead MSA Age Group Concentrations Relative to National Averages. From *2050 Baseline Demographic Forecast* (p. 5), by Metro COG, 2022. Copyright 2022 by Metro COG.

In Fargo, summers are long and warm with average temperatures of 83° F. Winter is also long with freezing temperatures, intense wind, and snow. Temperatures during this time can range from 22° F to -15° F. Rainfall and humidity are seen at their peak during the summer months while winter months are immensely dry.

**Figure 16.**

*Fargo, ND Temperature*



*Note: Average High and Low Temperature in Fargo, ND. From Climate and Average Weather Year Round in Fargo by Weather Spark, n.d. (<https://weatherspark.com/y/9084/Average-Weather-in-Fargo-North-Dakota-United-States-Year-Round>). Copyright n.d. by Cedar Lake Ventures, Inc.*

**Figure 17.**

*Precipitation in Fargo*



*Note: From Climate and Average Weather Year Round in Fargo by Weather Spark, n.d. (<https://weatherspark.com/y/9084/Average-Weather-in-Fargo-North-Dakota-United-States-Year-Round>). Copyright n.d. by Cedar Lake Ventures, Inc..*

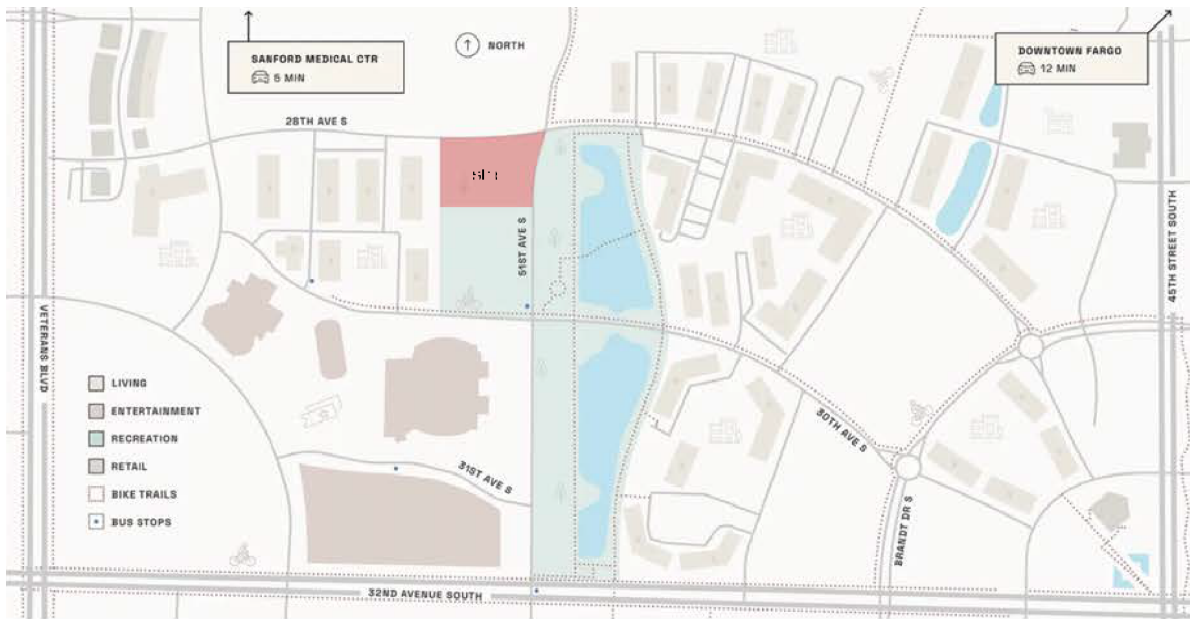
Overall, Fargo is a relatively spread-out city with a dense downtown district. Current city codes encourage residential, commercial, and industrial buildings to be built outside of the downtown area. With a strongly projected population growth, the city will need to determine whether it will continue to push new development towards city limits or encourage a denser development with new businesses and homes introduced in already developed areas.

### **3.3. Project Location – Urban Plains**

Urban Plains is a developing neighborhood in Fargo, North Dakota that has a combination of housing such as apartments, townhomes, condos, and single-family homes, along with commercial, office, and medical facilities. The development of this area began in 2007 when the Fargo Scheels Arena was built. There are three different parks in this neighborhood including the Urban Plains Playground, Urban Plains Park, and the Garden of Healing. There is also a total of five miles of bike trails. Recently, the construction of the Fargo Moorhead Science Museum started right in the middle of this area (Urban Plains, 2023).

**Figure 18.**

*Neighborhood Map*



*Note:* Map of Urban Plains in Fargo, North Dakota. From *Find everything you’re looking for at Urban Plains*, by Urban Plains, n.d. (<https://urbanplains.com/about/map/>). Copyright 2023 by Urban Plains.

Urban Plains makes a great neighborhood for an intergenerational shared site as it is close to residential housing, close to entertainment such as the new Fargo Moorhead Science Museum, and near 32<sup>nd</sup> Avenue, a road many take to and from work making it easy to find and get to. The three parks and trails offer places for activity during the day for young children and older adults. Being close to Sanford Medical Center can also provide a sense of peace for family members who bring their family members for the day.

### **3.4. Specific Site**

#### **3.4.1. Site Selection Considerations**

Certain considerations must be taken when deciding on a site for a daycare facility that will home both the youth and elderly. Picking the right site can ensure that the base environment

will be able to develop successfully without running into conflicts that are difficult to resolve. A thorough study should be completed to understand current and historical data about the property along with a site analysis to determine if an intergenerational daycare facility is feasible on the site.

One of the most important aspects to consider is whether the demand is there for this specific service in that area. As for intergenerational daycare buildings, are there families in that area that may have children or older adults who need services during the day? Is there a growing need for this type of service? Are there currently any types of businesses in the area that already provide this service? In addition to these questions, one must determine if there is an appropriate amount of land required for this typology along with what type of zoning requirements are needed. Proper outdoor areas for recreation along with parking are important aspects of daycares.

### **3.4.2. Site**

The selected site for this thesis project is located at 5100 28<sup>th</sup> Avenue South in Fargo, North Dakota (see Figure 19 and Figure 20). The site size is 114,125 square feet, roughly 2.6 acres. The site is owned by Urban Plains Land Company, LLC. Currently, there is nothing located on the site as shown in Figure 21. The site's land use is zoned at Limited Commercial, meaning it is primarily intended to accommodate low-intensity office and retail sales and service uses. There is relatively low pedestrian traffic in this area except for residential housing to the west of the site.

**Figure 19.**

*Map of Site Location*



*Note:* Site location in a large context. From *Interactive Map*, by The City of Fargo, n.d. (<https://gis.cityoffargo.com/link/jsfe/index.aspx>). Copyright n.d. by The City of Fargo.

**Figure 20.**

*Site Location in Closer Context*



*Note:* Site location in a large context. From *Interactive Map*, by The City of Fargo, n.d. (<https://gis.cityoffargo.com/link/jsfe/index.aspx>). Copyright n.d. by The City of Fargo.

**Figure 21.**

*Picture of Site*



*Note:* Picture of the site looking south. From *Google Earth* by Google, 2022. (<https://earth.google.com/web/@46.84139831,-96.87310799,272.35745863a,546.14573336d,60y,9.97632134h,85.77701172t,0r/data=OgMKAT>). Copyright n.d. by Google.



**Figure 22.**

*Looking North*



*Note:* Picture of the site looking south. From *Google Earth* by Google, 2022. (<https://earth.google.com/web/@46.84139831,-96.87310799,272.35745863a,546.14573336d,60y,9.97632134h,85.77701172t,0r/data=OgMKAT>). Copyright n.d. by Google.

**Figure 23.**

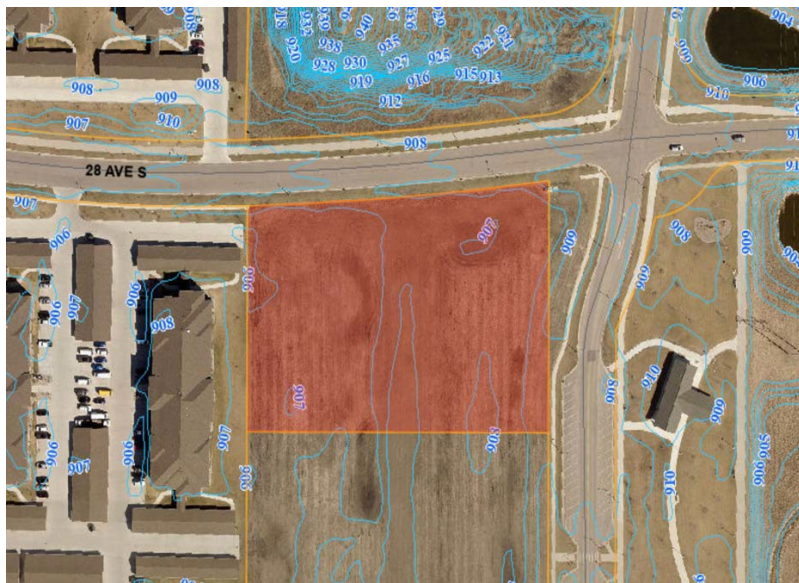
*Looking West*



*Note:* Picture of the site looking south. From *Google Earth* by Google, 2022. (<https://earth.google.com/web/@46.84139831,-96.87310799,272.35745863a,546.14573336d,60y,9.97632134h,85.77701172t,0r/data=OgMKAT>). Copyright n.d. by Google.

**Figure 24.**

*Site Topography*

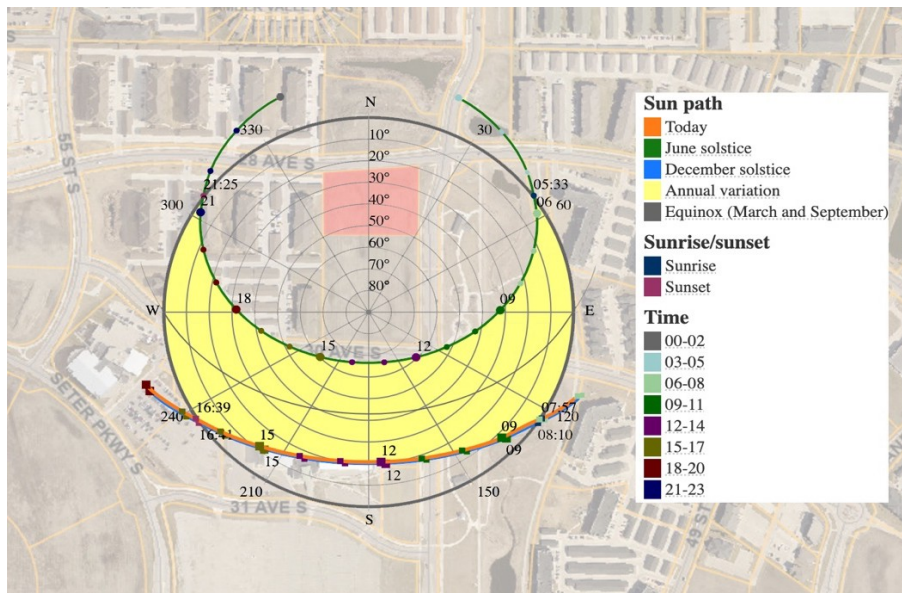


*Note:* From *Interactive Map*, by The City of Fargo, n.d. (<https://gis.cityoffargo.com/link/jsfe/index.aspx>). Copyright n.d. by The City of Fargo.

The overall topography of the site is relatively flat, giving a better opportunity for design without too much consideration of large contours on the site. There are no signs of human intervention on the site. As shown in Figure 25, the site will receive a considerable amount of sunshine during the day. There is currently no vegetation on the site or large surrounding buildings that would block out the sun from reaching the site. With a lack of vegetation and buildings on the north, east, and south sides of the site, wind will reach the site. Summer winds come from the south to southeast and winter winds come from the north to north-west. When designing the proposed intergenerational day center, consideration will need to go into potential wind protection and vegetation.

**Figure 25.**

*Site Sun Path*



*Note:* From *Interactive Map*, by The City of Fargo, n.d. (<https://gis.cityoffargo.com/link/jsfe/index.aspx>). Copyright n.d. by The City of Fargo.

**Figure 26.**

*Zoning Requirements for Limited Commercial*

Dimensional Standard						
	GO	LC	DMU	GC	LI	GI
Minimum Lot Size						
Minimum Setbacks(Ft.)						
Front	20	10	0	20	20	50
Interior Side	5	5	0	5 <sup>[1]</sup>	10 <sup>[1]</sup>	20 <sup>[1]</sup>
Street Side	20	10	0	20	20	50
Rear	15	15	0	15	20	20
Watercourse Setback	[3]	[3]	[3]	[3]	[3]	[3]
Maximum Building Coverage (Pct. of Lot)	65	55	100	85	85	85
Maximum Height (Ft.)	60	35/60 <sup>[2]</sup>	None	None	None	None

*Note:* From *Base Zoning Districts (Article 20-02)* by Code of Ordinances, n.d. ([https://library.municode.com/nd/fargo/codes/code\\_of\\_ordinances?nodeId=FARGO\\_MUNICIPAL\\_CODECIFANODA\\_CH20LADECO\\_ART20-02BAZODI\\_S20-0211LCLICODI](https://library.municode.com/nd/fargo/codes/code_of_ordinances?nodeId=FARGO_MUNICIPAL_CODECIFANODA_CH20LADECO_ART20-02BAZODI_S20-0211LCLICODI)). Copyright n.d. by The City of Fargo.

As shown above in Figure 26, with Limited Commercial zoning requirements, the site will be limited to only 55% coverage from the building. This does not include the parking lot. Minimum setbacks will need to be put in place during the design phase and a maximum building height will be set at 60 feet.

**Figure 27.**

*Urban Plains Park*



*Note:* This park is directly east of the selected site. From *Monarch Butterfly Tagging* by Fargo Park District, n.d. (<https://www.fargoparks.com/events-and-deadlines/monarch-butterfly-tagging>). Copyright 2023 by Fargo Park District.

The neighborhood surrounding the site has a balance of amenities that would be beneficial to an intergenerational daycare center for older adults and children. The park to the east of the site, Urban Plains Park, offers playground equipment for children, walking paths, gardens, and shaded areas of rest for older adults to gather (shown in Figure 27).

The Scheels Arena is within walking distance to the south of the site and hosts different family-friendly events. There are also plans for the new Fargo Moorhead Science Museum within walking distance from the site, offering great opportunities for trips during the day. The site is near 32<sup>nd</sup> Avenue South, offering easy wayfinding for those who will drop off members in the morning and ensuring that they won't have to drive far out of their way. Sanford Medical Center is just north of the site, providing some sense of peace to family members in case of an emergency.

**Figure 28.**

*Surrounding Places*



*Note.* Site location in a large context. From *Interactive Map*, by The City of Fargo, n.d. (<https://gis.cityoffargo.com/link/jsfe/index.aspx>). Copyright n.d. by The City of Fargo.

### 3.5. Case Studies

**Table 1.**

*Case Study Comparison*

Case Studies			
	Playful Roaming Nursery	Senior Day Center	Zwei+plus
Typology:	Childcare Facility	Senior Day Care Center	Intergenerational Living Facility
Location	Tingueux, France	Colombia	Wien, Australia
Architect:	Philippe Gibert Architecte	Niro Arquitectura, OAU	trans_city TC
Year:	2021	2021	2018
Size:	14,000 sq. ft.	3,500 sq. ft.	161,800 sq. ft.
Levels:	1	1	7
Relation to Proposal			
Flexible Layout	x	x	x
Outdoor Areas	x	x	x
Stimulating	x		x
Accessible	x	x	x
Multipurpose	x	x	x

*Note.* Each case study represents three different aspects of an intergenerational shared building. Own Work.

#### 3.5.1. Playful Roaming Nursery

Playful Roaming Nursery (Figure 29) is a one-story early childhood nursery designed by Philippe Gibert located in Tingueux, France (ArchDaily, 2022). The building has an area of 13,993 square feet with a design that focuses on three main principles: the free movement of children in the nursery, the creation of playful universes, and that the child is the author of his or her game (ArchDaily 2022). There is an adequate parking lot to the east of the nursery along with outdoor play areas for the children (Figure 30).

**Figure 29.**

*Playful Roaming Nursery*



*Note.* From *Playful Roaming Nursery / Philippe Gibert Architecte* by Paula Pintos, 2022, *Arch Daily*. (<https://www.archdaily.com/990509/playful-roaming-nursery-philippe-gibert-architecte>). Copyright 2022 by Sergio Grazia.



**Figure 30.**

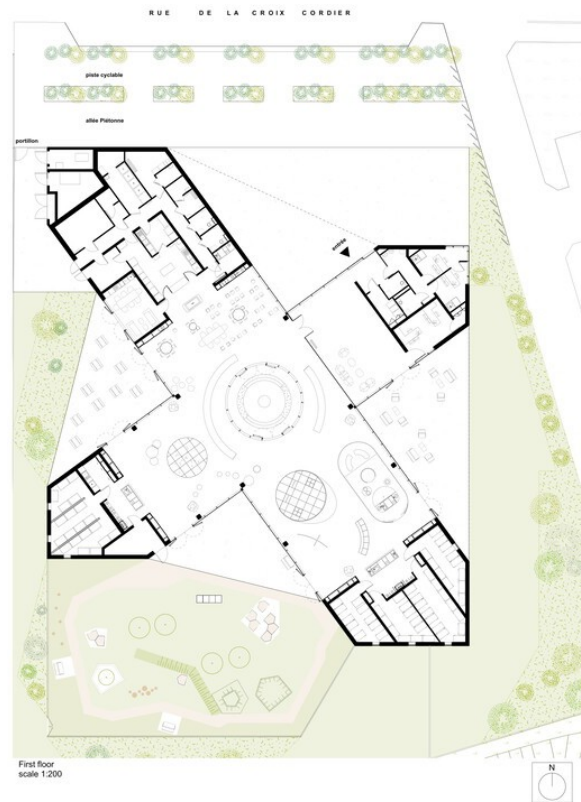
*Playful Roaming Nursery Site Plan*



*Note.* From *Playful Roaming Nursery / Philippe Gibert Architecte* by Paula Pintos, 2022, *Arch Daily*. (<https://www.archdaily.com/990509/playful-roaming-nursery-philippe-gibert-architecte>). Copyright 2022 by Philippe Giber Architecte.

**Figure 31.**

*Playful Roaming Nursery Floorplan*



*Note.* From *Playful Roaming Nursery / Philippe Gibert Architecte* by Paula Pintos, 2022, *Arch Daily*. (<https://www.archdaily.com/990509/playful-roaming-nursery-philippe-gibert-architecte>). Copyright 2022 by Philippe Gibert Architecte.

To achieve these principles, Philippe Gibert focused on developing the plan around a central space, an atrium (Figure 32). This allows the children to play outdoors in the atrium space with a 360-degree view of the surrounding daycare. There are four different areas on each corner of the building. Concrete and metal paneling were used on the exterior of the building with sharp angles and curtain walls. The overall building is shaped like a cross with the atrium being in the center. This allowed for the exploration of the four orientations of the plot (ArchDaily, 2022). The designers continued with calm, neutral colors on the interior of the nursery with different

concrete and wood textures. Developing the motor and cultural development of the children was a big goal with the type of furniture that is used in the nursery. All furniture and installations were custom-designed to keep exploration and experimentation in mind (ArchDaily, 2022).

**Figure 32.**

*Playful Roaming Nursery Atrium*



*Note.* From *Playful Roaming Nursery / Philippe Gibert Architecte* by Paula Pintos, 2022, *Arch Daily*. (<https://www.archdaily.com/990509/playful-roaming-nursery-philippe-gibert-architecte>). Copyright 2022 by Sergio Grazia.

Playful Roaming Nursery is a large open area with different spaces for children to gather. There is a self-catering space, a sensory space, a theater-imitation space, a library-language space, a construction site space, and a laboratory (Figure 33). The openness of the plan allows for spaces that include welcoming gardens, a playground, a terrace, and a forecourt (ArchDaily, 2022).

**Figure 33.**

*Self-Catering Space*



*Note.* From *Playful Roaming Nursery / Philippe Gibert Architecte* by Paula Pintos, 2022, *Arch Daily*. (<https://www.archdaily.com/990509/playful-roaming-nursery-philippe-gibert-architecte>). Copyright 2022 by Sergio Grazia.

**Conclusion**

Playful Roaming Nursery was selected as a case study for its ability to combine multiple spaces in an open floor plan while focusing on enrichment with subtle materials, textures, and furniture. The atrium in the middle of the building draws your eye in and provides a new area of exploration for the children. The textured ceiling fixtures create an organic shape that contradicts the overall rigid shape of the building in a successful way. Overall, the architect managed to use architecture as a tool for enrichment and development through gathering spaces for children to interact and learn while also providing different textures and equipment.

### **3.5.2. Senior Day Center**

The Day Center is a single-level senior daycare center located in Colombia and was designed by Niro Arquitectura (ArchDaily, 2022). The focus of this project was to create a space that elevated the recreation and entertainment of the elderly while also looking at their needs, tastes, and interests (Figure 34). The one-story building was formed around a mass of existing trees to preserve as many as possible (ArchDaily, 2022). Because of this, The Day Center has three central courtyards. The first courtyard has a connection to the dining room and gym with a green area and floating platform. The second courtyard has access to existing Chinese jasmines that hold a strong representation of the space. Finally, the third courtyard is in the central part of the building and is surrounded by glass on all four sides. This offers great views of surrounding vegetation such as ferns, agaves, palm trees, and small plants (ArchDaily, 2022).

**Figure 34.**

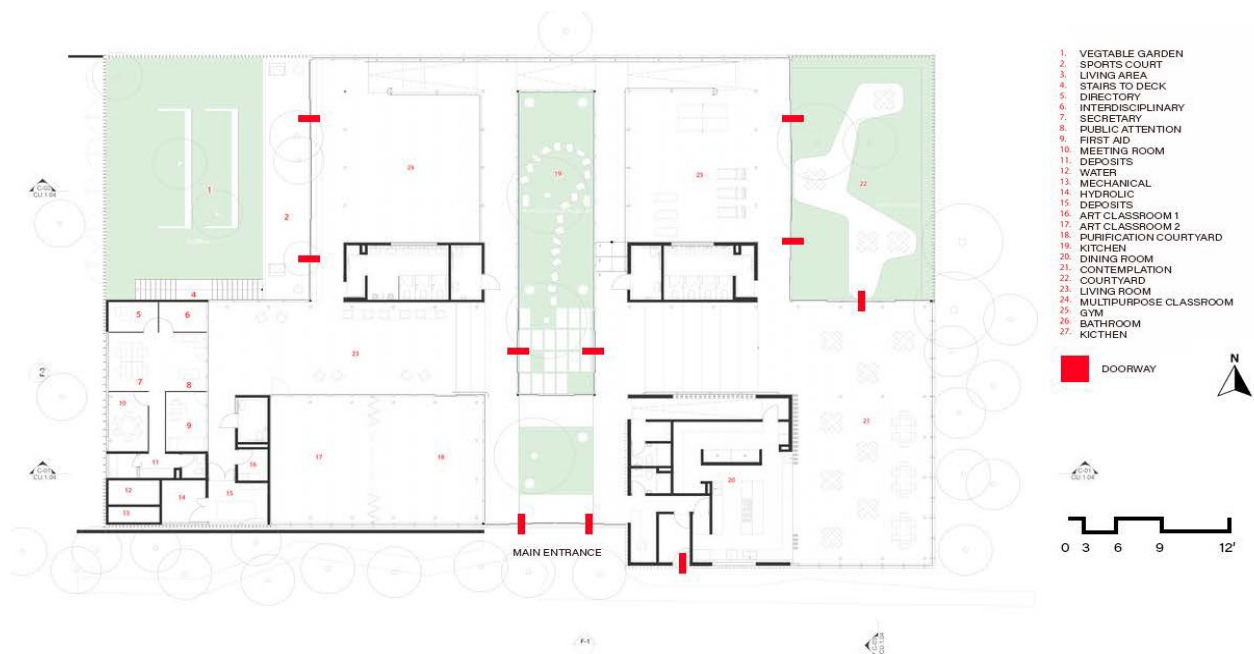
*The Day Center Exterior*



*Note.* From *Senior Day Center / Niro Arquitectura + OAU | Oficina de Arquitectura y Urbanismo* by Clara Ott, 2022, *Arch Daily*. (<https://www.archdaily.com/986423/senior-day-center-niro-arquitectura-plus-oau-oficina-de-arquitectura-y-urbanismo/62e1ed15f9ad2a01655ec6ad-senior-day-center-niro-arquitectura-plus-oau-oficina-de-arquitectura-y-urbanismo-image>). Copyright 2022 by Niro arquitectura + OAU.

**Figure 35.**

*The Day Center Floorplan*



*Note.* From *Senior Day Center / Niro Arquitectura + OAU | Oficina de Arquitectura y Urbanismo* by Clara Ott, 2022, *Arch Daily*. (<https://www.archdaily.com/986423/senior-day-center-niro-arquitectura-plus-oau-oficina-de-arquitectura-y-urbanismo/62e1ed15f9ad2a01655ec6ad-senior-day-center-niro-arquitectura-plus-oau-oficina-de-arquitectura-y-urbanismo-image>). Copyright 2022 by Niro arquitectura + OAU.

The architects wanted the Day Center to merge with the surrounding trees. To do this they use a variety of curtain walls, slender metallic elements, and concrete that is covered with vegetation (ArchDaily, 2022). This allows daily attendees to connect to outdoor elements and not feel confined to one small area. In addition to the gym and dining room, the Day Center has a multipurpose room with a community stage that can open to one of the courtyards to host events, presentations, and other community activities (ArchDaily, 2022). Two art classrooms can be combined for one large activity area along with a court area for a popular sport in Columbia. The architects successfully balanced different outdoor areas and indoor activity areas throughout the building.

**Figure 36.**

*Small Courtyard*

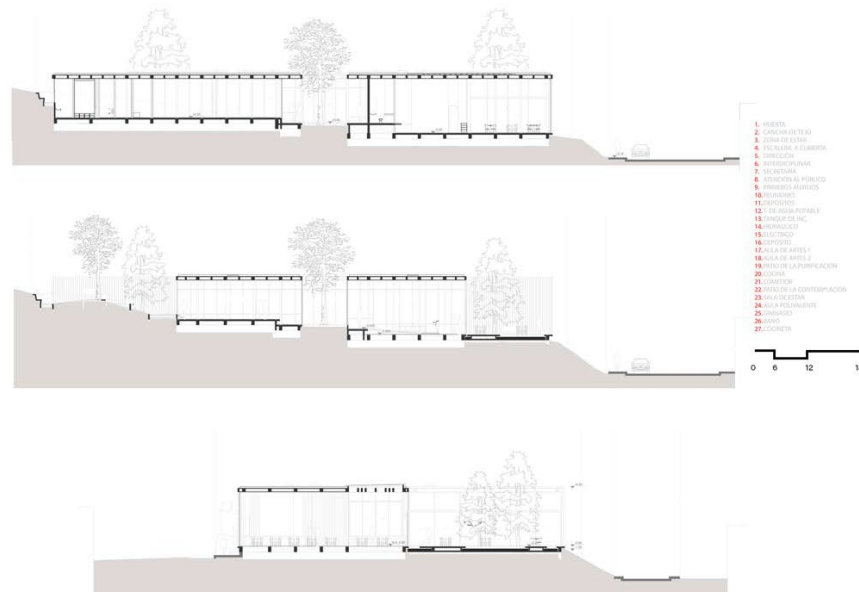


*Note. From Senior Day Center / Niro Arquitectura + OAU | Oficina de Arquitectura y Urbanismo by Clara Ott, 2022, Arch Daily. (<https://www.archdaily.com/986423/senior-day-center-niro-arquitectura-plus-oau-oficina-de-arquitectura-y-urbanismo/62e1ed15f9ad2a01655ec6ad-senior-day-center-niro-arquitectura-plus-oau-oficina-de-arquitectura-y-urbanismo-image>). Copyright 2022 by Niro arquitectura + OAU.*



**Figure 37.**

*The Day Center Section Cuts*



*Note.* From *Senior Day Center / Niro Arquitectura + OAU | Oficina de Arquitectura y Urbanismo* by Clara Ott, 2022, *Arch Daily*. (<https://www.archdaily.com/986423/senior-day-center-niro-arquitectura-plus-oau-oficina-de-arquitectura-y-urbanismo/62e1ed15f9ad2a01655ec6ad-senior-day-center-niro-arquitectura-plus-oau-oficina-de-arquitectura-y-urbanismo-image>). Copyright 2022 by Niro arquitectura + OAU.

## Conclusion

The Day Center in Colombia was selected for a case study for its ability to combine the outdoor environment with the users on the insides. This is an important element to have in an elderly day care center as many see positive benefits from being in the outdoors. Although this case study does not focus entirely on the indoor spaces of the Day Center, it shows the difference the environment can have when having a proper connection to the outdoors through large open windows and multiple outdoor spaces for the elderly to gather. The designers also made a strong effort in the material selection based on the location of the building being submerged in the forest. Using metal, concrete, and darker textures seemed to complement the site and building.

**Figure 38.**

*The Day Center Interior*



*Note.* From *Senior Day Center / Niro Arquitectura + OAU | Oficina de Arquitectura y Urbanismo* by Clara Ott, 2022, *Arch Daily*. (<https://www.archdaily.com/986423/senior-day-center-niro-arquitectura-plus-oau-oficina-de-arquitectura-y-urbanismo/62e1ed15f9ad2a01655ec6ad-senior-day-center-niro-arquitectura-plus-oau-oficina-de-arquitectura-y-urbanismo-image>). Copyright 2022 by Niro arquitectura + OAU.

### **3.5.3. Zwei+plus**

Zwei+plus is an intergenerational housing facility located in Wien, Austria, and was designed by trans\_city TC. The building has an area of 161,814 square feet and was completed in 2018 (ArchDaily, 2020). It is subsidized social housing where seniors can come together with young generations. Four L-shaped buildings form together courtyards, shown in Figure 40, for residents to use along with different programmed spaces on the ground floor that include a community café, a laundromat with a playroom for kids, a kindergarten, and an assisted living

center as shown in Figure 41 (ArchDaily, 2020). The upper floors are considered socially active spaces. For example, the one-bedroom units face out to open galleries that allow residents to see each other and chat as they walk by (ArchDaily, 2020).

**Figure 39.**

*zwei+plus Intergenerational Housing Exterior*



**Figure 40.**

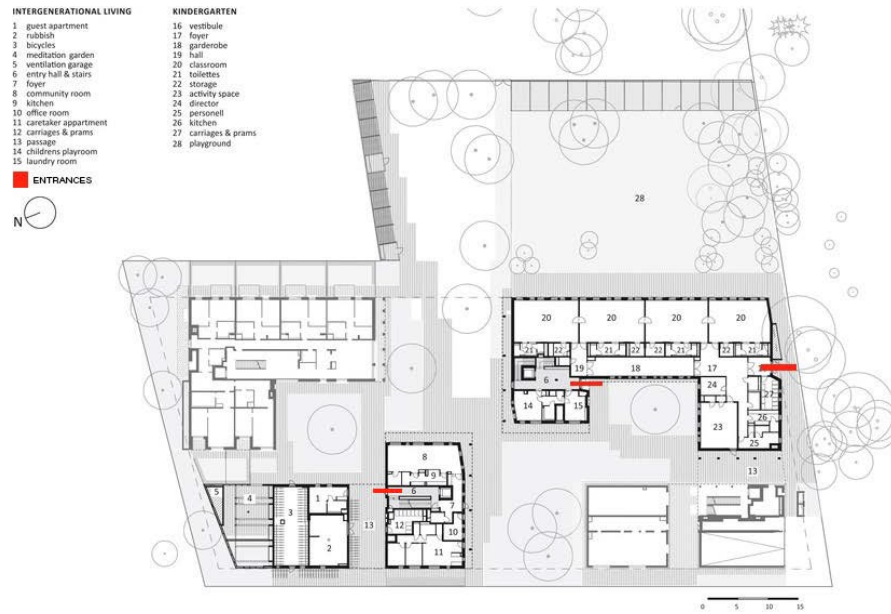
*zwei+plus Intergenerational Housing Figure Ground*



*Note.* From *STA | zwei+plus Intergenerational Housing / trans\_city TC* by Paula Pintos, 2020, *Arch Daily*. (<https://www.archdaily.com/940835/sta-zwei-plus-plus-intergenerational-housing-trans-city-tc> ). Copyright 2020 by trans\_city TC.

**Figure 41.**

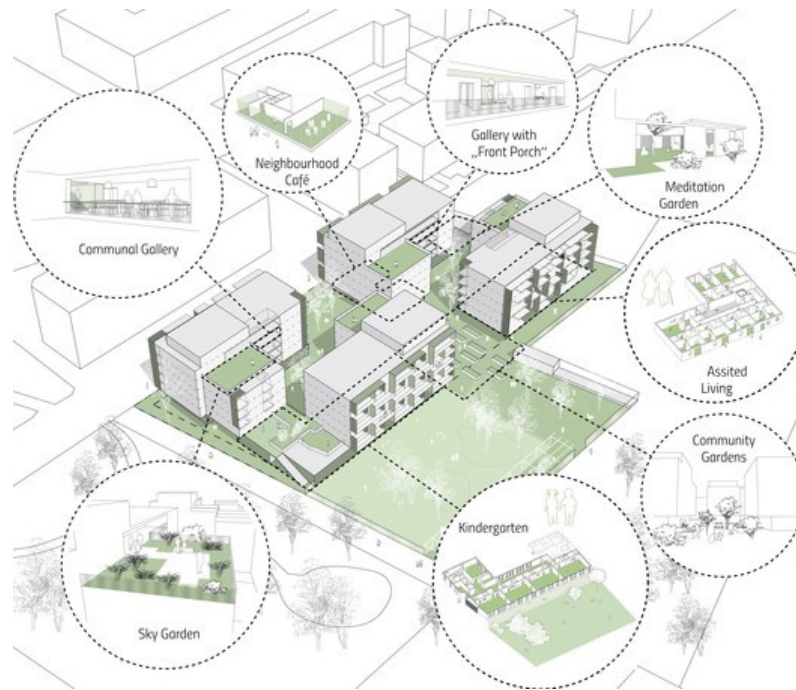
*zwei+plus Intergenerational Housing Floorplans*



*Note.* From *STA | zwei+plus Intergenerational Housing / trans\_city TC* by Paula Pintos, 2020, *Arch Daily*. (<https://www.archdaily.com/940835/sta-zwei-plus-plus-intergenerational-housing-trans-city-tc> ). Copyright 2020 by trans\_city TC.

**Figure 42.**

*zwei+pkus Intergenerational Housing Program*



*Note.* From STA | *zwei+plus Intergenerational Housing / trans\_city TC* by Paula Pintos, 2020, *Arch Daily*. (<https://www.archdaily.com/940835/sta-zwei-plus-plus-intergenerational-housing-trans-city-tc>). Copyright 2020 by trans\_city TC.

Residents have the choice from a few different floorplan options at zwei+plus Intergenerational Housing. The architects consider these “all-smart” units, where they can house different households within one unit (ArchDaily, 2020). For example, one can hold a family while having a separate accessible studio for an elderly parent. This way different generations of a family can live together while still having their own space and privacy.

Each of the buildings is portioned on the site to help generate exterior spaces for the residents (ArchDaily, 2020). The largest outdoor space is the playground with large green areas and vegetation. In addition, there are small courtyards stationed between the buildings that allow for more privacy for residents as seen in Figure 43. A sky garden is located on the roof of each

building where residents can sit out and enjoy some fresh air or tend to the food that was planted. Private residential balconies hold wooden details that provide a sense of warmth and privacy (Figure 35) while providing a modern twist with metallic-glazed surfaces. The architects also brought that sense of warmth into the interior with soft-colored wood and white walls.

**Figure 43.**

*zwei+plus Intergenerational Housing Balconies*



*Note.* From *STA | zwei+plus Intergenerational Housing / trans\_city TC* by Paula Pintos, 2020, *Arch Daily*. (<https://www.archdaily.com/940835/sta-zwei-plus-plus-intergenerational-housing-trans-city-tc> ). Copyright 2020 by Hertha Hurnaus, Leonahard Hizensauer.

**Figure 44.**

*View from southwest into the outdoor courtyard*



*Note. From STA | zwei+plus Intergenerational Housing / trans\_city TC by Paula Pintos, 2020, Arch Daily. (<https://www.archdaily.com/940835/sta-zwei-plus-plus-intergenerational-housing-trans-city-tc> ). Copyright 2020 by Hertha Hurnaus, Leonahard Hizensauer.*



## Figure 45.

### *Interior Unit*



*Note.* From *STA | zwei+plus Intergenerational Housing / trans\_city TC* by Paula Pintos, 2020, *Arch Daily*. (<https://www.archdaily.com/940835/sta-zwei-plus-plus-intergenerational-housing-trans-city-tc> ). Copyright 2020 by Hertha Hurnaus, Leonahard Hizensauer.

## Conclusion

Overall, zwei+plus Intergenerational Housing was selected for a case study for its ability to create a variety of programs for all residents involved. This is a great example on intergenerational living through the organization and sequencing of different spaces into a building program to encourage interactions between residents along with the materiality that was chosen to create calm, inviting environments. The architects put great effort into providing adequate outdoor spaces and private courtyards to ensure all goers have the opportunity for connection.

### 3.6. Detailed Space Program

When looking at intergenerational shared sites, one must look at how to design for the old and young in one space. This should include fostering social contact, reducing loneliness, improving functional abilities, and promoting healthy behaviors (Generations United, 2021). Generations United has come up with general design principles that can be followed to create a high-quality intergenerational shared site. These include:

1. The building is relationship-centered, providing continuous opportunities for structured and informal interactions.
2. There are separate spaces for elders and children as well as shared spaces for joint programming, providing opportunities for choice.
3. The design is centered around the individual users, recognizing the strengths, limitations, and preferences of individuals at every age.
4. The building spaces are comfortable, safe, and accessible using universal design principles and welcoming for all ages and abilities.
5. The environment supports a sense of belonging and contributions on the part of participants.

Using these guidelines will set up intergenerational programs to be a physical environment that will foster relationships and creativity. In addition, Generations United broke down these guidelines into more specific elements to be studied for an intergenerational shared site. These include accessibility, acoustics, atmosphere, boundary, safety, flexibility, social connection, visibility, physical proximity, empowerment, and program autonomy (Generations United, 2021). The following is an approximate space program for an intergenerational daycare center based on the 2021 International Building Code broken down into an adult day center and a

childcare center. An intergenerational day care center must effectively combine the programs to best utilize space and provide the opportunity for relationships between the young and old. These numbers and spaces are subject to change throughout the design of this thesis project.

**Table 2.**

*Detailed Space Program*

<b>Space Program</b>					
<b>Project Elements: Adult Day Center &amp; Child Daycare</b>					
<b>Adult Day Center</b>		<b>Area</b>	<b>Child Daycare</b>		<b>Area</b>
Program Director		200 sf	Program Director		200 sf
Assistant Administrator		150 sf	Assistant Administrator		150 sf
Director of Nursing		150 sf	General Administration		120 sf/office
Nurse		120 sf	Conference Room		500 sf
General Administration		120 sf/office	Lobby & Waiting Area		TBD
Conference Room		500 sf	Public Restrooms		25 sf/fixture
Lobby & Waiting Area		TBD	Dining Area		20 sf/person
Public Restrooms		25 sf/fixture	Kitchen		200 sf/person
Dining Area		20 sf/person	Participant Toilets		25 sf/fixture
Kitchen		200 sf/person	Janitor's Closet		40 sf
Participant Toilets		25 sf/fixture	Multipurpose Room		TBD
Medical Support		140 sf	Employee Room		120 sf
Janitor's Closet		40 sf	Employee Restrooms		25 sf/fixture
Multipurpose Room		TBD	Gym Area		TBD
Employee Room		120 sf	Maintenance Storage		TBD
Employee Restrooms		25 sf/fixture	Laundry		TBD
Gym Area		TBD	Classroom		20 sf/person
Maintenance Storage		TBD	Classroom		20 sf/person
Laundry		TBD	Outdoor Play Area		TBD
Outdoor Area		TBD	Parking		
Parking					

*Note.* This is an initial space program. Own Work.

## **4. Results and Conclusions**

### **4.1. Final Project Description**

This project is a 28,000-square-foot intergenerational daycare center located in the Urban Plains neighborhood of Fargo, North Dakota that provides daily care to older adults and young children. The project provides different spaces for intergenerational activities and separate spaces for both generations for services that need to be completed or for time alone. These intergenerational spaces include a large multipurpose room, community kitchen, library, theater, shared patios, and an outdoor play area. There is also a variety of colors, materials, and furnishings that can improve mood and encourage social interaction.

### **4.2. Meeting Project Objectives**

#### **4.2.1. Relationships**

This project focuses on providing the right spaces that encourages intergenerational contact and forming relationships between the bookend generations to counteract age segregation. The multipurpose room provides a stage for performances, can hold large events between generations, and is connected to the community kitchen where children can cook with an older adult and learn valuable knowledge and experiences. The library allows for older adults to come in and read to children or vice versa. There are different seating areas for one-on-one conversations or group conversations as well. The theater provides the space for movies to be displayed or educational videos that both generations can enjoy watching or learning from. Finally, the outdoor spaces allow for the older adults and children to be active together. Although it will take effort from the daycare staff and schedule to ensure these relationships can be formed, the design and programming of the building provides the spaces for these relationships to take place.

#### **4.2.2. Community**

This project also allows for the opportunity for community building. Intergenerational shared sites can provide new community spaces such as community centers, childcare facilities, and senior living facilities. These spaces bring together people from all different age groups in the community and can help bridge the generation gap along with divides between race, socio-economic classes, and other traditional divides.

#### **4.2.3. Educate**

An intergenerational daycare center holds great education opportunities. Transferring knowledge of skills, experiences, and wisdom from older generations to younger ones is a valuable benefit. In addition, children are exposed to aging. They can learn about the process of aging and become more comfortable with it, leading to empathy and social acceptance. Older adults can also learn from younger generations in areas such as problem-solving, communication skills, and increased comfort with technology. There is also more awareness that is brought to intergenerational relationships not only in the daycare center itself, but throughout the community.

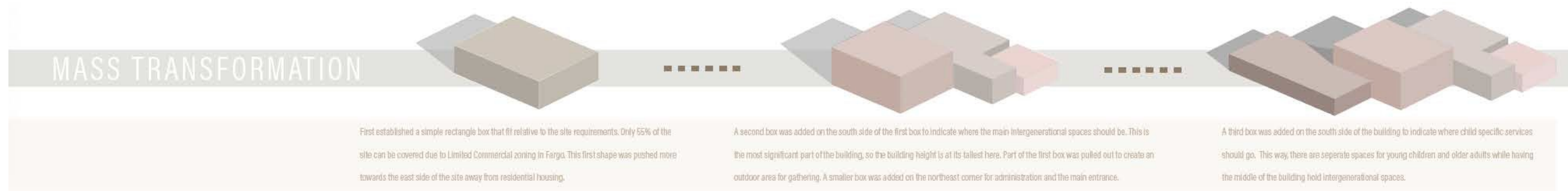
#### **4.2.4. Connection**

Finally, this project can be summed up in its ability to provide connection. All of the project objectives mentioned above play a role in the connection of the bookend generations. This daycare center provides the spaces to encourage interaction that might not occur otherwise. Both parties gain new perspectives and can build a connection together that builds empathy, and knowledge exchange, reduces isolation and loneliness, and provides a sense of purpose and understanding. All of these are a result of the connection that is fostered through intergenerational shared sites.

### 4.3. Project Design and Documentation

**Figure 46.**

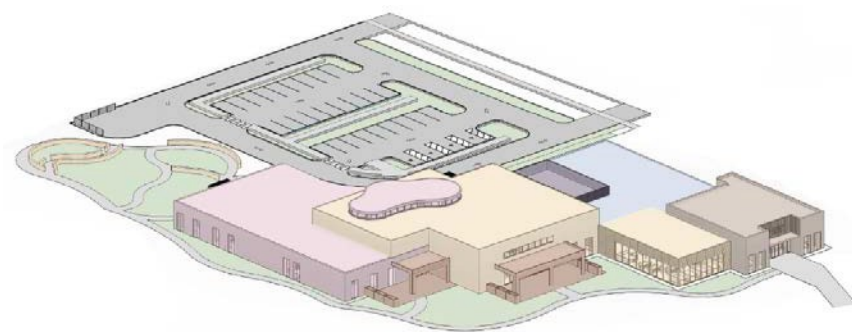
*Mass Transformation*



*Note.* Own Work.

**Figure 47.**

*Programming*

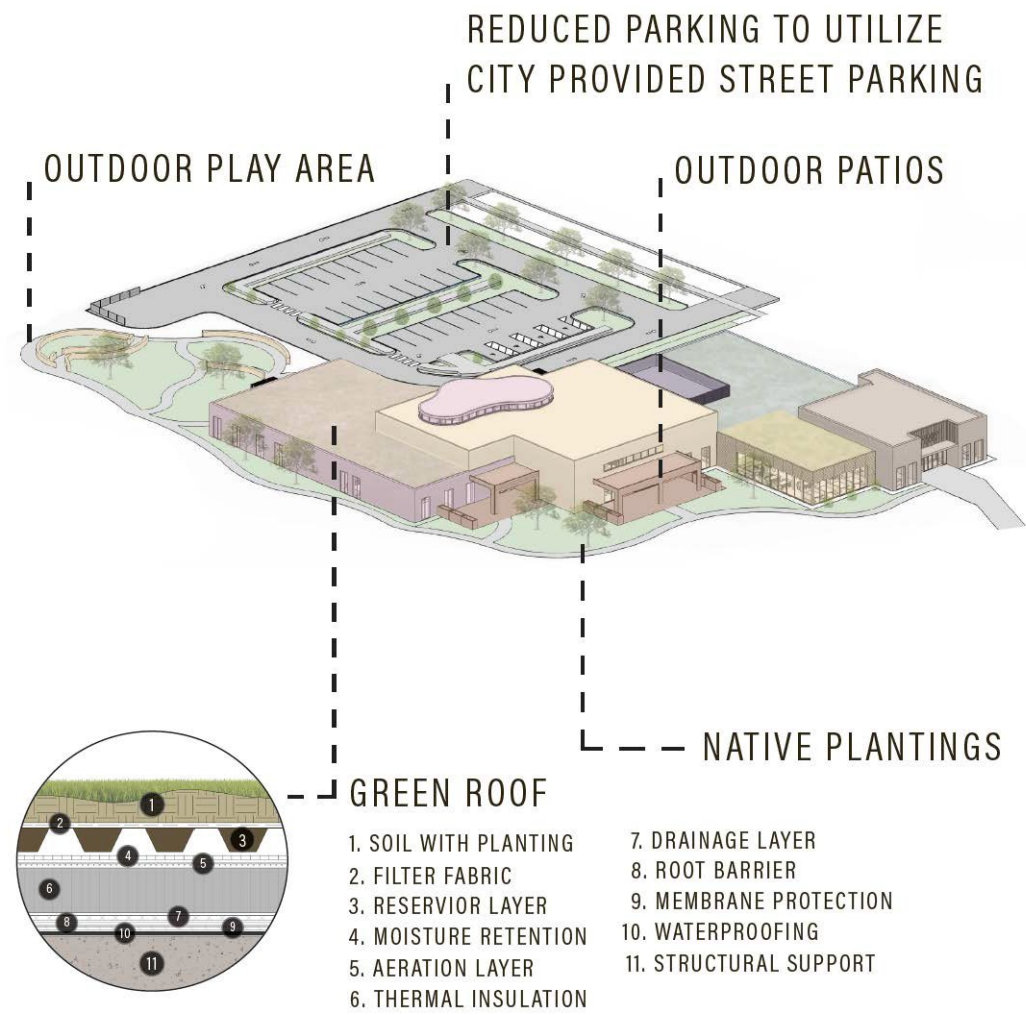


- CHILDREN'S AREA
- ADMINISTRATION
- INTERGENERATIONAL SHARED SPACES
- SHARED PATIOS
- OLDER ADULT'S AREA
- MECHANICAL

*Note.* Own Work.

**Figure 48**

*Environment & Site*



*Note.* Own Work.

**Figure 49.**

*Space Program*

<b>Space Program</b>			
<b>Intergenerational Daycare Center</b>			
<b>Administration</b>	<b>Area</b>	<b>Children</b>	<b>Area</b>
Office	184 sf	Program Room	1452 sf
Office	181 sf	Program Room	600 sf
Office	100 sf	Program Room	637 sf
Conference Room	188 sf	Restrooms	683 sf
Staff Breakroom	185 sf	Indoor Play Area	1537 sf
Staff Restroom	50 sf		
Staff Work Area	66 sf		
Lobby & Waiting Area	770 sf		
<b>Older Adults</b>		<b>Intergenerational Spaces</b>	
Older Adult Exercise Area	1012 sf	Dining Room	1503 sf
Exercise Storage	66 sf	Multipurpose Room	1277 sf
Older Adult Rec Room	1200 sf	Community Kitchen	510 sf
Coffee Bar	395 sf	Library	1100 sf
Restrooms	500 sf	Theater	413 sf
Media Room	830 sf	Lounging Area	400 sf
Exercise Storage	120 sf		
Older Adult Rec Room	25 sf/fixture		
		<b>Additional</b>	
		Mechanical Room	273 sf
		Laundry	170 sf
		Storage	200 sf
		Kitchen	563 sf
		Dry Storage	72 sf
		Nurse	230 sf

*Note.* Own Work.



**Figure 50.**

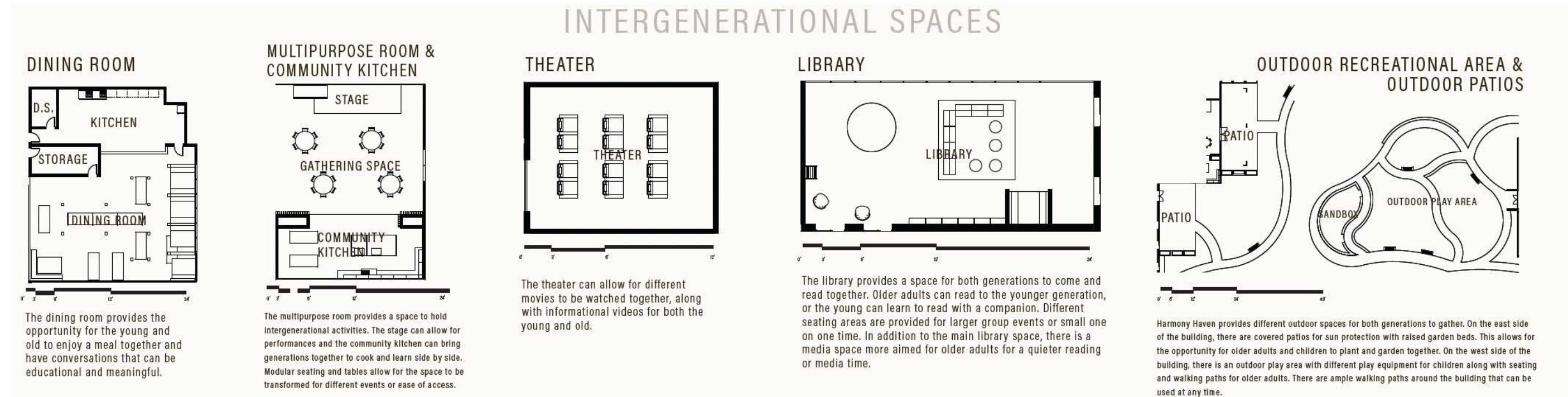
*Master Plan and First Floor Plan*



*Note.* Own Work

**Figure 51.**

*Intergenerational Shared Spaces Floorplans*



*Note.* Own Work.

**Figure 52.**

*North and West Elevations*



*Note.* Own Work.

**Figure 53.**

*South and East Elevations*



*Note.* Own Work.

**Figure 54.**

*Front Entrance Perspective*



*Note.* Own Work.

**Figure 55.**  
*Outdoor Play Area*



*Note. Own Work.*

**Figure 56.**

*Lobby*



*Note.* Own Work.

**Figure 57.**  
*Program Room*



*Note.* Own Work.

**Figure 58.**

*Indoor Play Area*



*Note. Own Work.*



**Figure 59.**  
*Dining Room*



*Note.* Own Work.

**Figure 60.**

*Older Adult Exercise Area*



*Note.* Own Work.

**Figure 61.**

*Library*



*Note.* Own Work.

Figure 62.

*Multipurpose Room*



*Note.* Own Work.

**Figure 63.**

*Older Adult Library*



*Note.* Own Work

#### **4.4. Conclusions**

This project successfully implemented strategies to create an environment conducive to encouraging intergenerational relationships and interaction through the building program, design, and spaces. While providing the appropriate spaces for an intergenerational shared site, this daycare center also holds separate spaces relative to older adults and children to ensure there isn't a constant overlap between the two generations. While this project addresses the benefits of intergenerational shared sites and how they can be successful, these programs still face challenges. These include the lack of evaluation tools to measure the impact of shared sites, successfully implementing a shared site, and knowing how to market and fund these sites. A couple of difficulties shared sites face include managing space and building concerns, and training and retaining staff. Further research will be needed to address these concerns and provide more solid, resourceful, and reliable information regarding intergenerational shared sites.

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