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I. Morgan Heald, hereby submit this original work as part of the requirements for the degree of Master of Architecture in Architecture.

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Active Alley: Senior Living within a Neighborhood

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Active Alley:
Senior Living Within a Neighborhood

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by

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Abstract

Due to medical and caretaking needs, many seniors face displacement from their homes and a sense of isolation from their community. An increasing percentage of senior citizens are choosing at-home assistance instead of nursing home relocation. For these seniors to continue living in their own homes, accessible design retrofits are often necessary. These retrofits adapt homes to meet the specific needs of the residents aging in place. Despite the comfort of living in their own homes, the decision to age in place can still result in seniors becoming isolated from their community through issues of independence and mobility.

This thesis uses the existing neighborhood of Dunn Street in Bloomington, Indiana to implement a community of senior dwelling units along the alleyway. The partial dependence of each senior dwelling unit on an existing single-family home integrates seniors into the neighborhood by increasing density and resulting in a dynamic of multiple generations on the same site. The alleyway with which these senior dwelling units align frames a linear, shared space to foster a network of activity among the senior residents as well as serving as the neighborhood's access to residential parking, trash removal, and pedestrian uses. This proposal takes an otherwise isolated senior citizen and creates a hybrid of independence within a multigenerational, interactive community in an existing neighborhood.

For Ally, Justin, and my family

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Introduction

Specially designed spaces that serve an occupant with specialized needs depending on their mobility can become so particular that they alienate others from using the spaces.¹ For example, child focused spaces would alienate adults due to size differences. Spaces designed for children such as a children's museum exhibit are scaled to fit their smaller size including low-height displays, child-size furniture, and playscapes. In a similar manner, many senior care centers are specifically designed for low mobility users to the point that they are isolated from the rest of society. This separation of people in society due to their limited mobility is further divided due to the spaces designed for them and not for those of different abilities. This creates a detachment of people into different age groups separating children in childcare or school from adults in their workplaces to seniors into senior care centers.²

According to the World Health Organization, the answer to this disconnect is to design universally accessible spaces.³ Instead of simply meeting ADA code, Universal Design refers to conceiving of a space for users of all different abilities including mobility and vision. However, a universal design process risks generic

1 Vanderbeck, Robert M., *Intergenerational Space*, (Routledge, 2015), 4-42.

2 Winkler, Richelle, "Research Note: Segregated by Age: Are We Becoming More Divided?", *Population Research and Policy Review* Vol 32, no. 5 (2013): 717-727.

3 World Health Organization, "Enabling Environments" (*World Report on Disability*, 2011), 177-182.

architectural solutions that still impose specialized needs onto all users of the space. By focusing on the issue of isolation of the elderly from their community, accessible design can provoke unique architectural solutions.

Even with accessible design, there are still the problems of different spatial perceptions and a lack of social engagement between multiple generations. Intergenerational design focuses on creating spaces to bring social interaction between these isolated groups together. Vanderbeck defines intergenerational space as "a site that has been designed for the purpose of facilitating and promoting interaction between members of different generational groups".⁴ When designing for multiple generations, or a wide variety in abilities among users, it is important to recognize that forcing every groups' needs over all groups can alienate users from the space in the same way that a person can be alienated in a specialized space for a different group. Many intergenerational spaces utilize the shared characteristics and differences between the age groups to their advantage. Through the program of spaces these generational characteristics can offer skills to share and teach each other. For example, younger generations can teach computer skills, while older generations can assist as tutors for homework assignments.

4 Vanderbeck, *Intergenerational Space*, 1-4

History of Senior Care

The modern Senior Care Facilities that exist today are a relatively recent concept. In the past, elders were given assistance care by their own families, which resulted in multiple generations in one home. For those without a capable family, elderly in need of shelter had to live in poor houses, also called almshouses. Almshouses were public housing filled with orphaned, sick, mentally ill, and elderly people who were all impoverished. These poor houses gave shelter and food to the elderly alongside their other occupants and were known to be in extremely poor condition. Society's disregard for elderly people in need of care relates to Michael Foucault's book *Madness and Civilization*. Foucault explains that the categories of madness were articulated, isolated, and institutionalized over time and that the impoverished elderly were among these categories. Foucault connects this separate category of the elderly in their own stage of life to society's attitude toward the expectation of labor from every person. After the renaissance, Foucault refers to a "Great Confinement" period in which society's morals honored the value of work to the extreme of removing those who would not or could not work.¹ Those who were removed from society were restricted to a police state of discipline with governmental and religious authority.

¹ Michael Foucault, *Madness And Civilization: A History Of Insanity In The Age Of Reason*, (Vintage Books, 1988, c1965), 38-42.

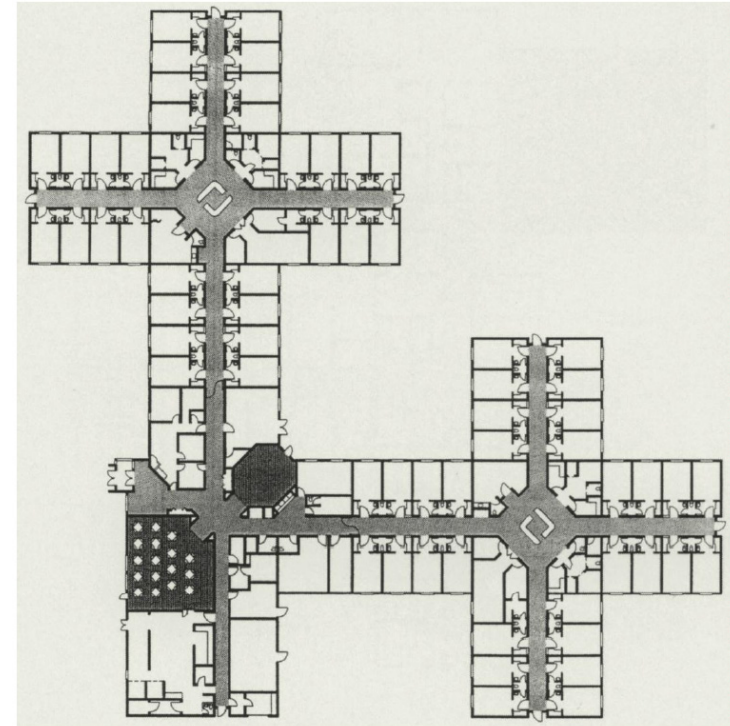


Figure 1

The Hospital General in Paris was the first of these houses of confinement that exercised complete power over those institutionalized, while not actually serving as a medical hospital as the name suggests. These houses of confinement physically represented the shift toward the idea of "madness" in society. "Madness" included anyone who somehow deviated from the norm, including the elderly and people who could not work due to unemployment, poverty, and mental illness. By confining them away from society, the issues that these people faced, including economic turmoil, were also hidden away. Foucault reasons that this shift allowed

a new kind of social space where society's authoritarian control over the irregular therefore defined itself as the regular. Economic development for the working class supported the idea of controlling the irregular, while morality realigned to value those who work as good and those who do not work as bad, and in need of confinement. Foucault claims that society casts out any deviance from work due to this combination of economic values, and a policed discipline to make work possible for those who need it. The isolation of the elderly is an outcome of the social institutionalizing that has developed throughout history.

In the United States, almshouses were in existence until The Social Security Act of 1935 which included restrictions against public institutions including poor houses.² This financial restriction led to the development of private boarding homes that would provide care for the elderly. These nursing homes became quite popular while being funded through the resident's social security. The safety codes required for these nursing home facilities became stricter after The Medicare and Medicaid programs were established in 1965.³ These stricter requirements included training for staff as well as more building code restrictions that included the wider hallways and doorways that we see today in these facilities.⁴ Changes to these policies and practices will be addressed in a later section of the thesis that

2 Benjamin Schwarz and Ruth Brent, "The Architectural Metamorphosis of Long-Term Care Settings", *Journal of Architectural and Planning Research* Vol 18, no. 3 (2001): 256, <http://www.jstor.org/stable/43031042>.

3 Schwarz and Brent, "The Architectural Metamorphosis of Long-Term Care Settings", 256.

4 Schwarz and Brent, "The Architectural Metamorphosis of Long-Term Care Settings", 257-261.

discusses what elderly care looks like today.

As the largest population group, the generation of baby boomers, reach the age where they need assistance, the actual percentage of those entering nursing homes is decreasing.⁵ Instead, there is an increase in those choosing to stay in their home with caretakers and medical assistance coming to them.

In *Madness and Civilization*, Foucault refers to the concept of imposing civil and religious disciplines as a moral city. This moral city represents the shifting attitude and treatment of society's reaction to madness, which, in this case, refers to the people cast out and confined from society.⁶ In many ways, clinical senior homes are treated socially similar in that seniors are confined from society through these governmental systems that have developed over time. However, as the increasingly popular option of Aging in Place suggests, many seniors would opt to stay in their homes. The challenges that come with senior care facilities are not always opposing to Aging in Place. The issue of isolation from society in a senior care facility can be comparable to the isolation of senior individuals in their homes. The difference possibly lies in the community network fostered in the facility or in the senior's neighborhood.

5 Schwarz and Brent, "The Architectural Metamorphosis of Long-Term Care Settings", 256-257.

6 Foucault, *Madness and Civilization*, 54-59.

Needs of Seniors

Seniors' need of assistance can be varied from individual to individual and can change over time. Seniors may deal with physical or mental deterioration, as well as a lack of daily purpose.¹ Cultivating shared interests and hobbies through activities can be a solution for those searching for daily purpose or mental stimulation, as well as daily exercise for physical health. Seniors that continue to live in their own homes may experience the issue of a lack of transportation. Seniors can regress into a period of increased isolation due in part to not being able to travel or drive themselves.² If their location is only accessible by vehicle and they can no longer drive, various locations for daily necessities including the pharmacy, grocery store, post office, gym, and doctor's office become inaccessible. Recent shared ride programs provide a solution for those previously stranded from these amenities. Preparing meals for themselves is another daily necessity that some seniors may face as a problem. As a solution for this wide-spread issue, Meals on Wheels, a non-profit delivery system, provides food to seniors that are living alone in their homes. Through a subscription to this service, prepared meals are delivered to seniors who are unable to prepare their own for a variety of reasons

¹ Andreas Huber, *New Approaches to Housing for the Second Half of Life* (Basel: Birkhäuser, 2008), 61.

² Powell M. Lawton, "Environment and Aging" (*Center for the Study of Aging*, 1986), 39-41.

including physical, financial, and accessibility issues.

There are a variety of forms of elderly care that exist today to meet the range of patient need levels depending on many conditions including health, mobility, independence, finances, personality, family support, and the patient's own wishes. One familiar style of a senior living facility that exists today for those with a high level of needed care includes the basic design principals of a single level, sprawling structure with wide hallways that lead to double rooms. This room may hold one shared bathroom and a window as well as two hospital beds that are separated by a curtain. Nurse stations are typically centralized in the hallways for accessibility to treat patients, and the shared space includes a community cafeteria and flexible activity spaces that are central to the facility. These shared spaces are typically multi-use gathering areas for common offered activities that may include exercise classes, choir practice, skill sharing tutorials, and games. Safety measures are in place in this type of care center to control guest access into and patient access out of the facility. As discussed previously in the history of senior care, a current rendition of any senior facility is a relatively recent development. Through historical shifts in societal morals, economic development, medical advancements, these high-level medical facilities have been prominently shaped by building code and social security laws that directly affect everyone's presence in the senior care facility.

Another current style of senior living is a subdivision development of duplex

condominiums for independent residents with a central, neighborhood clubhouse for social gatherings and activities. This option allows seniors a living situation similar to living in a downsized single-family home with the nearby commodities of a senior living community. Many of these subdivisions or other type of independent living neighborhoods have connections in place for services including home medical assistance and for caretakers to visit the residence.

Another current design for senior care is a communal, or co-op, living home that features a central kitchen, dining, and living space that is shared by several residents whose only private space is their individual rooms. While some of these communal senior living homes are individual houses, there are larger iterations of these communal senior living concepts that are reminiscent of a college dorm floor sharing a kitchen and communal bathroom. These shared spaces among residents offer socialization and a reliance on each other as a special type of roommate. These larger facilities also offer the amenities of a larger community including interaction between the separate dorms of roommates as well as staff of caretakers and medical assistants.

In response to the growing desire to continue living at home for a longer amount of time before the need to enter into a senior care facility, the “Aging in Place” movement has created a market for home remodels to comply with the individual accessibility requirements for seniors. For accessibility issues, shelves and handles are all placed between 2'-4' and 6' heights for user's reaching

capabilities.³ Some other common residential aging in place retrofits for accessibility may include shower remodels, stair lifts, porch ramps, and wheelchair clearances for kitchen and bathroom counters, as well as doorways.

Home visiting healthcare workers and caretakers assist with medical needs and daily tasks. There are also many different stages of mobility, competency, visibility, and levels of need for seniors in need of assistance or daily care. Andrea Huber categorizes those who still walk on their own, but take longer than they used to, as “slow-go” seniors.⁴ While there is different relative physical accessibility for people with different physical levels of mobility, their perception of space is impacted as well.⁵ Seniors find the qualities of “friendliness, quiet, neatness, esthetic quality, and texture were very important” while younger people find the qualities of “space, shape, potency” to be more important. This change in importance is due to senior's physical changes to mean that they feel space instead of seeing space as younger people.⁶

3 Kamal Kothiyal and Samuel Tettey, “Anthropometry for Design for the Elderly,” *International Journal of Occupational Safety and Ergonomics* 7, no. 1 (2001): 15-34, <https://doi.org/10.1080/10803548.2001.11076474>.

4 Andreas Huber, *New Approaches to Housing for the Second Half of Life* (Basel: Birkhäuser, 2008), 18.

5 Edward T. Hall, *The Hidden Dimension* (Garden City, N.Y: Doubleday, 1969), 60-62.

6 Lawton, “Environment and Aging”, 70.

4

Precedents

As an extreme example of an architectural solution for wheelchair use, Rem Koolhaas and OMA designed the Maison Bordeaux as a multilevel house that shifts relative to the client. Vertical circulation would typically disjoint these levels from the client and anyone with little to no mobility. In challenge to this issue, Koolhaas connects each level with a hydraulic platform that visits each level as a mobile office space. This office space's surroundings change depending on the level including a kitchen on the first floor, an open living space on the second floor, and the privacy of a bedroom on the third floor.¹ These different levels allow for the client to choose between a variety of experiences of privacy, light, views, and adjacencies to surrounding spaces. This project is successful because Koolhaas created an inventive architectural solution to the constraint of mobile accessibility.

Polis by Jeanne Gang's Studio Gang architecture firm is a research project intended to create neighborhood community engagement. The premise is a redesign of a police station into a community center that evolved into a holistic neighborhood redesign. This neighborhood design includes community spaces such as recreational parks including basketball and tennis courts as well as a community garden, market, and food truck services. A public service center

¹ Andrew Kroll, "AD Classics: Maison Bordeaux / OMA," *ArchDaily*, 2011, <https://www.archdaily.com/104724/ad-classics-maison-bordeaux-oma>.



Figure 2

includes resources like computers, a library, health professionals, and as well as the police department. Instead of focusing on solely redesigning a police station, the design took on the goal of creating a space for public safety and positive social engagement.² This design premise is successful because it integrates the entire community's needs into the very basis of their design concept of a community's police department that is typically very disjointed from the public. The design layout places these community spaces near and around the community center containing the police station and public services to bring together many different groups of people into a cohesive neighborhood.

The Yinian Rooftop Garden for Seniors by Gossamer Design sits on top of a high-rise building that houses multiple levels of senior living facilities as well as co-living rentals and lower levels of commercial and office space. This high-rise

² Studio Gang, "Polis Station," <https://studiogang.com/project/polis-station>.

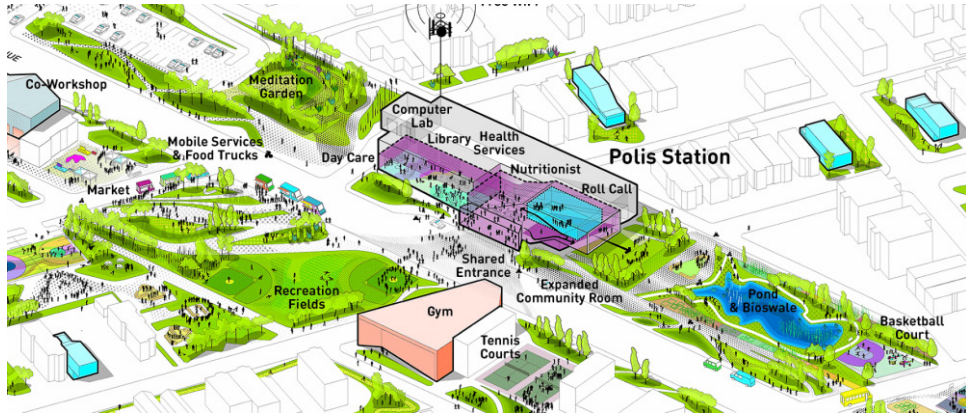


Figure 3

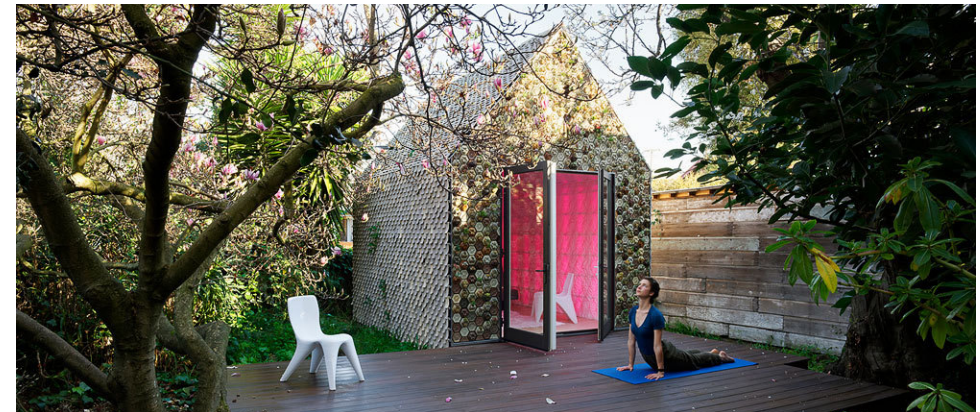


Figure 5



Figure 4

development serves the higher leveled residential spaces with the lower leveled commercial spaces in the busy downtown of Chongqing, China.³ Despite all of these services being offered within the same building of the senior living family, the intense downtown location may restrict residents from visiting the outdoors.

The rooftop garden design offers seniors a safe, accessible outdoor experience

³ Gossamer Design, "Yinian Rooftop Garden for Seniors," *Landezine International Landscape Award*, <https://landezine-award.com/yinian-rooftop-garden-for-seniors/>.

tailored to their needs. The garden features a walking track with benched seating as well as a stage for tai chi and exercise classes. There are many forms of community gardening that is accessible to seniors in wheelchairs and those with limited mobility through tabled garden beds and vertical garden walls. Lounge and table seating allow for leisure while the mixed use space is used for workshops and art classes. By occupying this rooftop, seniors are a part of the city's landscape instead of isolated from it. A community outreach project included a user manual of the rooftop garden inviting the public into the space. With the public and the senior residents both occupying this rooftop garden, the opportunity for a social interaction and community network is formed.

Detached garages can be an abundant occurrence within a neighborhood, and similarly located the mother-in-law units are increasing in popularity as families make decisions for multiple generations. One example of a mother-in-law unit, or

accessory dwelling unit, is The Cabin of Curiosities. It is a research project by Emerging Objects in Berkeley for a backyard cabin that experimented with 3D printed facade materials.⁴ The cabin houses a lounge space in the backyard that is accessed through the backyard deck. This cabin creates an accessory space that is partially independent of the main home of the property. As a intervention of an underutilized alleyway, The Alley Oop installation in Vancouver by HCMA Architecture + Design activated an alley space through the addition of color and activities including basketball hoops, ping pong, and gathering space.⁵ This shared space was designed to be utilized by the surrounding business professionals who use the space for happy hour and after work networking. It has become a popular location for weekend visits in the city with food trucks and gatherings taking advantage of the influx of people. The Goods Line project by ASPECT Studios is a linear public space built over an existing railroad track and features bleacher seating for public showings, activity spaces for ping pong and chess, as well as lounge seating along the linear walking path.⁶

4 John Stoughton, "Backyard Cabin Experiments with 3-D Printed Tiles as a Facade Material," *ArchDaily*, 2018, <https://www.archdaily.com/890905/backyard-cabin-experiments-with-3d-printed-tiles-as-a-facade-material>.

5 HCMA Architecture + Design, "More Awesome Now Laneway Activations," <https://hcma.ca/project/more-awesome-now/>.

6 ASPECT Studios, "The Goods Line," *Landezine*, 2015, <http://landezine.com/index.php/2015/10/the-goods-line-by-aspect-studios/>.



Figure 6

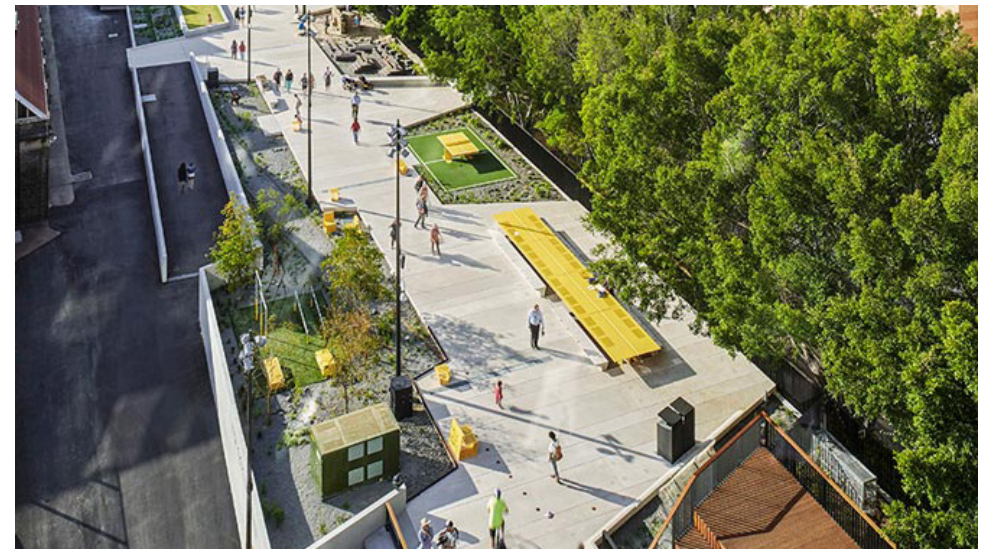


Figure 7

5 Proposal

In a similar approach to Gang Studio's Polis project, a neighborhood design concept could focus on integrating seniors into their community spaces. Seniors that become isolated in their own homes can benefit from nearby access to daily necessities including the pharmacy, grocery, and post office as well as active or social spaces such as the park, gym, and spaces for music or art. The needs of seniors in a community space can include being located close enough to these daily use spaces to be accessible to someone who no longer drives a vehicle or has low mobility to travel large distances on foot. Some seniors can utilize walking paths or swimming pools to maintain their mobility level. The desire would be to integrate seniors into the communal neighborhood for an intergenerational social space instead of the disjointedness between generations that is commonly created with institutionalized senior care centers.

The site of the Dunn Street neighborhood development is in the city of Bloomington, Indiana. Located to the south of Indiana University, the community commodities include those that are bolstered by the university including restaurants, grocery stores, gyms, parks, post offices, pharmacies, libraries, and theaters. The features of the existing neighborhood of Dunn Street include bungalow style houses with detached garages at the back of their properties. The access to these

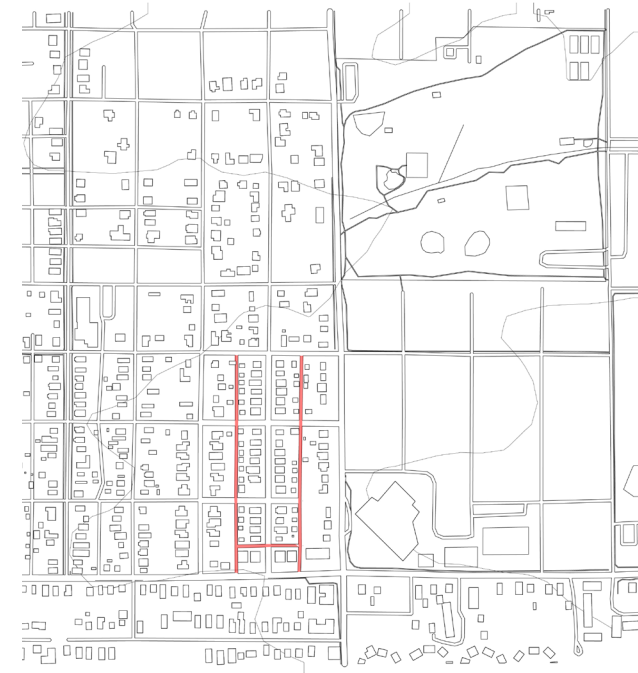


Figure 8

detached garages is connected through an alleyway system that is utilized by slow-moving vehicles including residents parking in the garages, as well as trash pick-up trucks, pedestrians, and bikers. The placement of these existing detached garages are reminiscent of mother-in-law units, or accessory dwelling units, that are built at the back of properties for a variety of uses. These uses include an office, studio, gym, lounge, and storage. Another use for accessory dwelling units is to house aging parents in a partially independent space from their own home. Through creating these spaces for elderly in the neighborhood, seniors can be

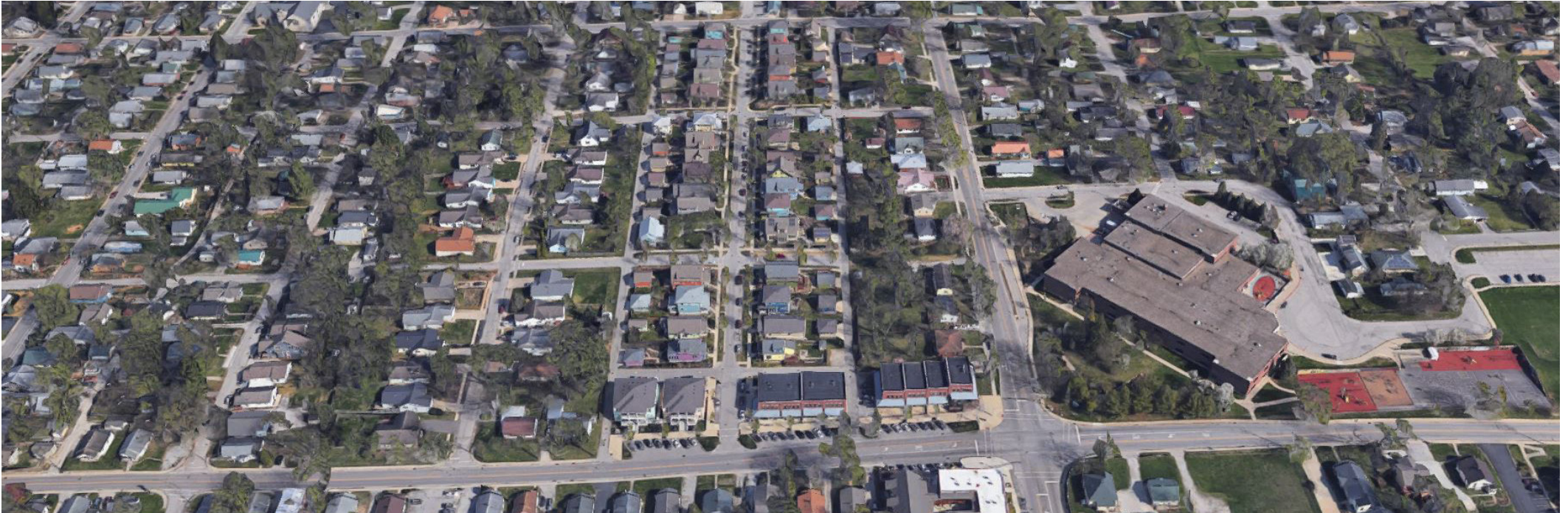


Figure 9

integrated into the existing community. The alleyway aligned with these accessory dwelling units offers the opportunity to foster a new, community network among the senior residents. This alleyway space can become a space of activity for gathering and sharing. A ribbon drive style of road will allow vehicles to pass through while doubling as two directional walking paths. The center of the ribbon drive will serve for linear activities including shuffleboard and bocce ball courts. The fence aligning the alleyway will include occupied alcoves for benched seating, linear bar style table seating, and chess table seating. Select accessory dwelling units will offer

community studio spaces including an art studio, workshop, table games, and a gathering space for viewing media or live entertainment. Other select accessory dwelling units will invite the community to utilize their property's swimming pool, community garden, and park. The seniors that live in these dwelling units experience the support of their family in the nearby main home on the property and the commodities of an existing neighborhood while also activating this alleyway as a new community space.

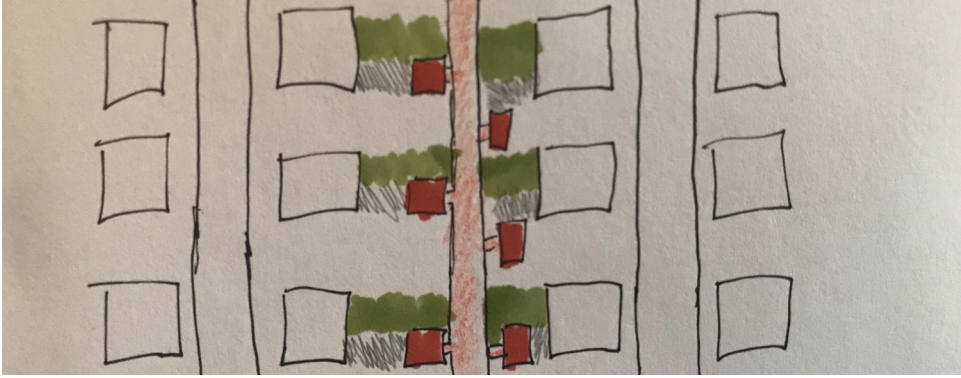


Figure 10



Figure 11



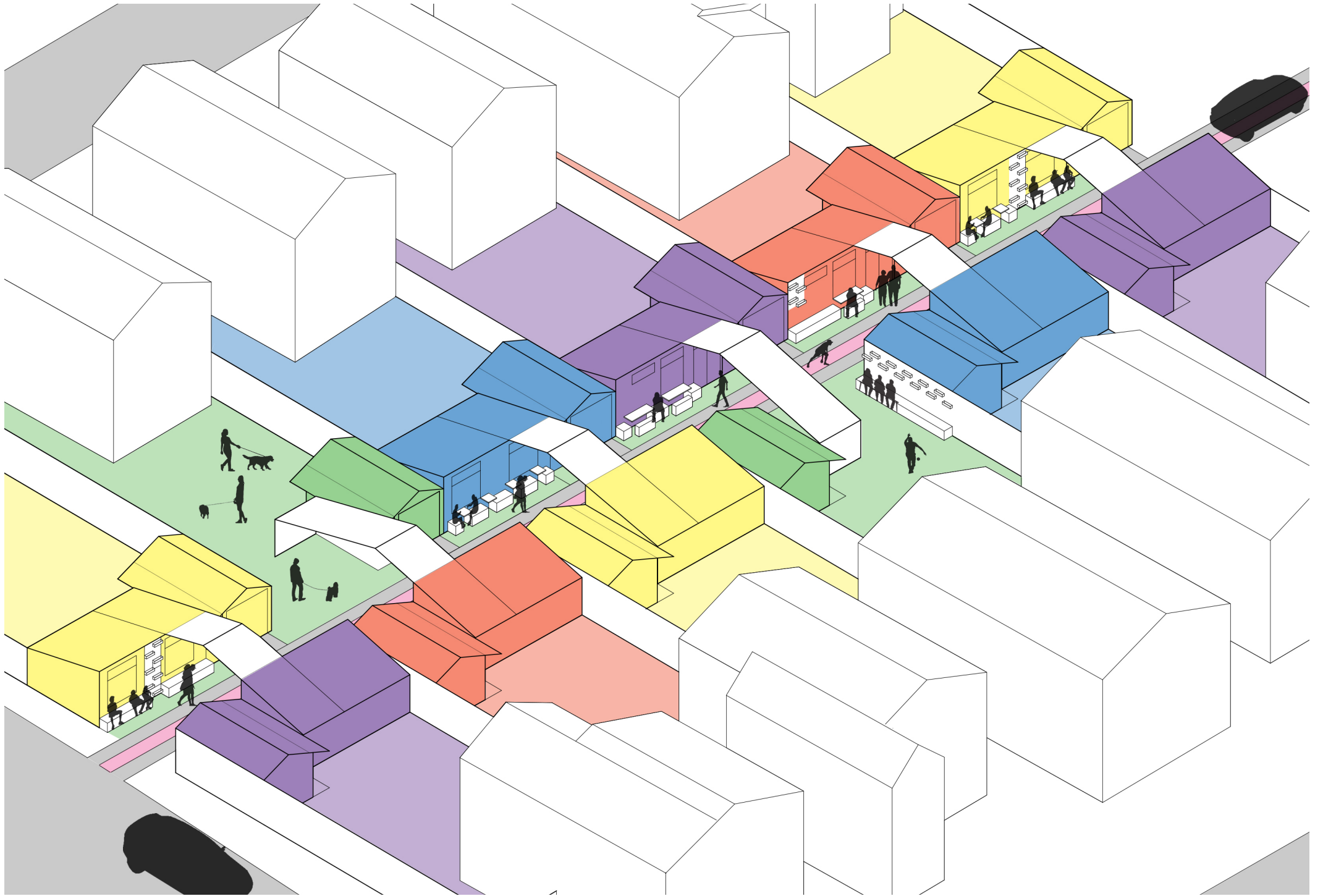
Figure 13



Figure 12



Figure 14



Bibliography

Adams, Annmarie, D. Theodore, E. Goldenberg, C. McLaren, P. McKeever. "Kids in the Atrium: Comparing Architectural Intentions and Children's Experiences in a Pediatric Hospital Lobby." *Social Science and Medicine* Vol 70, no. 5: 658-667. Elsevier, 2010. <https://www.sciencedirect.com/science/article/>.

ASPECT Studios. "The Goods Line." *Landezine*. 2015. landezine.com/index.php/2015/10/the-goods-line-by-aspect-studios/.

Broto, Carles. *Hospitales y Centros De Salud*. Barcelona: LINKS, 2009.

Delany, Lori J., et al. "They can rest at home": an observational study of patients' quality of sleep in an Australian hospital". *BMC Health Service Research*, 2018.

Foucault, Michel. *Madness And Civilization: A History Of Insanity In The Age Of Reason*. New York, NY : Vintage Books 1988, c1965.

Global Age-Friendly Cities: a Guide Geneva: *World Health Organization*, 2007.

Gossamer Design. "Yinian Rooftop Garden for Seniors." *Landezine International Landscape Award*. <https://landezine-award.com/yinian-rooftop-garden-for-seniors/>.

Hall, Edward T. *The Hidden Dimension*. Garden City: N.Y.: Doubleday, 1969.

Huber, Andreas. *New Approaches to Housing for the Second Half of Life* (Basel: Birkhäuser, 2008), 55.

Huisman, E.R.C.M., et al. "Healing environment: A review of the impact of physical environmental factors on users". *Building and Environment*, Vol 58. Elsevier, December 2012.

Lawton, M. Powell. *Environment and Aging*. Albany, NY: Center for the Study of Aging, 1986.

McIlwain, John K. "Housing in America: the Baby Boomers Turn 65" (Washington, DC: *Urban Land Institute*, 2012).

"More Awesome Now Laneway Activations." *HCMA Architecture + Design*. <https://hcma.ca/project/more-awesome-now/>.

Klein, Sarah, et al. "The Hospital at Home Model: Bringing Hospital-Level Care to the Patient". *The Commonwealth Fund*, August 2016.

Kothiyal, Kamal, and Samuel Tettey. "Anthropometry for Design for the Elderly", *International Journal of Occupational Safety and Ergonomics* 7, no. 1 (2001): 15-34. <https://doi.org/10.1080/10803548.2001.11076474>.

Kuehne, Valerie S. and Matthew S. Kaplan, "Evaluation and Research on Intergenerational Shared Site Facilities and Programs: What We Know and What We Need to Learn," *Project: Share*. (Washington D.C.: Generations United, 2001), 12.

- Kroll, Andrew. "AD Classics: Maison Bordeau / OMA." *ArchDaily*.
25 January 2011. <https://www.archdaily.com/104724/ad-classics-maison-bordeaux-oma>.
- "Polis Station." *Studio Gang*. <https://studiogang.com/project/polis-station>.
- Schwarz, Benyamin, and Ruth Brent. "The Architectural Metamorphosis of Long-Term Care Settings." *Journal of Architectural and Planning Research*, Vol 18, no. 3 (2001): 255-70. Accessed <http://www.jstor.org/stable/43031042>.
- Steinig, Sheri. Intergenerational Shared Sites: Making the Case: Occasional Paper #1: To Encourage and Expand Intergenerational Shared Site Development (Washington D.C.: *Generations United*, 2006), 6.
- Stoughton, John. "Backyard Cabin Experiments with 3D-Printed Tiles as Facade Material." *ArchDaily*. 18 March 2018. <https://www.archdaily.com/890905/backyard-cabin-experiments-with-3d-printed-tiles-as-a-facade-material>.
- Vanderbeck, Robert M. *Intergenerational Space* (London: *Routledge*, 2015).
- Winkler, Richelle. "Research Note: Segregated by Age: Are We Becoming More Divided?," *Population Research and Policy Review*, Vol 32, no. 5 (2013): 717-727, <https://doi.org/10.1007/s11113-013-9291-8>.
- World Health Organization. "Enabling Environments", *World Report on Disability*, (2011), 177-182.