

ABSTRACT

Title of Thesis: REBUILDING LIVES: ARCHITECTURE TO SOLVE AFFORDABLE HOUSING AND HOMELESSNESS CRISIS

Mary Boualy, Master of Architecture, 2025

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Homelessness and affordable housing are critical issues that require urgent attention due to their deep connections with economic, social, and policy factors. In Norfolk, Virginia, the lack of affordable housing has contributed to a rise in homelessness, with 20.1% of the population facing severe housing challenges in 2023. Areas like Ghent once considered “slums, have experienced gentrification, leading to increased rents and a shortage of affordable options. The pandemic has worsened this crisis, highlighting the need to explore the relationship between affordable housing and homelessness. By studying Norfolk’s cultural history, we can inform effective solutions, such as revising policies to encourage affordable housing development and exploring homelessness housing options. Addressing these interconnected social and economic problems is vital to developing solutions, including temporary solutions like tent cities and more transitional solutions such as prefabricated modular housing systems to be used to develop supportive housing. These approaches can help create opportunities to encourage a more equitable society where everyone has the chance to thrive, which is a step to a more inclusive and resilient society.

REBUILDING LIVES: ARCHITECTURE TO SOLVE AFFORDABLE HOUSING AND
HOMELESSNESS CRISIS

by

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Chapter 1: Introduction

The lack of affordable housing contributes to the rise in homelessness, impacting families, veterans, and the vulnerable populations. Homelessness and affordable housing are critical issues that are connected and stem from deep-rooted economic, social, and policy issues. Both problems impact the health, welfare, safety, and economic stability of communities worldwide. Access to affordable housing is a key component in increasing economic mobility and reducing poverty.

In Norfolk, Virginia, homelessness has increased over the years, especially after the COVID-19 pandemic (Fig. 1.1) and other contributing factors. Traditional neighborhoods like Ghent, were once considered “slums,” redeveloped, leading to gentrification and increased rents. This transformation led to a lack of affordable housing and contributed to a surge in homelessness. In 2023, 20.1% of the population faced severe housing challenges (Fig. 1.2), despite there being over 7,000 vacant housing units available in Norfolk. This raises the urgent question of why these available housing units are not being utilized for the homeless population. The fact that these units are being occupied yet the homeless population are also increasing raises critical questions over the housing policies practiced today. Affordable housing and homelessness are challenges that require a versatile and complex approach since affordable housing plays a critical role in addressing these issues. The central question that this thesis project is answering is: How can affordable housing decrease homelessness in Norfolk by guiding policymakers in developing long-term strategies, allowing architects to design innovative solutions, and improving coordination among nonprofits and community organizations?



Fig. 1.1 – Tents of homeless people in Norfolk, Virginia during the pandemic
 News 3 WTKR Norfolk, May 22, 2021.

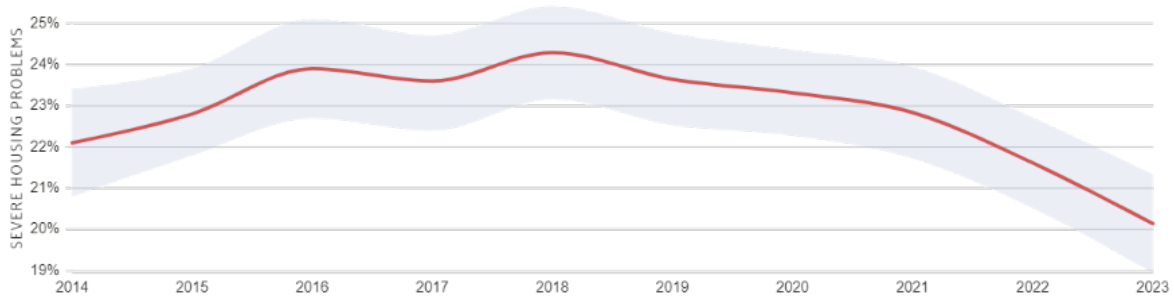


Fig. 1.2 – Severe Housing Data in Norfolk, Virginia
Severe Housing Problems. DataUSA, 2023.

To find a solution to homelessness in Norfolk, one must understand how these issues are intertwined. An important step is looking at Norfolk’s history and its cultural context. By studying Norfolk’s cultural history and background, this can inform effective solutions of the historical context and community strengths. This will help us to better understand what works and what does not, having the history inform policies that prioritize job creations or training for those at risk of homelessness, or revising policies to encourage affordable housing development

and more. After examining the history and policies of Norfolk, the next step will be to begin exploring practical solutions to address these interconnected issues.

Creating an equitable society requires collaboration among public policy makers, architects, and community organizations and by implementing temporary to permanent/transitional solutions. One possible temporary solution for addressing homelessness and affordable housing could be the development of tent cities. Tent cities would be utilized as a makeshift response to the rising crisis of homelessness. These tent cities can offer better sites that enhance health and provide sanitation services. Before transitioning to more permanent/transitional solutions, it is crucial to provide support services, such as job training sessions, for those experiencing homelessness which can help individuals reenter into society and regain stability and independence.

Long-term solutions for these issues could include options like tiny homes and prefabricated modular housing systems. Tiny homes and prefabricated modular housing systems (Fig. 1.3) can be utilized to produce fast housing solutions that can be assembled and disassembled, providing individuals with a sense of home and belonging. These viable solutions can provide a sense of permanence, home and belonging which is crucial to people who are working to rebuild their lives. When linked together with the supportive services they need, there is an opportunity to pave a way out of homelessness for many individuals and help them regain stability and more. Addressing the need for homelessness and affordable housing is not just about providing shelter, but it is about creating opportunities for everyone to thrive. By focusing on immediate relief and long-term solutions, there can be a way to build a more inclusive and just society where people from all levels of society and income levels can have the ability to find a home and build a future.



Fig. 1.3 – Tiny homes that are prefabricated modular housing systems in California
Greaves, Fred. 2023. CBS8.

Chapter 2: Literature Review

Introduction

Homelessness remains one of the most critical social, economic, and policy challenges facing urban cities worldwide. In light of growing homelessness rates, the interrelationship between social policy, economic factors, and the built environment is highlighted within cities. It is not only a consequence of individual circumstances but also linked with systemic issues related to affordable housing, economic disparity, and lack of social support systems.

Architecture has now become one of the most essential elements in solving homelessness in this intricate environment, as it applies to solutions regarding affordable housing.¹ This literature review tries to explore the link between the homelessness crisis and architectural practices through the use of affordable housing as an important tool in combating homelessness.

Affordable housing is integral to the mechanism of reducing homelessness, as it provides a person or family with stable living conditions—a strong backbone required for overall well-being and social integration.² Growth in the cost of housing in urban areas has continued to far outpace growth in incomes, leading to many more people unable to find safe and stable housing. This review intends to discuss the necessity of designing economically viable, socially sustainable, and environmentally sustainable affordable housing solutions. In this light, this literature review points to affordable housing as the leading principle that shows how directly architectural practices may have an impact on the course of events defined by homelessness.

¹ Joaquin Jay Gonzalez and Mickey P. McGee, *Cities and Homelessness: Essays and Case Studies on Practices, Innovations and Challenges* (Jefferson, North Carolina: McFarland & Company, Inc., 2021).

² Edward J. Martin, “Affordable Housing, Homelessness, and Mental Health: What Health Care Policy Needs to Address,” *Journal of Health and Human Services Administration* 38, no. 1 (March 1, 2015): 67–89, <https://doi.org/10.1177/107937391503800103>.

It is also seen in this review that the most successful architectural interventions are those that are community-oriented and inclusive. Affordable housing designs must consider, in their design process, the challenges that the low-income population faces in terms of accessibility, safety, and social bonding.³ Designs based on principles of community-oriented approaches may provide effective solutions that can ensure the voices of homeless people are heard through all stages of planning and implementation. This participatory approach creates a sense of ownership among the residents and promotes supporting communities that would prevent homelessness eventually.

This review will further look at various successful case studies of affordable housing projects that have reduced homelessness. Examples will include innovative architectural solutions, such as tiny housing, prefabricated/modular housing, co-housing models, and adaptive reuse of existing buildings. Each of these approaches carries important implications for how design can meet immediate and long-term needs of homeless people and families. By examining these case studies, the review can illustrate that affordable housing is more than a shelter; rather, it serves to create stability, dignity, and community resilience.

Affordable housing is linked to issues of urban design; thus, specific, and innovative urban design plays a significant role in the creation of livable and equitable urban settings. This review will also take into consideration sensitive urban planning that brings communities together with access to fundamental amenities, job opportunities, and social networks. This literature review identifies the importance of affordable housing within the greater context of urban development for the prevention of homelessness.

³ Jurgen Friedrichs, Elizabeth Huttman, and Willem van Vliet, *Affordable Housing and the Homeless* (Berlin/Boston: De Gruyter, Inc, 2016).

This review will, therefore, serve to highlight the significant role that can be played by the supply of affordable housing in trying to address the crisis of homelessness. This work investigates the relationship between architecture and homelessness, incorporating inclusive design, community participation, and innovative solutions. It will be helpful to architects and policymakers in the future by incorporating best practices that ensure urban centers are made sustainable, equitable, and resilient. It is through the objectives of these issues that a better understanding of how affordable housing can alleviate homelessness will emerge and guide the efforts toward lasting change in our cities.

Long-term vs. Short-term Solutions in Urban Design

Introduction

Urban design is especially important in trying to find a solution to the problem of homelessness, such solutions can be divided into long-term and short-term ones. It is linked to a number of big structural issues, which involve economic inequality, inadequate mental health support, and lack of affordable housing.⁴ Policymakers, architects, and the community gain insight into the small but vital differences among options for creating effective, sustainable environments that help nurture these vulnerable populations. This essay will take a closer look at the concepts of tiny houses, modular housing, co-housing, and adaptive reuse before explaining how each approach fits into both the long- and short-term solutions of urban design.

⁴ Marta Elliott and Lauren J. Krivo, “Structural Determinants of Homelessness in the United States,” *Social Problems* 38, no. 1 (1991): 113–31, <https://doi.org/10.2307/800641>.

Short-term Solutions in Urban Design

Solutions to the design of homelessness in urban cities are usually quick to deploy, immediate, and rapid. Such strategies relieve the people experiencing homelessness while alleviating the underlying issues that make people lose their shelter. It also offers immediate shelter, creates a sense of community, and helps transition into permanent housing.

Tiny houses are the latest popular rapid response to homelessness. These homes, typically under four hundred square feet, can be constructed quickly and at relatively low costs. The concept of tiny house villages has proven to be highly popular within most cities as temporary housing along the path to permanent housing.⁵ Programs such as these are often designed to keep a supportive atmosphere through which residents can begin to bring stability into their lives. While they do offer some sense of community and shelter immediately, small houses are rarely set up to provide access to healthcare, education, and jobs—all major elements to assist people in getting off the streets and out of homelessness.

Modular housing is a pre-assembled unit built off-site that is later transported onto a site (Fig. 2.1). This approach enables rapid construction to house those suffering from homelessness through effective action. Where the supply of permanent housing is inadequate, modular housing can provide temporary solutions in the gap, pending the provision of permanent ones. Like tiny houses, however, if their design is oriented toward anything other than permanence and community, modular units can also fall victim to the assumption that they are insufficient for long-term occupation. Modular housing must be more than just the building—it needs to be community resources such as transportation, healthcare, and job-related training.

⁵ Hayden Baird Earl, “The ‘Availability of Affordable Housing’ Crisis: Tiny Homes and Urban Infill,” *Real Property, Trust & Estate Law Journal* 58, no. 2 (Summer 2023): 105–36.

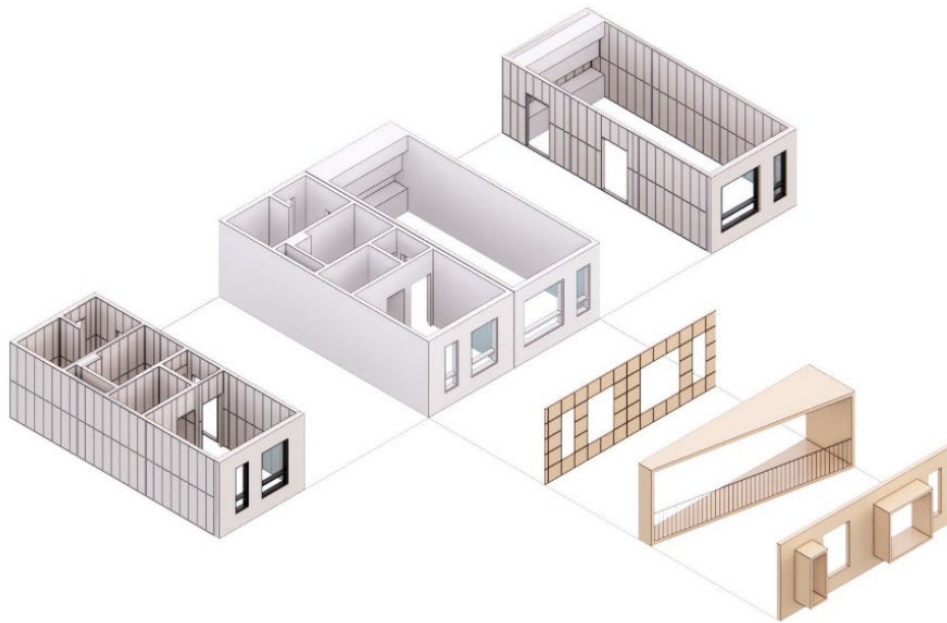


Fig. 2.1 – Modular Construction Axonometric
Hart, Steinberg. *Modular Construction*. 2024.

The co-housing model relies on a community of people and families who share amenities and responsibilities while maintaining their living areas (Fig. 2.2). It is based on cooperation and community, thereby enhancing communication between the residents. Even as a long-term solution, co-housing can offer a short-term strategy for people needing immediate shelter. Cohousing can rapidly develop supportive environments that promote social connection and reduce isolation through the pooling of resources and promoting collaboration.⁶ This does, however, require careful planning and investment in addition to the willingness of participants to engage in communal living.

⁶ Justin Cummins, “Housing Matters: Why Our Communities Must Have Affordable Housing,” *William Mitchell Law Review* 28, no. 1 (January 1, 2001), <https://open.mitchellhamline.edu/wmlr/vol28/iss1/13>.



Fig. 2.2 – Co-housing Concept Sketch
ARCHITYPE. *Springhill Co-housing*. 2004.

Adaptive reuse of existing buildings—underutilized spaces turned into affordable housing, such as warehouses, schools, or offices—is a practical short-term solution to the homelessness crisis. This would minimize the need for new construction and often can be accomplished more quickly than building new housing from the ground up. Adaptive reuse projects can help revitalize neighborhoods while providing much-needed housing.⁷ However, most of them require huge funding, regulatory adjustment, and community buy-in to make them viable and integrate long-term into the urban fabric.

⁷ Tatiana Walk-Morris, “How Adaptive Reuse Can Help Solve the Housing Crisis,” American Planning Association, May 1, 2021, <https://www.planning.org/planning/2021/spring/how-adaptive-reuse-can-help-solve-the-housing-crisis/>.

Long-term Solutions in Urban Design

Whereas temporary solutions can mitigate the pressures of the day, long-term strategies encompass systemic issues of homelessness and guarantee living conditions truly sustainable. By long-term solutions, they mean resilient and inclusive communities that afford priority to affordable housing and supporting infrastructure. While they are often framed as a temporary solution, tiny houses can be part of a long-term solution when they are set within larger urban plans. Communities can enact the construction of tiny house developments within their affordable housing plans to ensure that they're one tool among many within the diverse housing stock.⁸ By building neighborhoods made of diverse house types, cities can develop robust communities that support current residents and prevent homelessness into the future (Fig. 2.3). The long-term viability of tiny houses depends on strategic placement within the community, access to key services, and integration with support networks.



Fig. 2.3 – Tiny House Community in Washington, D.C.
Austin, Jay. *Boneyard Studios*. 2018.

⁸ Krista Evans, *Integrating Tiny Houses into the American Urban Fabric: A Comparative Case Study of Land Use Policy Change in the Carolinas*, 2017.

By making permanent housing options through these modular housing solutions, which have staying power, it is a good long-term plan. Cities can design modular units for durability, community, and sustainable neighborhoods with a mix of income levels. Large-scale investments in infrastructure, including transportation systems, educational facilities, and healthcare services, are required for modular housing to be a successful long-term solution. These investments can facilitate the process of integrating the residents into the greater community for employment or access to necessary service provisions.

Co-housing communities can be developed with long-term viability and sustainability in mind. By placing an emphasis on shared resources and communal space, co-housing has the potential to foster an environment that may encourage social interaction, mutual support, and community involvement.⁹ Long-term co-housing has the potential to reduce the overall cost of living for those residents and create a sense of belonging important in helping people transition out of homelessness. Most of these communities place a strong emphasis on living sustainably, further enhancing their viability over the long term.

Adaptive reuse projects can be an anchor in long-term urban design strategies. Reconstruction of already existing structures into truly affordable housing offers the preservation of historical landmarks and a way to help address pressing needs (Fig. 2.4). Long-term success is not just about getting this started but also about committing to the maintenance of these spaces over time as affordable and accessible.¹⁰ Adaptive reuse helps reduce waste and conserve resources which contributes to the goals of more sustainable urban development.

⁹ Kutay Guler, *Transforming Issues in Housing Design* (Hoboken, NJ: Wiley, 2024).

¹⁰ Tatiana Walk-Morris, "How Adaptive Reuse Can Help Solve the Housing Crisis," American Planning Association, May 1, 2021, <https://www.planning.org/planning/2021/spring/how-adaptive-reuse-can-help-solve-the-housing-crisis/>.



Fig. 2.4 – Historic Mill Building to Multi-family housing Proposal
Patriquin Architects. *Historic Mill Building Adaptive Reuse*. September 10, 2016.

A Holistic Approach – Balancing the two solutions

Both temporary and permanent solutions have their exceptional strengths and challenges in solving homelessness. Short-term solutions involve immediate alleviation: tiny houses, modular housing, co-housing, adaptive reuse. It could be the stepping-stones necessary to help homeless people bounce back into mainstream life. They will help a person get his or her life together and perhaps create a sense of community necessary for mental health.¹¹ However, most of these are incomplete solutions from an infrastructure point of view for long-term living and should be complemented with support services like job training, mental health, and social services in order for such persons to move into permanent housing successfully.

¹¹ Martin, “Affordable Housing, Homelessness, and Mental Health.”

Long-term solutions, on the other hand, are towards system change-inclusive communities that address root causes of homelessness. Most of these strategies require a lot of investment, great collaboration, and commitment on the part of various stakeholders: government agencies, non-profit organizations, and community members. Long-term solutions also call for comprehensive planning in terms of zoning laws, mechanisms for funding, and means of community engagement. The nature of these initiatives often plays into their success, with the development of political will to rally community support for more permanent changes in urban design.¹²

Any urban design strategy that aims to address homelessness must strike a balance between rapid relief and long-term sustainability. Each approach complements the other, and therefore cities can develop flexible frameworks that address current needs yet simultaneously work toward the development of a resilient and stable future. This holistic approach attends the immediate crisis and lays the ground for systemic change.

Several cities created a mix of short-term and long-term strategies for homelessness. For example, Springfield, Missouri identified tiny house villages, where immediate shelter can be provided in the context of longer-term affordable housing initiatives (Fig. 2.5).¹³ Such villages can be equipped with other basic services and a sense of community while their residents build the skills needed to move into more permanent housing. The model aims at community support systems, allowing residents to avail themselves of job training and other social services.

¹² Eoin O’Sullivan, “Rethinking Homelessness,” in *Reimagining Homelessness*, 1st ed., A Blueprint for Policy and Practice (Bristol University Press, 2020), 99–114, <https://doi.org/10.2307/j.ctv10rrcfk.8>.

¹³ Krista Evans, “It Takes a Tiny House Village: A Comparative Case Study of Barriers and Strategies for the Integration of Tiny House Villages for Homeless Persons in Missouri,” *Journal of Planning Education and Research* 44, no. 2 (2024): 938–46, <https://doi.org/10.1177/0739456X211041392>.



Fig. 2.5 – Tiny house village in Springfield, Missouri
Papes, Nathan. *Springfield News-Leader*. November 30, 2021.

The "HomeFirst" modular housing project in San Jose, California is a case of addressing homelessness with ease using modular units which provides not only immediate shelter but also integrated job placement and healthcare for residents, demonstrating that modular housing can be a long-term solution.¹⁴ The project really shows how urban design can be fitted to immediate and ongoing needs.

Similarly, adaptive reuse projects-that turn old hotels into affordable housing-have begun to take off in Anaheim and across the country.¹⁵ Beyond offering units, these projects bring a community of neighbors together and help people connect to each other. Thus, the renovation of the existing ones on one hand allows cities to make use of their architectural heritage and on the other hand alleviates serious needs for housing.

¹⁴ "Homeless Shelters & Services in Santa Clara County," HomeFirst, accessed October 16, 2024, <https://www.homefirstsc.org/santa-clara-county>.

¹⁵ Michele Lerner, "Motel Conversion: A Motel Becomes a Model for Affordable Housing." *Professional Builder* (10, 2023).

Conclusion

In all, the homelessness crisis calls for multilayered intervention in both short-term and long-term urban design solutions. Each of these options offers valuable strategies that can be pursued in helping alleviate homelessness: tiny houses, modular housing, co-housing, and adaptive reuse. Understanding the strengths and limitations of these solutions will provide a comprehensive strategy for the communities that not only offers immediate relief but also provides long-term sustainability and resilience. The goal should eventually be to create inclusive urban environments that provide support for their residents and help the homeless feel a sense of belonging and stability. This requires collaboration, innovation, and a commitment to social equity so all individuals might prosper in a supportive community.

Design for Inclusivity and Accessibility

Introduction

Homelessness is deeply ingrained in various cities across the globe, and to this end, innovative architectural solutions are to be implemented with considerations for inclusion and accessibility. As city populations continue to expand and the cavity between different classes widens, conventional housing structures have failed to meet demand, and many times leave those of the most vulnerable class with less than adequate shelter.¹⁶ It is in this way that architects and urban planners are able to create environments that are not only livable but also empowering for the homeless population. This can be done by focusing design strategies on tiny houses, modular housing, co-housing, adaptive reuse, and similar methods. This section of the chapter now

¹⁶ Vanessa Brown Calder and Jordan Gygi, “Housing Markets First: Housing Supply and Affordability Are Key to Reducing Homelessness” (Cato Institute, 2023), <https://www.jstor.org/stable/resrep51899>.

proceeds to discuss how such specific architectural approaches may promote inclusivity and, in turn, accessibility in helping alleviate homelessness. Inclusivity in architecture involves the creation of space that is inviting and accepting to all users, regardless of their economic status, abilities, or personal situations. Accessibility, on the other hand, would ensure that people with a disability could enter and use the space without risk and with ease. This application has relevance in dealing with homelessness. Architectural practices should be genuinely informed by principles of inclusivity and accessibility in creating spaces that would finally enable people from marginalized backgrounds to feel welcome and part of a community.

Tiny Houses

Tiny houses are a popular consideration for workable solutions to homelessness. These small, mobile houses can be constructed within an extremely brief period and at low cost, hence serving for immediate shelter.¹⁷ To their construction can be added the possibility of inclusiveness and accessibility. Wheelchair ramps, larger-sized doors, and adaptable living areas that can be modified according to individual needs in which the tiny house can accommodate all these.

By applying principles of universal design, tiny houses could accommodate a wide range of users with physical disabilities or families with children (Fig. 2.6). Grouping tiny houses into villages can also create nurturing micro-communities that allow residents to socialize and share mutual support.¹⁸ Shared resources such as communal kitchens and gardens, or common areas

¹⁷ Timothy Carlin, "Tiny Homes: Improving Carbon Footprint and the American Lifestyle on a Large Scale," *Celebrating Scholarship & Creativity Day (2011-2017)*, April 24, 2014, https://digitalcommons.csbsju.edu/elce_cscday/35.

¹⁸ Evans, "It Takes a Tiny House Village."

for leisure, may help in the growth of friendship among a cluster of neighbors and contribute toward mental health without feelings of loneliness.

Further, the compact nature of tiny houses makes residents want to connect with neighbors and helps develop supportive networks for those transitioning out of homelessness. By putting community at the core of its design, tiny house villages can offer shelter and, importantly, a much-needed supportive lifeline to people reclaiming their lives.



Fig. 2.6 – Accessible Tiny Homes

Jaeger, Katharina. *Accessible Tiny Living*. *HEWI Magazine*. Accessed 2024.

Modular Housing

Another innovative approach to dealing with homelessness is modular housing. The units in this process are fabricated off site and assembled onsite. This modular housing model gives so much room to make fast adjustments and is particularly useful for immediate housing needs. Importantly, the design of modular units can be made with an inclusive mind.

These can be made to accommodate single-room units or larger family-oriented homes, depending on the size and structure of a family. It is adaptive to fit the needs of different populations. Modular housing can include accessible design features such as roll-in showers, grab bars, and adjustable countertops. Such elements make homes more livable for individuals with disabilities, mostly improving the quality of life for all residents.

Modular housing can also help designers better integrate people into the community by allowing them to stay in existing neighborhoods, which will not stigmatize cities with homeless shelters or transitional housing. This fosters social interaction and lessens the feeling of loneliness that might have been felt if one has recently or ever been homeless. If modular housing can be designed as part of a mixed community, then architects and planners can help these people reintegrate into society.

Co-housing

Co-housing models place great emphasis on collaboration and resource sharing among residents; therefore, it is inclusive. Co-housing communities are designed with private homes around shared kitchens, gardens, and other places of recreation. Co-housing should be one of the policy tools that help in addressing homelessness. It provides more than shelter as it builds a supportive community that would boost the quality of life of residents.

Co-housing model allows the overall cost of living to be significantly less than that of traditional housing due to shared responsibilities and resources. In the case of people becoming homeless, this affords them shared amenities and support networks that may otherwise be unavailable. Co-housing spaces can be purposefully designed with inclusivity in mind through wheelchair ramps, access to sensory-friendly environments, and shared spaces that foster interaction and collaboration.

This emphasis on community within co-housing builds social connections that are an essential component of good mental health and well-being.¹⁹ For those who have struggled with homelessness, these can be vital sources of emotional support, mentoring, and practical help. Co-housing provides housing but allows these residents to rebuild their lives with love among people who come to feel a sense of belonging and safety.

Adaptive Reuse

Adaptive reuse is an architectural strategy that converts existing buildings, such as warehouses, schools, and churches, into workable spaces for affordable housing. This is a technique of preserving historical architecture while meeting immediate housing needs in a very ecologically positive way. Adaptive reuse can effectively promote inclusivity and accessibility, adding to the broader alleviation of homelessness.

Adaptive reuse can preserve neighborhood character while bringing much-needed housing into existing structures. This often occurs collaboratively with the community members to ensure the innovative design will serve the needs of the existing residents. Inclusivity can occur through active and intentional consideration of multiple inputs from a variety of community stakeholders in the process of planning the project and ensuring that values and needs of the community are captured in the final design.

Adaptive reuse projects also create features that make these buildings accessible to all through the addition of elevators, ramps, and restrooms that are easily accessible. In designing adaptive reuse projects with accessibility in mind, an architect evidenced respect for the concept of inclusivity- acceptance of all individuals into an environment. Such conversion of

¹⁹ Martin, "Affordable Housing, Homelessness, and Mental Health."

underutilized spaces into reasonably priced housing presents an opportunity for neighborhood renewal, reducing stigma while developing pride among residents.

Challenges & Future Approach

While inclusiveness and accessibility in architecture are fundamentally vital to addressing the problem of homelessness, many challenges still need to be overcome. Among the major challenges is raising funds for such initiatives on inclusive design. In many instances, financial concerns in affordable housing projects prevent them from offering all design features highly needed in such living.²⁰ Policymakers should begin allocating additional funds toward making homes inclusive and accessible so that everyone has access to a safe and supportive environment.

Apart from that, community resistance may also oppose the making of an inclusive housing project. It can happen in neighborhoods where existing residents are afraid that it may affect the value of their property or the dynamics in the community. Thus, communities can diffuse resistance and build support for inclusive design initiatives by engaging community members in the planning process and listening to concerns transparently.²¹

Other challenges to making homes inclusive include those posed by regulations. Not all zoning or building codes may accommodate creative ways of making a building more accessible.²² Besides that, inclusiveness promoters must collaborate with local authorities in revising the regulations to afford the inclusion of accessible design elements in new and existing housing projects.

²⁰ Donald W. Burnes and David L. DiLeo, *Ending Homelessness: Why We Haven't, How We Can*, Points of View (Boulder, Colorado; Lynne Rienner Publishers, 2016).

²¹ Cummins, "Housing Matters."

²² Krista Evans, "Integrating Tiny Houses into the American Urban Fabric: A Comparative Case Study of Land Use Policy Change in the Carolinas" (Ann Arbor, ProQuest Dissertations & Theses, 2017), <https://www.proquest.com/docview/1918607582/abstract/>.

Architectural inclusion will continue to become a necessity with growing populations and widening gaps in wealth. The problems of the housing crisis can only be dealt with when architects and town planners are still dedicated to inclusivity and accessibility, woven into projects. Such strategies for community environments that empower homeless people to take control of their lives and encourage them to integrate into society could include tiny houses, modular housing, co-housing, and adaptive reuse.

Inclusivity in architectural practices is primary to the collaborative approach through which community members, policymakers, and design professionals would be involved. This diverse engagement of stakeholders during the planning process will ensure that the needs and values of all residents are taken into consideration leading to equitable and sustainable outcomes. Equally important is education and constant advocacy to make aware about the importance of inclusivity and accessibility of architecture, putting these principles at the front line of urban design initiatives.

Conclusion

In summary, the incorporation of inclusivity and accessibility in architectural design plays a significant role in offering solutions to the crisis of homelessness. Each of the tiny houses, modular housing, co-housing, and adaptive reuse presents varied opportunities in the creation of supportive environments that answer a variety of needs. By placing emphasis on principles of inclusive design, architects and urban planners can enable communities, enhance social interaction, and empower homeless individuals in their lives.

Inclusiveness and accessibility should be designed into housing, if not for moral reasons, then at least for practical ones. Making these principles part of future development will be key to creating more fair and resilient urban areas. In the end, shelter space should provide something

more than a place to live in; it should cultivate in the residents a sense of community and belonging, allowing the thriving of everyone.

Community Engagement in Housing Solutions

Introduction

Community engagement is one of the key aspects for urban cities to thrive upon as it creates a place for the people and a sense of belonging. Community engagement forms a necessary component in the process of addressing challenges in housing and homelessness. As population growth, income disparity, and the lack of affordable housing continue to rise, cities find themselves increasingly in an incredibly worsening position that demands current, inclusive, and effective strategies like never before.²³ Points of community engagement, architecture, and housing solutions meet in such a way that real effect beyond temporary needs to long-lasting improvement of life quality, especially for people without homes, can be realized.

Importance of Community Engagement

Community engagement involves those collaborative processes where the residents participate in decision-making related to their environments and their well-being (Fig. 2.7). This approach focuses on dialogue, participation, and partnership among various stakeholders such as local government, nonprofits, architects, and most importantly, the residents themselves. Community involvement is a defining feature of housing solutions, really helping to define needs and aspirations for that community.²⁴ The residents are asked to share their concerns and experiences and involvement in the design and implementation of the house projects.

²³ Gonzalez and McGee, *Cities and Homelessness*.

²⁴ Kutay Guler, *Transforming Issues in Housing Design*, First edition. (Hoboken, New Jersey: John Wiley & Sons, Inc., 2024).

Effective community engagement is transparent and inclusive. Diverse voices, especially those from low-income families and people experiencing homelessness, are representative and included in a way that reflects and responds to the actual needs of the community. Not only does this kind of collaboration build trust, but it also lends greater legitimacy to housing efforts, as residents feel a sense of ownership over the outcomes.

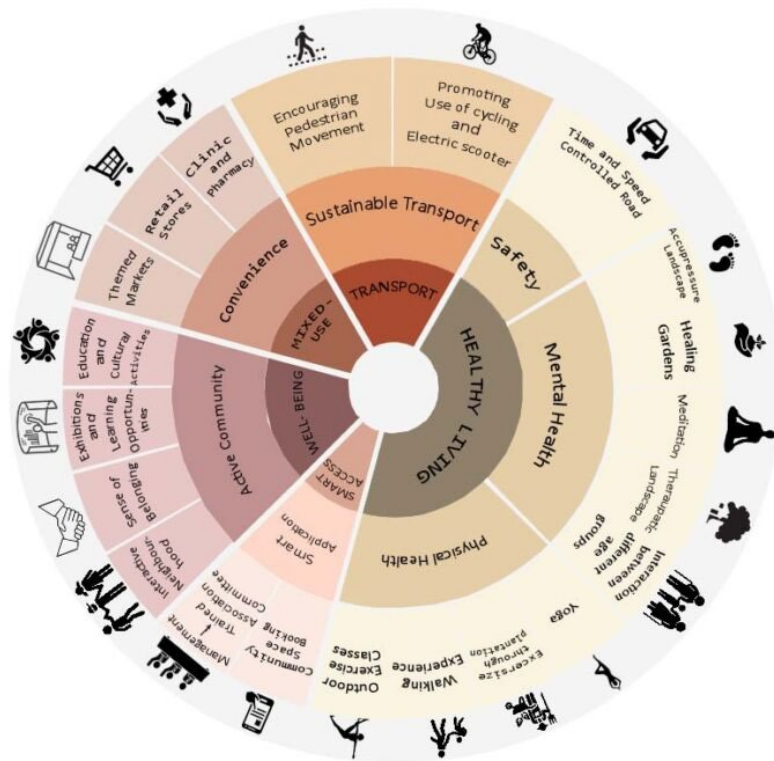


Fig. 2.7 – Design objectives after community engagement
Chitnis, Arundhati. *Design objectives after community engagement*. Newcastle University. Accessed 2024.

Architecture’s Role in Affordable Housing

Architecture is both the art and the science that shape the physical spaces of human habitation, and good architecture can do much to raise the quality of life for residents. When it concerns affordable housing, sensitive architectural design can attend not only to functional issues about living space but also to the social dynamics of community building. A well-

designed affordable housing project will create an environment that fosters safety, community interaction, and access to essential services.²⁵

Different innovative architectural solutions for meeting the diverse needs of the poor are underway. Modular housing, for example, can be constructed at minimum time with great efficiency, and it is one promising approach to pressing housing shortages. In these, community spaces, green areas, and amenities promoting social interactions can be designed. Besides, such projects could also include the principles of sustainable design, assuring that affordable housing is economically viable and ecologically responsible.

Addressing Homelessness through Community-Centric Solutions

Homelessness is a complex issue that is driven by the mix of economic, mental health, and systemic barriers to affordable housing.²⁶ This solution involves community engagement on the complex level. Having the guests voice their views on design and planning enables appropriateness in attempts to solve their problems.

One strategy is to develop supportive housing that combines affordable housing with access to: mental health services, job training, and substance abuse.²⁷ Community inclusion in supportive housing planning and design enables spaces that are functional while healing and resilient. For instance, the addition of places where residents can share and interact with each other promotes a sense of belonging and support.

Moreover, community inclusion could be one way of self-empowerment by people experiencing homelessness in asserting their rights and needs. In the case of housing solutions,

²⁵ O'Sullivan, "Rethinking Homelessness."

²⁶ Randall Amster, *Lost in Space: The Criminalization, Globalization, and Urban Ecology of Homelessness* (New York: LFB Scholarly Publishing, 2008).

²⁷ Martin, "Affordable Housing, Homelessness, and Mental Health."

active participation in discussions is more than likely to lead to the articulation of their preferences and involve them in decision-making processes related to their lives. Such empowerment offsets the stigma feelings attached to homelessness and builds understanding in the general community.

Challenges to Community Engagement

Community involvement in providing solutions to housing challenges is not without its own set of disadvantages. First, there is unequal power among the various stakeholders involved. Most of the time, the voices of poorer sections get drowned out by more important larger groups like developers or public officials. That all voices can be heard would, therefore, call for a deliberate creation of opportunity and space for this dialogue.

The challenges within housing and homelessness lead to frustration among its members as the challenges themselves are layered. Slowness of such changes, bureaucracy, and embeddedness of systemic disparities sometimes lead to disillusionment and subsequent disengagement. To work with these challenges, community engagement facilitators need to employ strategies that build trust, maintain transparency, and encourage ongoing relationships among all stakeholders.

The Future of Housing Solutions

Looking ahead, community involvement in housing is without question a core component of any plan that hopes to achieve equity, sustainability, and success. Going forward, cities dealing with increased housing costs and homelessness will increasingly need their insights and expertise. Architecture provides the canvas on which the communities are going to draw and sketch their future.

What this suggests for architects and town planners alike is the active collaboration with a community in the design of space, not only serving functional needs but reflecting values and aspirations of its prospective inhabitants.²⁸ It is putting the community at the center that enables housing solutions to move away from top-down approaches to more inclusive practices honoring those voices most impacted.

Community engagement is integral to any viable housing solution, particularly when considering multi-faceted issues of affordable housing and homelessness. Collaboration at all levels, with active resident participation in decision-making, can create innovative and sustainable housing strategies that answer the real needs within any community.²⁹ This would not only increase living standards for today's residents but would also go on to help in the building of a very fair and just society whereby everyone will enjoy safe and affordable housing. Going into the future, community engagement principles will continue to play a key role in creating a future where homelessness is managed and eventually eradicated with valuable and collaborative contributions.

Conclusion

Overall, architecture is a significant determinant factor in the solution of affordable housing and homelessness that are currently present and will continue to evolve. Both the growth of urban populations and inflated housing costs present architecture as not only a technical profession but also as a possible social movement. By using design strategies, architects can

²⁸ Amster, *Lost in Space*.

²⁹ Jürgen Friedrichs, Elizabeth Huttman, and Willem van Vliet, *Affordable Housing and the Homeless*, Reprint 2016 (Berlin ; De Gruyter, 2016), <https://doi.org/10.1515/9783110851908>.

develop resolutions that make life more accessible, sustainable, and resilient through community-founded resolutions.

A related theme is how architectural innovation has the potential to lower building costs while enhancing livability in housing projects. Techniques like modular construction and prefabrication ensure that resources are utilized efficiently, allowing the delivery of more affordable housing in quicker time and at a lower cost. By prioritizing such methods, architects can be of satisfactory service to help remedy the desperate need for affordable living spaces.

Another great activity involving sustainability is adaptive reuse of existing structures. Repurposing old, vacant buildings into affordable housing saves valuable resources and brings life back into the heart of communities, creating that much-needed sense of continuity and belonging-especially for homeless people. By placing affordable housing in an already established neighborhood, it helps in fighting the stigma associated with homelessness while enabling social cohesion.³⁰

The other crucial factor in the process of architectural design is community involvement. Involvement of the residents through discussions of their needs regarding housing ensures that design is part of the cultural and social contexts of their respective communities. Such a participatory approach builds ownership and empowerment necessary for the long-term success of any affordable housing initiative.

Architecture can also play a vital role in the design of supportive environments for homeless people. Thoughtful design might provide not only shelter but also vital services and spaces of communion that make recovery and reintegration into society possible. Features that

³⁰ O'Sullivan, "Rethinking Homelessness."

would reduce the underlying factors causing homelessness could include communal areas and access to social services.

In summary, this literature review is supportive of the fact that architecture can be a transformative force in the pursuit of affordable housing and combating homelessness. Innovative design solutions, inclusiveness and accessibility, and community engagement hallmark the creation of environments inclusive of dignity and belonging. If urban centers are struggling with their housing crisis, the urge for forward-thinking architectural solutions becomes a growing necessity. By prioritizing such strategies, the architectural community uniquely stands in one of the strongest positions to build just, resilient, and vibrant communities- leading to a future where all have access to safe and affordable housing. These integrated principles of architectural practice will serve not only to address the immediate challenges but also to provide blocks for sustainable urban development with relevant solutions for all citizens.

Chapter 3: Methodologies

Research methods are critical factors when it comes to thesis inquiry, and they are important to my thesis, which studies how architecture can address the crisis in affordable housing and homelessness. They provide a structured framework to understand and address these complex issues. Housing affordability cannot be understood from using only one approach as it involves social, economic, and environmental factors, so the approach needs to be multifaceted and interdisciplinary. By employing a variety of methods to my thesis topic, I can further my exploration of this topic to gather diverse perspectives and data to inform related architectural solutions. This combination of methodologies will allow better identification of innovative strategies and validate the design concepts through real-life feedback and studies. Therefore, research methods are essential to my thesis as they develop comprehensive, adaptable, inclusive, and effective architectural responses that can contribute to mitigating the affordable housing and homelessness crisis.

Case Studies

Case studies allow for an in-depth analysis for understanding design principles, user experiences and construction methods which are employed in the real-world environment. Through the exploration of case studies, this analysis will allow us to highlight the strengths and weaknesses of each project and better clarify the ideas I would like to implement into my project. Case studies allow the opportunity to gain experience from these existing projects to better understand how and why they were made i.e., functionality and construction methods, sustainability measures, aesthetics and even the user experiences. Case studies are an important aspect of conducting research within an architectural project as it serves to help provide valuable lessons and insights that can inform future design strategies.

Other methodologies

Other methodologies I will perform for my thesis inquiry are quantitative studies, spatial analysis, policy analysis and qualitative interviews. For quantitative studies, gathering data based on the geographical regional area I have chosen and learning the relevant statistics will allow me to better adjust my program for the rooms and programs and allow me to understand who the intended users will be. Quantitative studies will provide statistical relevance and help to quantify issues like affordability, community needs, demographics of the homeless population and more. This data can guide design decisions and policy recommendations as it can prove and provide, they are grounded in the actual needs of the community. Spatial analysis would consist of using Geographic Information Systems (GIS) to analyze the site and study the spatial distribution of housing resources, demographics (Fig. 3.1), services (Fig. 3.2) and more. Spatial analysis allows insights into the accessibility of housing distribution which can better reveal the patterns of homelessness. This analysis can inform site selection and design considerations of what the design could be on existing site conditions and topography of the space.



Fig. 3.1 – Demographics Map of Norfolk, Virginia - Many of the population are majority White and Black with a general mix and a concentrated area of Hispanics.
 Boualy, Mary. November 2024.



Fig. 3.2 – Homeless Services Map of Norfolk, Virginia = Homeless Services are primarily located within the Southern region of Norfolk as the concentration of homelessness is within this area.
 Boualy, Mary. November 2024.

Policy analysis will consist of reviewing existing housing policies and regulations to understand how it impacts homelessness and affordability. By understanding and reviewing the existing housing policies and regulations, it will allow better understanding and identifying the gaps and opportunities on reforming certain policies. This analysis can lead to recommendations for policy changes that would help implement housing designs. Lastly, conducting qualitative interviews will help us better understand the site and the people affected by this idea and project. Qualitative interviews will provide insight into the needs of the homeless population as well as speaking to community members on the concerns and needs for helping the homeless population within the area. These methods will allow me to capture the real-life experiences of the people and allow me to capture the complexities of the intended user as well as to better understand the needs of the people for that site selection chosen. All these varieties of methodologies will allow further insights and understandings to reinforce my thesis inquiry and research.

By employing a combination of these methodologies, the research can be used to address the multifaceted nature of affordable housing and homelessness. Case studies provide guidance and insights to better understand different examples that were successful and unsuccessful in the real-world context. Quantitative studies provide statistical justification and understanding of housing affordability, demographics, and other relevant statistics. Spatial analysis allows for better site selection and analysis to ensure the spaces chosen will fit the program that I will design as well as studying the housing resources, services and more. Policy analysis allows for a critique and understanding of existing housing policies and homelessness, which provides a foundation for potential reforms. Qualitative interviews would allow me to gain a better insight into the area I would like to work in as well as gain a better understanding of the users as the community would provide feedback, the wants and needs of the community and homeless

population and more. Therefore, these methodologies will guide design choices that are only functional to serving a home for the homeless population but also be responsive solutions to the needs and aspirations of the communities and users they will serve.

Chapter 4: Precedent Studies

Introduction

In researching affordable housing and homelessness, studying precedents is critical in providing important insights of past policies and initiatives and identifying strategies that were proven successful and learning from the failures. Analyzing precedents allows for a better understanding of past housing policies and social impacts which can help better the approach for future initiatives. Studying precedents can guide effective actions and meaning when it understands affordable housing and homelessness.

Within this chapter, I will be analyzing 5 projects through diagramming as each project provides different lessons, scale, and regions. Project 1 was created to address the lack of affordable housing in the city. This precedent is relevant to my thesis as I am studying affordable housing and homelessness so studying this project will allow me to study what was successful, what was not and what I would like to implement into my project. Through analyzing Project 1, I plan to further study the use of a kit of parts system and sustainability in affordable housing to push the exploration of diverse types of construction methods for my studies. Project 2 was created as a convent for monks and was intended to be a place of prayer, gathering, and living.

Project 2 highlights a more spatial idea and how form, materiality and light plays a role within the architecture designed. I plan to explore the contrast of materiality and light and how the form impacts the spatial ideas of my intended program.

Project 3 was created to be a hub for social, cultural, and recreational spaces within the area. Project 3 highlights community organization and how spatially it forms these interactive

spaces. I plan to further explore the creations of inclusive, sustainable, and contextually relevant public spaces to tie into my programmatic spaces.

Project 4 was created to house the homeless population. Project 4 utilizes a kit of parts to create housing for the people and spatially organizes them to form a community. I plan to further explore the creation of a kit of parts for my program as well as creating a community through spatial organization.

Lastly, Project 5 was also created to house homeless people, but on a more temporary to transitional stance which is programmatically like what I aim to create. Project 5 highlights modular units to house these people as well as creating a welcoming environment. I plan to study the balance of housing with amenities to create a holistic set of programs for the intended users as well as integration of the temporary and transitional housing. With that said, the intended outcomes of these precedent studies are to learn and study them to take away what was successful, what was not and what I would like to incorporate to better my initiative of affordable housing for the homeless.

Bamboo Micro-Housing

Project 1 is the Bamboo Micro Housing project by AFFECT-T in Hong Kong, China (Fig. 4.1) which was created in response to the city's housing crisis characterized by increasing property prices and a shortage of affordable living spaces.³¹ Hong Kong is a city with dense urban fabric and limited land so there is a challenge of providing affordable housing. AFFECT-T

³¹ Lucy Wang, Tiny bamboo housing in abandoned factories may provide relief to homeless in Hong Kong, March 20, 2014, <https://inhabitat.com/tiny-bamboo-housing-in-abandoned-factories-may-provide-relief-to-homeless-in-hong-kong/>.

chose bamboo, an abundant and traditional material in Asian architecture, as the primary material for this project.








Fig. 4.1 – Image of Micro-Dwellings
Matchar, Emily. “The Micro-Dwellings of Hong Kong.” Medium, August 28, 2014.

This project promotes environmental sustainability as bamboo is used to create micro-housing units to address the challenges within Hong Kong. Bamboo is a fast-growing and renewable resource so using this material would help to reduce environmental impact as well as promote sustainability in housing urban solutions. Within this project, the units are placed into abandoned industrial buildings, allowing for adaptive reuse of these sites, where the factories are an overall larger mass building which will hold the micro-housing units (Fig. 4.2). This is a very sustainable project as it uses locally sourced material and is adaptively reusing vacant former industrial sites which can help to revitalize the city.

Spatial Organization

Flexibility of spaces

-  Communal spaces
-  Larger units - multigenerational families
-  Medium units - family of 4 typ.
-  Smaller units - indicates or couples
-  Circulation

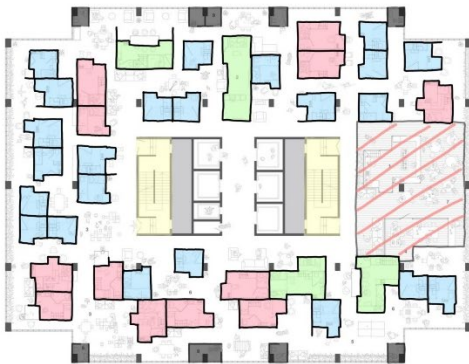


Fig. 4.2 – Diagram of Spatial Organization: Flexibility of spaces in plan
Boualy, Mary. October 2024.

The units of these micro-housing are quite flexible and adaptable. The units can be catered for and made to house a couple, people with disabilities, a typical family of four or even extended families. The design will be catered to the people, so if one would like more privacy, the design can be adjusted by increasing the use of bamboo to create more enclosed spaces. Construction of this project involves stripping bamboo for easier assembly. After the bamboo is stripped, if within the units there are arched pieces, this will be added to the construction process. The stripped bamboo will be fired to become malleable and placed into a mold to hold its arched shape. After it completely cools and takes the shape of the arch, the bamboo will be taken out of the mold and be shaped to be smooth (Fig. 4.3). The bamboo is connected through two systems:

(1) bolts, screws and (2) interlocking pieces where the bamboo is carved to fit into one another like puzzle pieces (Fig. 4.4). Throughout the micro-housing units, both construction methods are employed.



1. Fire stripped bamboo to become malleable without burning the bamboo piece



2. Place malleable stripped bamboo into mold to curve to hold shape



3. Take stripped bamboo out of mold and refine until bamboo is smooth

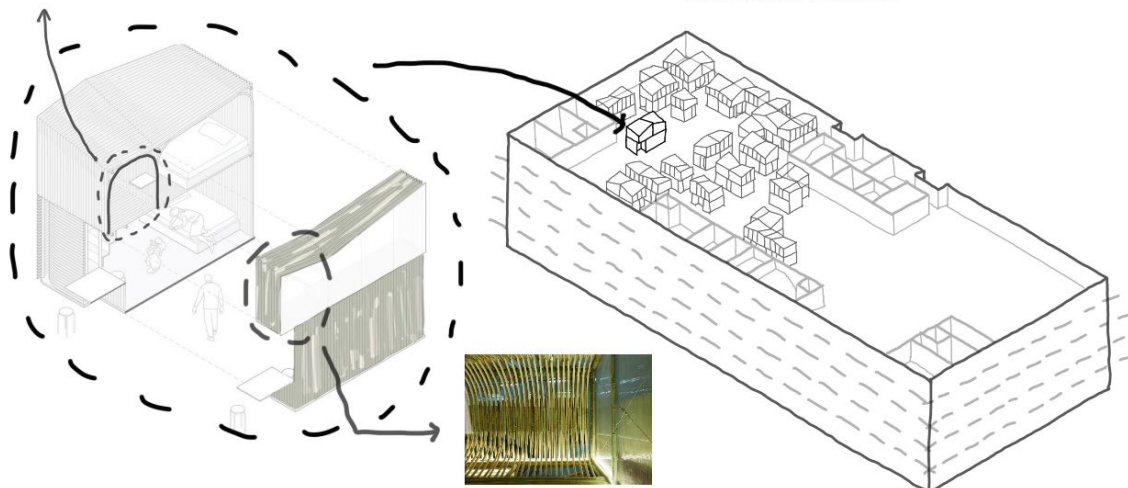
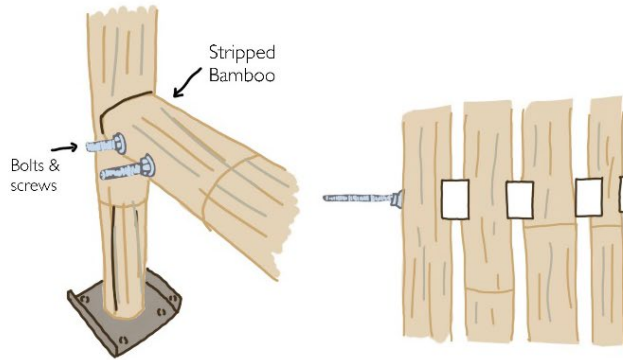


Fig. 4.3 – Diagram of Construction of bamboo arches
Boualy, Mary. October 2024.

Construction Methods

Bolts, screws, mallets



Interlocked pieces



Both

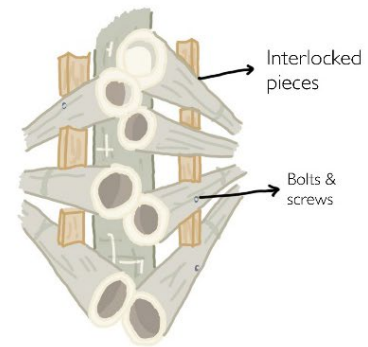
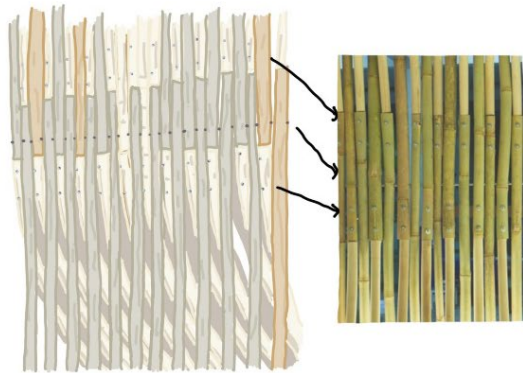


Fig. 4.4 – Diagram of Construction Methods
Boualy, Mary. October 2024.

The spatial organization of this project is adaptable. Given these units are placed onto the floors of adaptive reuse projects, the interior layout can be catered toward the building footprint it sits in. The units can be made to have community spaces which encourage interaction between residents and help to better idea this sense of community. The approach of micro units being flexible allows the design to respond to the different family sizes and urgent housing needs. From this precedent, I learned the importance of using locally sourced materials to lower environmental impacts and costs. I learned how the construction methods play a role in assemblage so having a kit of parts like bamboo and their systems of bolts and screws or interlocking joints to connect these become units is important. The adaptive reuse of vacant

buildings will help to revitalize areas and allow for the units to be more flexible within the floor itself as well as encourage a more community-centric design. The outcome I will take away from this precedent is incorporating sustainable materials into the design of affordable housing as well as exploring the option of a kit of parts that can cater to a variety of groups.

Convent of La Tourette

Project 2 is the Convent of La Tourette by Le Corbusier in L'Arbresle, France (Fig. 4.5) which was built to be a residence and retreat for the Dominican order of monks. Le Corbusier combines functionality and spirituality within this building as it sits on a hillside overlooking a valley.³² His ideal goal for the design of this building was to explore monastic architecture and create spaces that encourage contemplation, community as well as a connection to nature.



Fig. 4.5 – Image of Convent of La Tourette
LOISEAU, Steven. “Couvent Sainte-Marie de La Tourette.” Le Corbusier- World Heritage, June 15, 2022.

³² Steven Loiseau, “Couvent Sainte-Marie de La Tourette,” Le Corbusier- World Heritage, June 15, 2022, <https://lecorbusier-worldheritage.org/couvent-sainte-marie-de-la-tourette/>.

This project harmonizes with its natural surroundings through the implementation of large windows or even terraces which helps to frame the views of the landscape. With these large windows and the materiality of concrete, the contrast between the two becomes evident. The lightness of these large windows are tectonics implemented to balance out the heavy stereotomic of the concrete material (Fig. 4.6). The use of raw concrete, brick, etc. impacts the sensory experiences of a space with its textures and finish. With this heavily solid choice, the natural light is placed strategically within the interior of the spaces of the design. Light in this case shapes the mood and enhances the spiritual experience within architecture. The interplay of light and shows within the interior spaces and the contrast of materiality (Fig. 4.7).

Stereotomic vs Tectonic

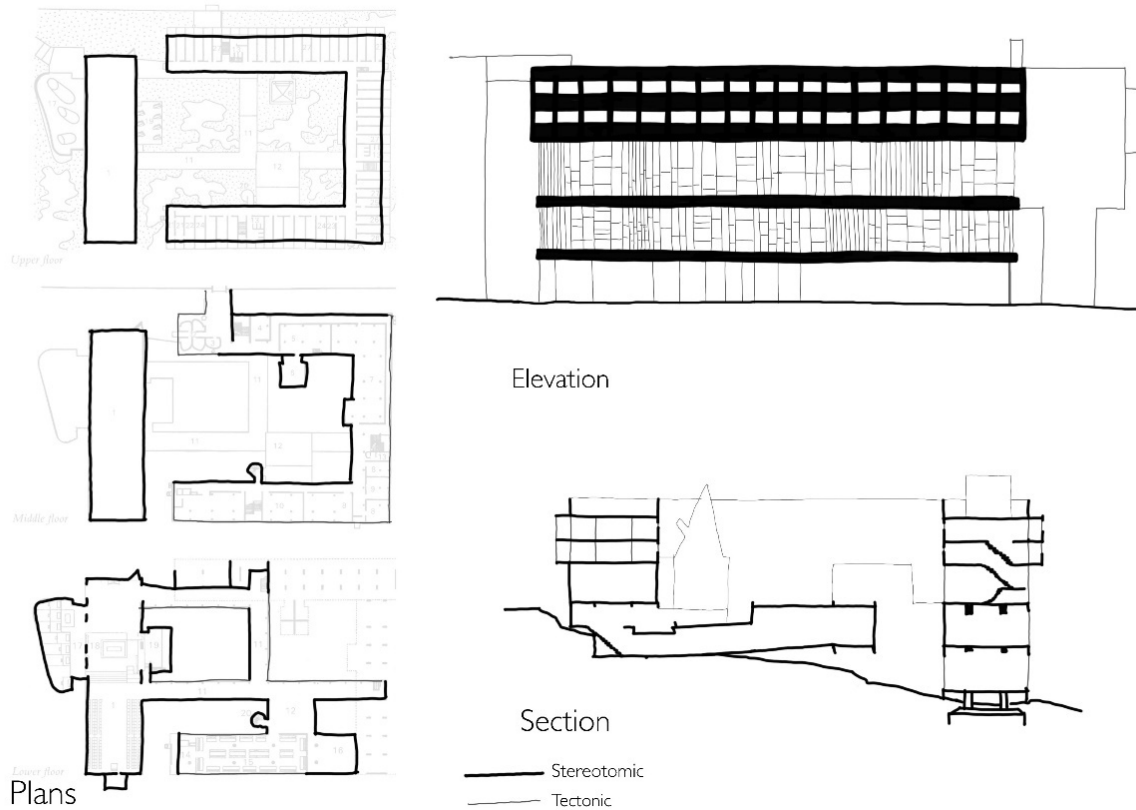


Fig. 4.6 – Diagram of Sterotomic vs Tectonic relations
Boualy, Mary. October 2024.

Ambient Conditions:
Contrast of materiality & light

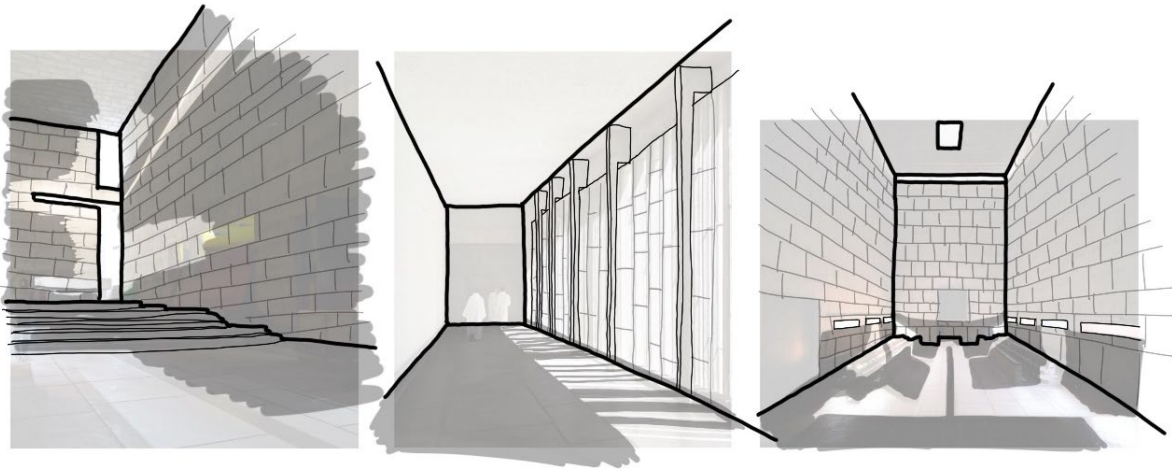


Fig. 4.7 – Diagram studying ambient conditions of spaces
Boualy, Mary. October 2024.

The spatial organization of this project was a clear intent of promoting community living. The evolution of the form begins with a simple rectangle box and ends up being a bar building with a U-shaped building which forms an inner facing courtyard (Fig. 4.8). Within this organization, it creates a clear distinction of the communal areas like the chapel and dining hall to the more individual spaces like the private cells which creates a balance between the communal and personal programmatic spaces. The design of this project has functional zones that separate the spaces for solitude and prayer and ones of communal activities. The form was part of the spatial planning to meet the diverse programmatic needs to fit into the structures.

Spatial Organization: Evolution of form

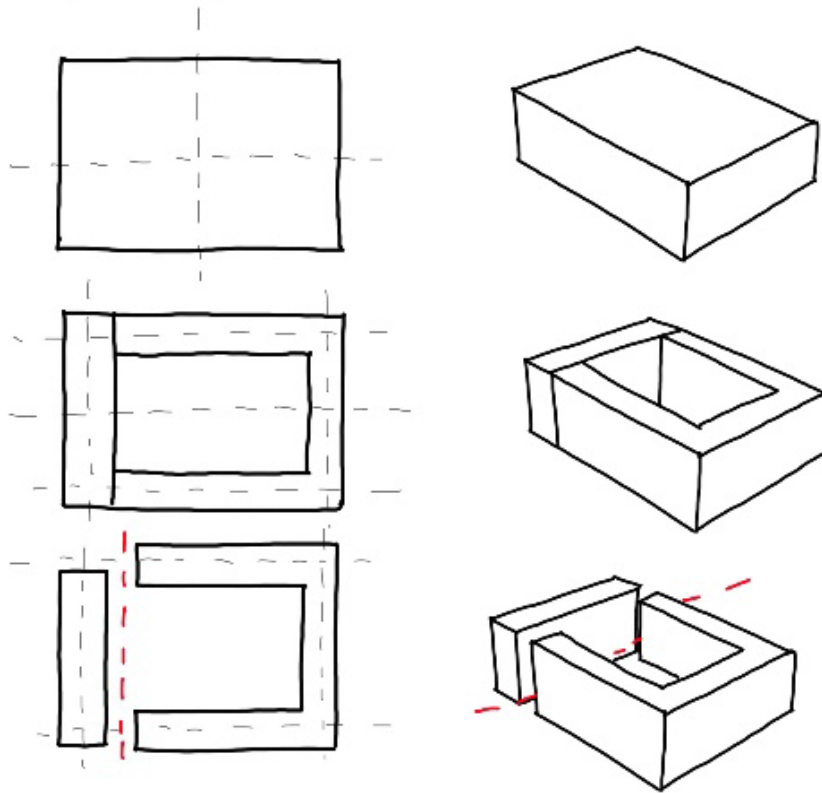


Fig. 4.8 – Diagram of Evolution of Form
Boualy, Mary. October 2024.

From this precedent, I learned how the integration of light and materiality goes hand in hand to create these ambient conditions and caters towards the experiences of the users. Light and shadows to the contrast of materiality can shape the connection to the building and its intended programmatic space. I learned how spatial organization through form can create distinct programmatic zones so the form of the building can help shape the placements of the program. The outcome I will take away from this precedent is using light and shadows with materiality to shape the experience of the users and creating clear programmatic zones but finding a way to incorporate them nicely into one site.

Community Center Valley of Hérault

Project 3 is the Community Center Valley of Hérault by N+B Architects in Gignac, France (Fig. 4.9) which was developed to be a social, cultural, and recreational hub within the area. This center was to serve the community and encourage community engagement as there are various programs and services for the residents.³³ This project addresses the cultural and environmental context of the Hérault Valley as the design reflects sustainability, social integration and connecting to the landscapes.



Fig. 4.9 – Image of Community Center of Hérault
“Parc d’activités Camalcé à Gignac NBJ Architectes.” World. Accessed October 10, 2024.

This project was intended to be a gathering space for the community, so the spatial organization was catered to the ideal design of gathering and for the people which enables interaction and engagement. The overall site plan of this project consists of multiple buildings that face their informal central community space which encourages inclusivity and engagement

³³ “Parc d’activités Calmacé à Gignac NBJ Architectes,” World, accessed October 10, 2024, <https://www.world-architects.com/en/projects/view/community-of-communes-of-the-valley-of-herault>.

within the community (Fig. 4.10). The interplay of building orientation and massing plays a role in understanding why the architects designed this community center to be this way. Each individual building directly faces this landscaped central strip which acts as datum or guiding axis in a way since this is the centered focus of the program (Fig. 4.11). The massing of the buildings has this overall subtractive element in the form which pushes and pulls the users to this centralized space (Fig. 4.12). The informal landscape center serves as this inclusive and inviting gathering space and is the key to the spatial organization of this design as it anchors the building orientations and subtractive nature of the massing.

Spatial organization:
Site plan organization



Fig. 4.10 – Diagram of Site Plan Organization
Boualy, Mary. October 2024.

Spatial organization:
Floor plan organization

- Large communal space
- Medium size spaces
- Smaller private size spaces
- Informal communal space



Fig. 4.11 – Diagram of Floor Plan Organization
Boualy, Mary. October 2024.

Subtractive details:
Push/Pull of massings for spatial organization

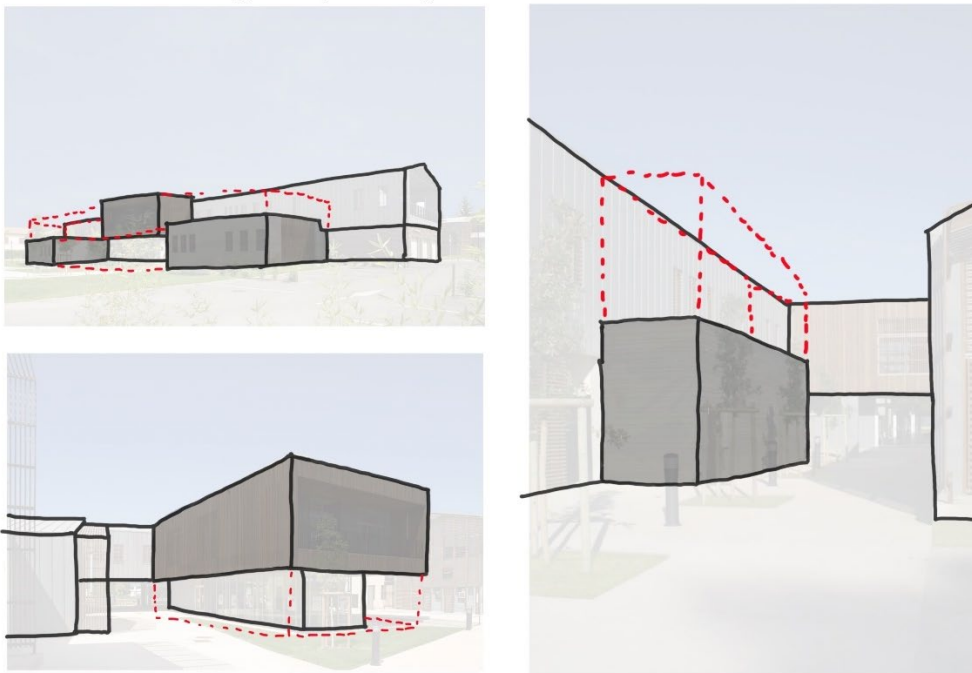


Fig. 4.12 – Diagram of Subtractive details
Boualy, Mary. October 2024.

From this precedent, I learned how programmatic spaces play a role in spatial organization and idea of design. The center served its function, but it enriches the community's identity and heritage. I also learned how the mass and form can address, engage, and interact with the users by subtracting or adding to the massing. The outcome I will take away from this precedent is creating an inclusive environment through the spatial organization and massing of the buildings.

Alexandria Tiny Home Village

Project 4 is the Alexandria Tiny Home Village by Lehrer Architects in Los Angeles, California (Fig. 4.13) which was designed to address homelessness and create a sustainable way of living. Los Angeles has a large homelessness crisis due to high housing costs, income inequality and lack of affordable housing options. This project was a pilot project in 2020 during the pandemic to provide immediate shelter and transitional housing for the vulnerable populations.³⁴ This project design utilizes tiny houses organized around communal spaces to encourage privacy and community engagement.

³⁴ "Alexandria Tiny Home Village," Lehrer Architect LA, accessed October 20, 2024, <https://www.lehrerarchitects.com/project/alexandria-tiny-homes>.



Fig. 4.13 – Image of Alexandria Tiny Home Village
“Alexandria Tiny Home Village.” Lehrer Architect LA. Accessed October 20, 2024.

Within this project, I observed the spatial organization of the programs and layout within the designs. Given this site sits along a highway, there was a need to create different zones of programs for the homeless population (Fig. 4.14). The program in this project is a horizontal line of programs that consist of entry, storage, laundry room, bathrooms, homes and outdoor spaces and the tiny homes are implemented in vertical strips to face one another to form these communities (Fig. 4.15). The layout suggests social interaction through the design which supports social cohesion and reduces isolation. This project also highlights how architecture can play a key role in civic engagement where communities can come together to address these social issues.

Spatial Organization
Axial Relationship



Vertical linear elements to attach to this datum creating a rhythm at the core of the houses

Plan

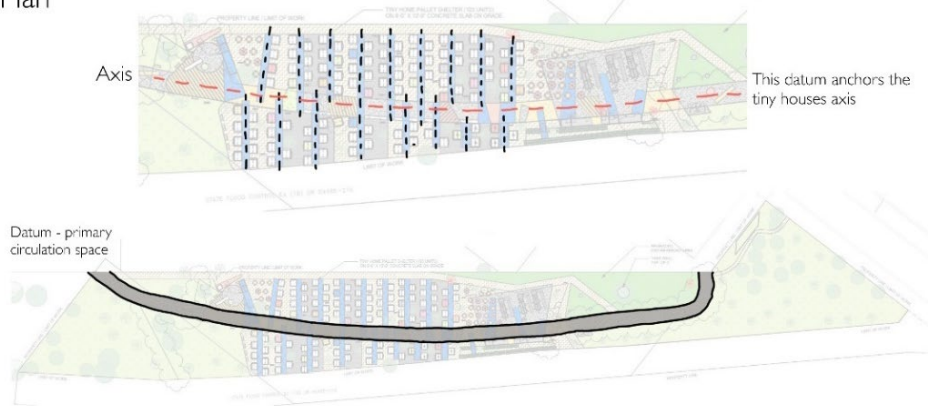


Fig. 4.14 – Diagram of Axial Relationship
Boualy, Mary. October 2024.

Spatial Organization
Site Plan Layout

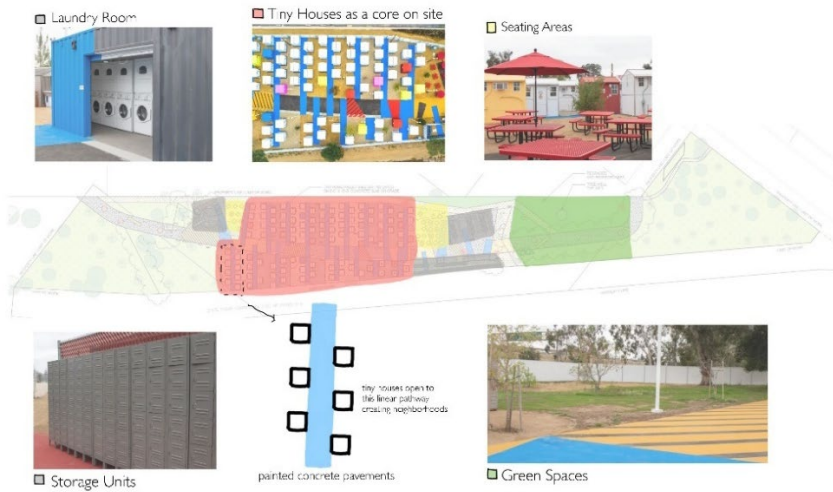


Fig. 4.15 – Diagram of Site Plan Layout
Boualy, Mary. October 2024.

Another aspect of this project is how they implement a kit of parts to create the tiny homes. The tiny homes use a modular design which provides rapid and flexible housing solutions. The tiny homes are assembled off site and are pallet shelters with interlocking joints (Fig. 4.16). The kit consists of concrete slab on grade then the pallet shelters placed on top of this. Each tiny home can house two individuals, and it is flexible and inclusive as each tiny home provides a private space for the residents.

Construction Process

Tiny House Assemblage

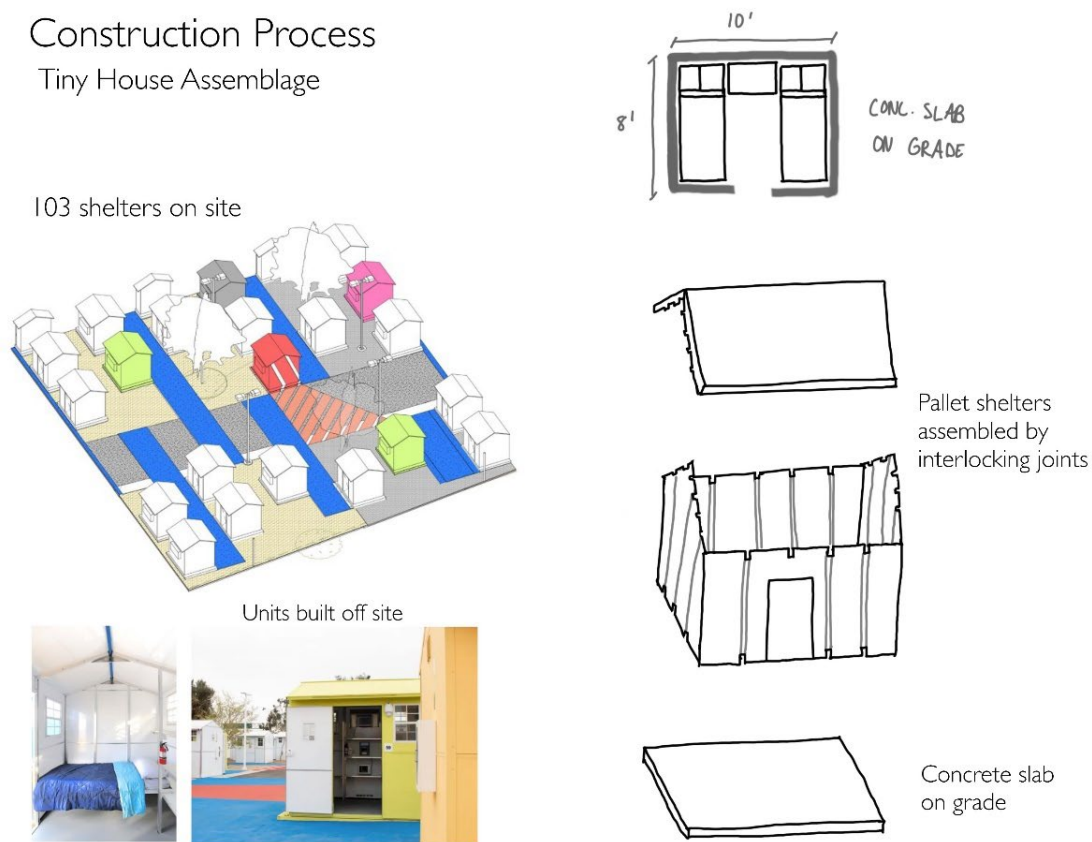


Fig. 4.16 – Diagram of Construction Process
Boualy, Mary. October 2024.

From this precedent, I learned about the spatial organization in relation to the site and how the site will determine how buildings and the program will be organized like how this site is a linear highway and the programmatic zones follow the flow of the site. I also learned how the kit of parts is modular which can help with addressing the immediate needs and be assembled

and disassembled quickly and when needed. The outcome I will take away is how modularity and community integration can be implemented into future housing initiatives to tackle the complex challenges of urban living and homelessness.

The Hilda L. Solis Care First Village

Project 5 is the Hilda L. Solis Care First Village by NAC Architecture in Los Angeles, California (Fig. 4.17) which was designed to provide care, support, and housing in response to the city’s homelessness crisis. This project aimed to create a safe and dignified environment that integrates temporary and permanent housing.³⁵ The program of this project provides essential services as well like healthcare, job training, mental health support and more which is an aspect I would like to implement to my program.



Fig. 4.17 – Image of The Hilda L. Solis Care First Village

“The Hilda L. Solis Care First Village.” NAC Architecture. Accessed October 20, 2024.

³⁵ “The Hilda L. Solis Care First Village,” NAC Architecture, accessed October 20, 2024, <https://www.nacarchitecture.com/portfolio/hildalsoliscarefirst>.

This project is a community-centric design where the design prioritizes communal spaces like shared kitchen space and gathering areas, so it encourages social interaction and builds this sense of community. The project incorporates green spaces which encompasses the housing and balances the living programmatic spaces and the gathering communal programmatic spaces (Fig. 4.18). The green spaces are the open gathering spaces and meadow spaces for outdoor seating, so the green spaces wrap around the masses of the buildings. The incorporation of the green spaces highlights how this design is not just for shelter but prioritizes the mental health and physical health of the residents.

Spatial Organization

Landscape/Green Spaces to Form Relationship

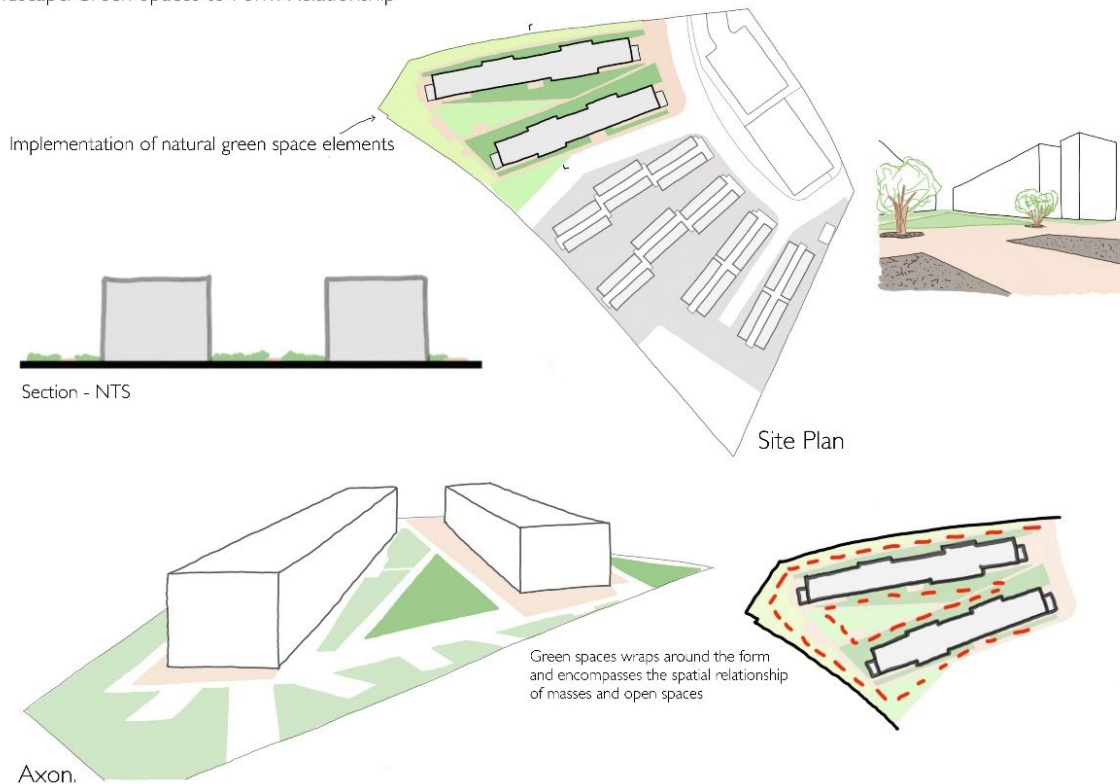


Fig. 4.18 – Diagram of Landscape Relationship to Form
Boualy, Mary. October 2024.

The construction methods of this project utilize shipping containers to be used for the units for the residents (Fig. 4.19). The modular construction of this design allows for flexible and faster assembly, so the adaptability responds to the surrounding environments. The spatial organization of the building is shipping container units, mechanical chase, and shipping container units with circulation along the exterior and around the building (Fig. 4.20). The shipping containers are divided into two units, and the circulation area is around the building just like how the green spaces encompass the massing and form of the building.

Construction Process

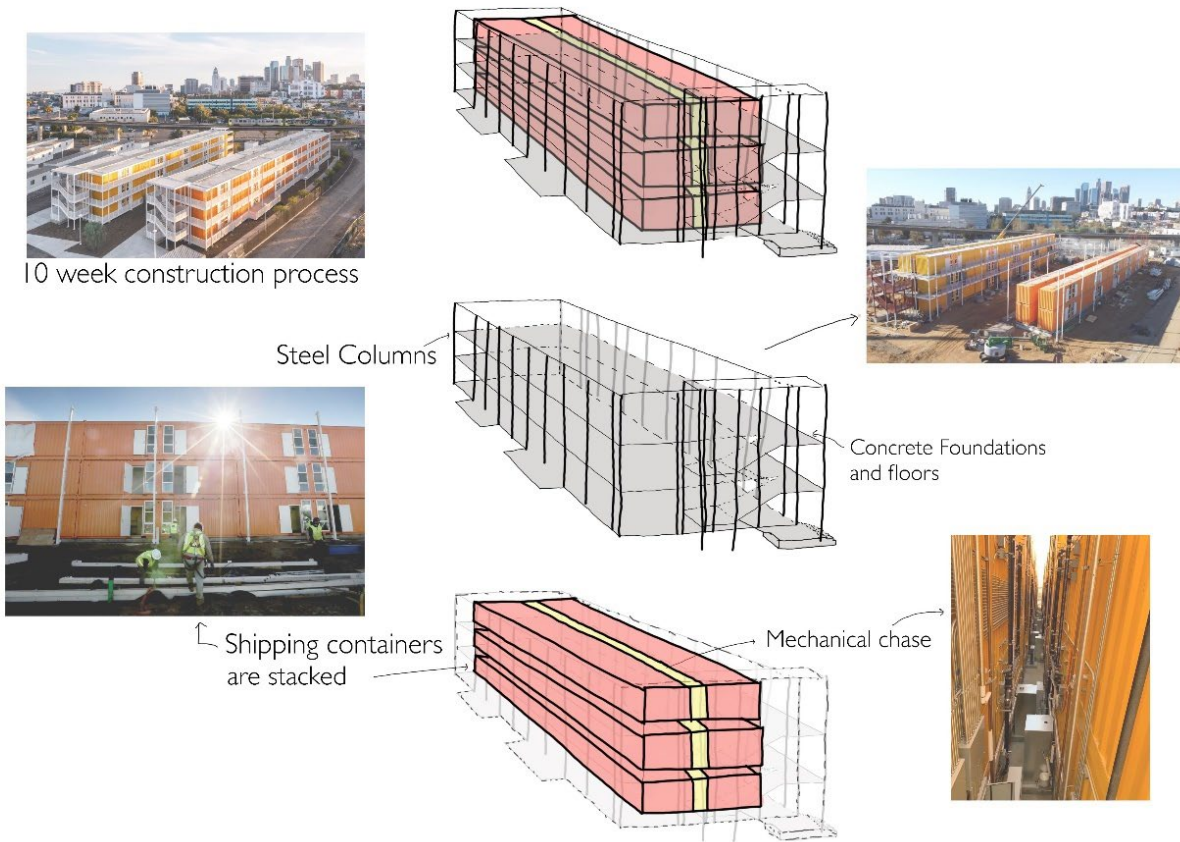


Fig. 4.19 – Diagram of Construction Process
Boualy, Mary. October 2024.

Spatial Organization

Building Organization

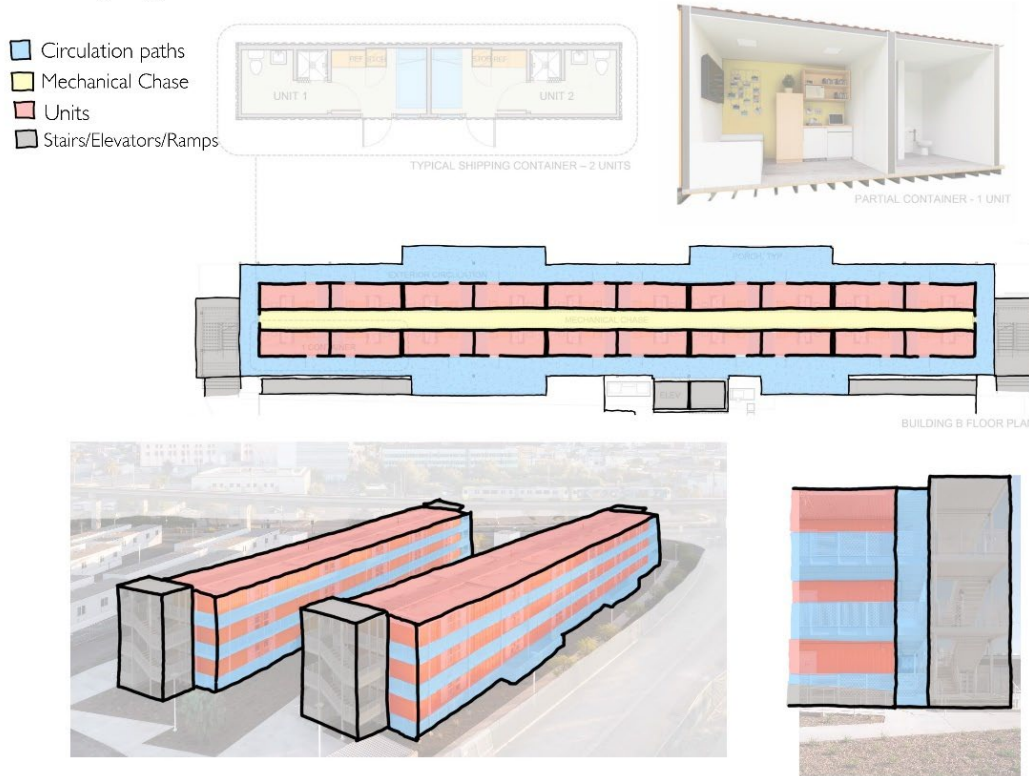


Fig. 4.20 – Diagram of Building Organization
Boualy, Mary. October 2024.

From this precedent, I learned about the spatial organization and necessary implementation of natural green spaces to better the environment of the people which can promote inclusivity, better mental health and help the residents as there are support spaces and services. I also learned how modular elements can aid the construction process to address the immediate needs of housing for those experiencing homelessness. The outcome I will take away is how affordable housing does not only need to provide shelter, but can also be a place for belonging, encouraging dignity and health through support services and natural green elements and amenities.

Conclusion

Overall, studying precedents allows insights and lessons from these existing projects which can inform design decisions and strategies. Analyzing previous designs and how they respond to site constraints, social issues, environmental considerations, and many other challenges allows architects to gain a better understanding of what works, what does not and why. All five projects highlight innovative design that addresses my thesis which is using architecture to solve affordable housing and homelessness crisis. Project 1 shows how resource-efficient designs can help urban density challenges and Project 2 displays the play of materiality and light to create ambient conditions. Project 3 highlights spatial organization that focuses on a primary central space. Projects 4 and 5 show the importance of providing safe, supportive spaces for the vulnerable populations with integrated support spaces.

Each project adopts a unique approach like using sustainable materials, modular and compact living solutions, or integration of support spaces to demonstrate how architecture can encourage community, dignity, and well-being. All these projects reinforce my thesis by not only creating affordable housing solutions, but promoting social equity, improving the quality of life, and contributing to the overall inclusive and resilient communities.

Chapter 5: Zones and the Program

"Rebuilding Lives" is a thesis project that explores the critical role of architecture in addressing homelessness and the growing need for affordable housing. The project's primary goal is to develop a housing program that goes beyond mere shelter, providing not only a safe and stable place to live but also access to essential amenities and comprehensive support services. These services are designed to help individuals experiencing homelessness regain stability, rebuild their lives, and re-enter into society.

Through a deep investigation into the specific needs of the homeless population, including privacy, personal space, and reliable access to social, healthcare, and employment resources, the project seeks to create a building typology that accommodates these needs while fostering a sense of dignity and empowerment. The program emphasizes the importance of designing spaces that support both short-term relief and long-term stability.

The research includes a focus on innovative and adaptable solutions for affordable housing, with a particular emphasis on modular housing as a potential model. However, the exploration also considers other housing strategies such as tiny homes, prefabricated structures, and the adaptive reuse of existing buildings. By considering a range of design options, the project aims to identify a sustainable, cost-effective, and scalable approach to addressing homelessness that can be integrated into existing urban and suburban environments. "Rebuilding Lives" strives to offer not only a solution to homelessness but also a means of increasing affordable housing options for the wider community, promoting social equity, and fostering a more inclusive and resilient urban future.

From Zones to Concept Program

The program is organized into distinct zones (Fig. 5.1), each designed to meet the varying needs of individuals experiencing homelessness while promoting long-term stability and reintegration into society (Fig. 5.2 and Fig. 5.3). In the *Hearth of Renewal: Residential Living Zone*, the program offers transitional housing for a duration of two to five years, providing rooms with basic amenities, including accessible units and family-sized accommodations. Health support programs, job training, counseling offices, and administration offices within this zone create a comprehensive system of care and support aimed at helping individuals regain independence and stability.

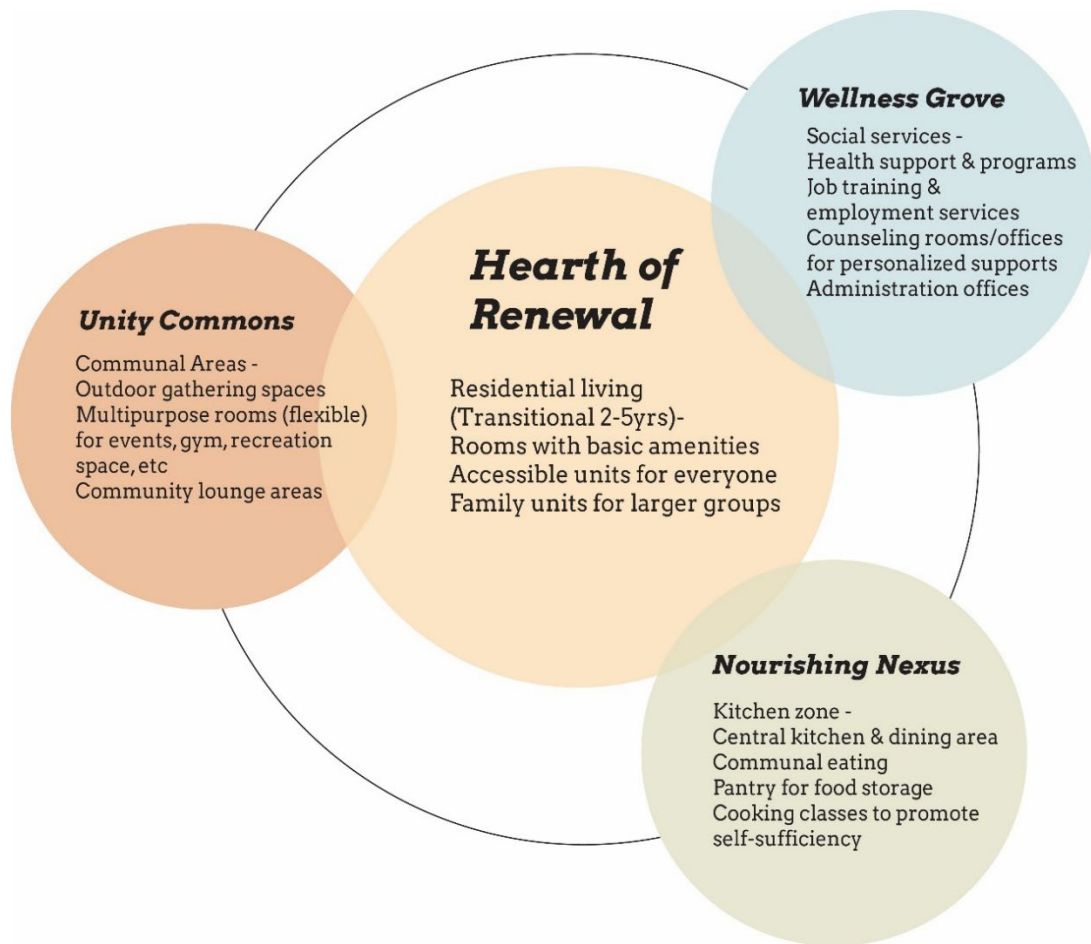


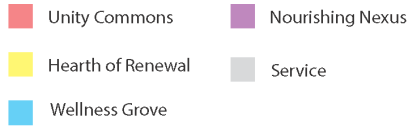
Fig. 5.1 – Program Zones Diagram
Boualy, Mary. October 2024.

The *Nourishing Nexus: Kitchen Zone* serves as the heart of communal living, with a central kitchen and dining area that fosters shared meals and social interaction. It also includes a pantry for food storage and offers cooking classes to promote self-sufficiency and empower residents to take charge of their nutrition and daily lives.

The *Wellness Grove: Social Services Zone* provides essential services, such as health support, job training, and personalized counseling, to guide individuals on their path to recovery and reintegration.

Lastly, the *Unity Commons: Communal Areas* include outdoor gathering spaces, flexible multipurpose rooms for recreation, events, and gym activities, as well as community lounges, creating a sense of belonging and connection among residents and helping to reduce isolation. Together, these zones form an integrated program that not only addresses the immediate needs of the homeless population but also fosters personal growth, social integration, and long-term stability.

Thesis Program



PROGRAM	SQF	COUNT
UNITY COMMONS		
Outdoor Gathering Spaces	1400	2
Multipurpose rooms	2000	4
Community Lounge Areas	500	2
TOTAL	3900	8

HEARTH OF RENEWAL		
Residential Living (smaller units)	160	100
Residential Living (larger units)	300	30
Shelter Zone	120	20
TOTAL	27400	150

WELLNESS GROVE		
Health support rooms/offices	600	4
Job training/employment rooms/offices	300	2
Counseling rooms/offices	450	3
Administration office (include reception)	2000	1
TOTAL	3350	10

PROGRAM	SQF	COUNT
NOURISHING NEXUS		
Kitchen	1800	1
Dining Area (one outdoor)	1200	3
Pantry Storage	150	2
TOTAL	3150	6

SERVICE		
Locker Storage for shelter zone	400	2
Restroom for shelter zone	600	2
Shower facilities for shelter zone	800	4
Client Laundry	800	4
Client Trash	300	2
Kitchen Trash	200	1
Storage	150	2
TOTAL	3250	17

TOTAL	41050 sqf	191
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Fig. 5.2 – Proposed Program Tabular Sheet
Boualy, Mary. October 2024.

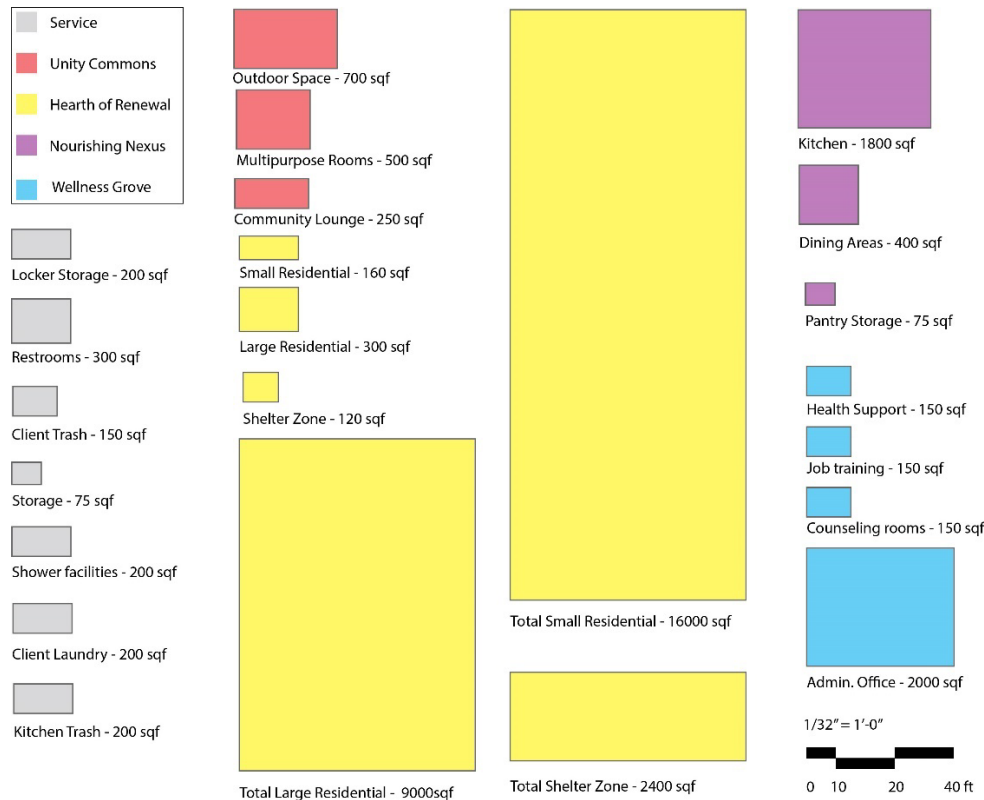


Fig. 5.3 – Proposed Program Block Sheet
Boualy, Mary. October 2024.

Precedent Justification

Through analyzing case studies of the precedents, it has informed the development of my program. Each of these examples provided valuable insights into various aspects of design, construction, and spatial organization, shaping my approach and understanding of what would work best for my project. These precedents have helped shape my approach to programming, guiding my decision-making process and offering a better understanding of what strategies and solutions to implement for the outcomes for my design.

‘Unity Commons’ draws inspiration from all five precedents as all five implemented a communal aspect of living into their programs. Bamboo Micro-Housing has community spaces within each floor, encouraging community within adaptable housing solutions. Convent of La Tourette has an interior-oriented courtyard that acts as a communal space to the monks to gather around in. Hérault Community Center had an informal outdoor communal space that shaped the whole design to be more inwardly facing and intimate. Alexandria Tiny Home Village incorporated outdoor gathering spaces for the people to use. Hilda L. Solis Care First Village provided outdoor communal spaces and recreational spaces to encourage shared experiences and community. ‘Unity Commons’ provides gathering spaces and promotes bonding, connectedness, and engagement for the sense of community.

The Alexandria Tiny Home Village and the Hilda L. Solis Care First Village informed ‘Hearth of Renewal.’ Alexandria Tiny Home Village provided tiny houses for the homeless which served as temporary housing during the pandemic. Hilda L. Solis Care First Village implemented both temporary and transitional housing, addressing the immediate need for shelter and providing pathways to more permanent housing solutions. Integrating both short-term and long-term housing options into ‘Hearth of Renewal’ allows us to create a safe and stable

environment for people who are vulnerable, which ensures they have access to shelter and the opportunity for a permanent place to call home.

‘Wellness Grove’ was inspired by Alexandria Tiny Home Village and the Hilda L. Solis Care First Village. Alexandria Tiny Home Village includes dedicated spaces for job training and counseling for the users, which offers the opportunity to regain stability and work towards self-sufficiency. Similarly, the Hilda L. Solis Care First Village provided administrative office spaces, job training spaces, and counseling rooms which provide support for the residents. By implementing these essential services into ‘Wellness Grove,’ it will help to allow the users to gain stability and empowerment and present them with the tools and resources needed to learn and rebuild their lives.

‘Nourishing Nexus’ was informed by all five precedents as communal gathering and dining was a key aspect of encouraging social activity within these spaces. The inclusion of dining areas and kitchen spaces allows the users to interact with one another and promotes a sense of community, which can help combat isolation. ‘Nourishing Nexus’ aims to provide a welcoming space for the users to come together as a family by sharing meals, preparing foods together, and building meaningful connections which are central to supporting social engagement and emotional well-being.

Each of these precedents has contributed a critical lesson, helping me refine my vision for an architecture that not only shelters but empowers and uplifts individuals. These insights will guide the design of a housing solution that addresses both the immediate and long-term needs of the homeless population.

Therefore, the Hilda L. Solis Care First Village project was selected as the precedent for reverse engineering in this housing program because of its comprehensive and comprehensive

approach to solving homelessness. The project incorporates emergency shelter, transitional housing, and supportive services on one well-thought-out site that provides both immediate relief and long-term stability. The philosophy in design, offering a dignified living environment achieved through the blending of different housing types and provision for temporary and transitional homes with support services, is in close agreement with the research aims of this thesis. The Care First Village has also stated that shelter alone is not enough but requires health care, job training, mental health, and counseling to bring the homeless person back to independence. The community-building focus of this project through sharing spaces and communal areas reflects the realization that homelessness will be best conquered with a complex, multifaceted approach that caters to social, physical, and emotional nurturing. Successful in providing a model in which privacy and personal space balance with access to services, it informs the design of a program aimed at easing homelessness while fostering social reintegration and long-term stability.

Reverse Engineering

Reverse engineering at the Hilda L. Solis Care First Village in Los Angeles deconstructs the design and construction processes for the examination of how the project came into conceptualization and implementation (Fig. 5.4 and Fig. 5.5). The Care First Village is considered one of the largest supportive housing developments in the nation built for people experiencing homelessness, providing both shelter and services. Reverse engineering would typically look at the architectural plans of this project, materials, site layout, and the integration of services relating to medical care, mental health support, and job training. This will help in understanding how the project managed to provide solutions to some of the challenges it experienced in space optimization, sustainability, and access while also balancing cost-

effectiveness with comprehensive support services. Furthermore, the reverse engineering of this initiative can be the study of the social and community impacts of this development, assessing how well it contributes to the broader homelessness solutions of Los Angeles, and identifying lessons for application in any future housing initiatives of this region. Care First Village was frequently described as an exemplary model of urban design that would prioritize resident wellness while contemplating innovative homelessness mitigation strategies.

Hilda L. Solis Care First Village

PROGRAM	SQF	COUNT
UNITS		
Permanent Units	360	132
Temporary Units	120	100
TOTAL	33120	232
ADMINISTRATION		
Admin. Office	4600	1
Reception	360	1
TOTAL	4960	2
COMMUNITY ENGAGEMENT		
Recreational Areas	7200	2
Community Gathering Area	1120	1
TOTAL	8320	3
EXTERIOR CONNECTION		
Dog Park	1120	1
Meadow/Green spaces	2320	3
Outdoor Seating	400	4
TOTAL	5040	8
SERVICE		
Commercial Kitchen	1700	1
Kitchen Trash	560	1
Client Trash	240	2
Client Laundry	560	1
Parking	6000	1
TOTAL	9060	6
Total Building Program	60500sqf	
Total Area	174240sqf	
Estimated Circulation sqf	113920 sqf	



Fig. 5.4 – Reverse Engineer Tabular Sheet
Boualy, Mary. October 2024.

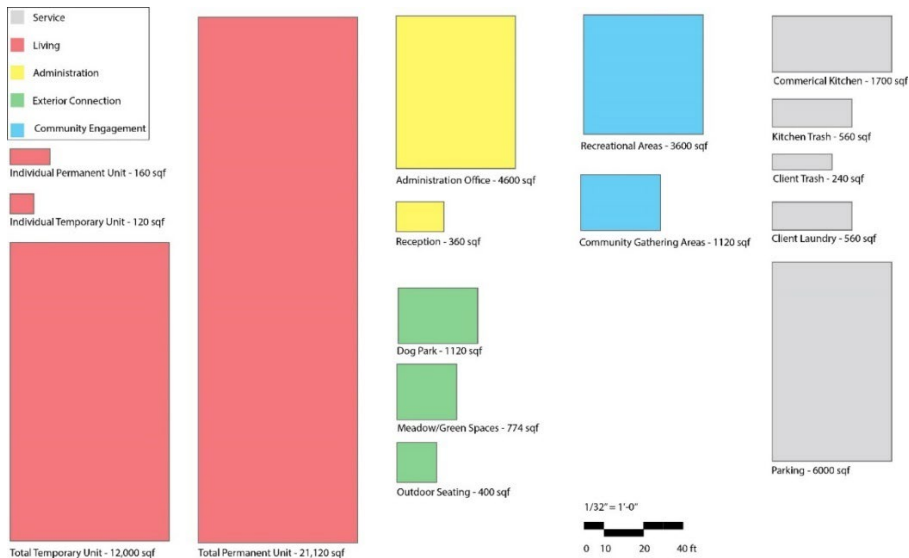


Fig. 5.5 – Reverse Engineer Block Sheet
Boualy, Mary. October 2024.

Chapter 6: Site Selection and Analysis

Site Selection Abstract

This initiative is presented as a program response to the increasing homeless population, proposing an affordable housing program in Norfolk, Virginia. In addition to implementing shelter for intended users, the program should provide for a more permanent, sustainable housing solution. One of the key factors contributing to homelessness—a rising issue over the years throughout many cities, including Norfolk—is due to a lack of affordable housing. This project will create a thriving community of services such as recreational spaces, social services, communal spaces, and more. Through a set list of criteria like accessibility to public transportation, grocery stores, parks, and other public amenities, the site will be chosen strategically which can help in the rebuilding of lives for the residents.

By combining temporary housing, transitional housing, and services, the program of this project aims to design a mixed-use residential building. Part of the proposed program would include on-site services such as health check-ups, counseling rooms, job training, and community spaces, which can help in mentoring the residents to regain stability and independence.

The city of Norfolk is an ideal site because it is committed to the concern of helping the homeless throughout the city. It is highly variable within the population, with this as a solid foundation for building the proposed program for addressing both the immediate needs of homelessness and the more transitional long-term solutions. By basing this development on a site in Norfolk that already has easy access to fundamental facilities, infrastructure is already laid down to revitalize the community and enable it to grow.

This project will provide not only shelter for the vulnerable population who are experiencing homelessness, but it will also be a place that can create a better sense of belonging. Creating a community where hope, dignity, and opportunity are restored may allow homelessness to be approached with more determination and empathy-enabling a more resilient and just city.

Site Selection Analysis

The site selection matrix was prepared to further consider and compare the suitability of four potential development sites in Norfolk, Virginia for this thesis. Of the four sites reviewed, two are represented by unimproved parcels of land, while the other two are parcels of land consisting of vacant lots with an existing building. Each location was assessed against a set of key factors that could affect its potential to be developed. Those factors include site location, access to major infrastructures and transportation, zoning restrictions, and access to existing amenities nearby, etc. Such an analysis will also look forward to redevelopment opportunities considering the structure's condition in its existing form and their feasible renovation or reutilization. Each of these varied components serves to make the matrix comprehensive and detailed in its comparison, therefore guiding decision-makers in selecting a site that presents the greatest potential for success. The objective should be to identify an ideal location that would meet not only the long-range goals of the project but also the community of Norfolk.

Site A Selection

Site A, while a vacant lot with an abandoned building, maintained a general integrity in appearance from a very cursory view (Fig. 6.1). Comparatively speaking against set criteria and ideals of the program, it outweighed when compared. A couple of key questions guided me:

"Would I rather take a site that has an existing homeless shelter surrounding it?" or "Would it not be better to build a new facility for the homeless in a less crowded part of the city?"

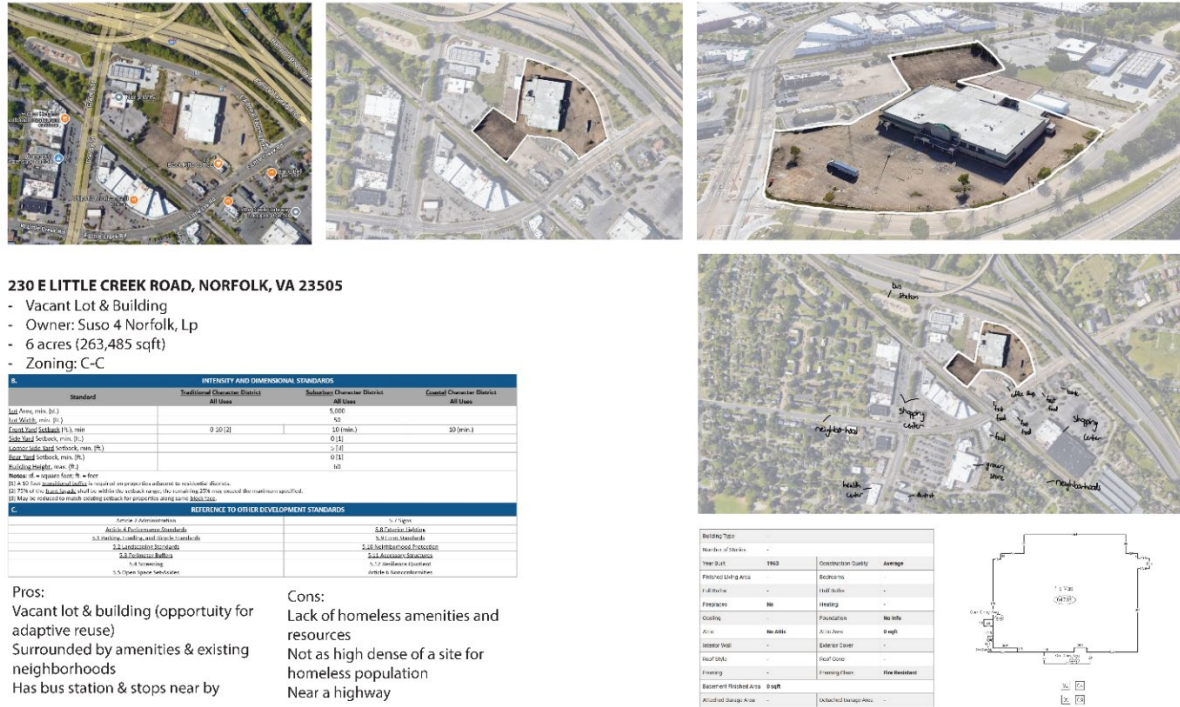


Fig. 6.1 – Site A Selection
 Boualy, Mary. November 2024.

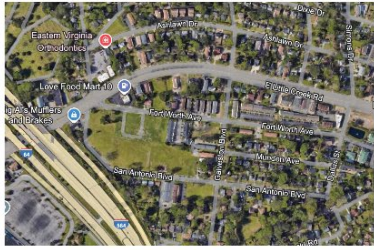
Regarding location, there are various advantages of Site A. Among these are the proximity to convenient amenities such as but not limited to shopping centers, grocery stores and bus stations. These features are decidedly on the plus side. However, it is situated near a highway, and while there are no homeless shelters nearby, there are several churches within a reasonable distance (Fig. 6.2). Despite the forgoing strengths, I did not go through with Site A. Its primary disadvantage is that it completely disregards connecting to the surrounding neighborhoods. The site feels disconnected, with commercial spaces split by the highway in a way that makes this place or community hard to establish. In terms of the proposed program, connection and activity tied to the surrounding context is important, and the spatial disconnection of Site A would make that exceedingly difficult.



Fig. 6.2 – Site A Diagrams Analysis
 Boualy, Mary. November 2024.

Site B Selection

Site B is a vacant plot of land at the corner of a residential neighborhood, only a short distance away from Site A (Fig. 6.3). It is similarly surrounded by established homes and is equally well-served with key amenities, including bus stops, a bus station, and several local services. The main difference, however, is that Site B feels more related to the existing neighborhood. It is not bisected by a large commercial zone and does not have the highway separated as there is a row of trees that buffer noise and create the feel of green space from the highway.



347 FORT WORTH AVENUE to 366 SAN ANTONIO BOULEVARD, NORFOLK, VA 23504

- Vacant Land (18 listed properties)
- Owner: City Of Norfolk & NRHA Vacant Land
- 6.68 acres (290,981 sqft)
- Zoning: MF-NS

INTEGRITY AND DIMENSIONAL STANDARDS						
Standard	Downtown or Traditional Character District					
	Single-Family	Single-Family Semi-Detached	Two-Family	Townhouse	Multi-Family	All Other Uses
Lot Area, min. (sq. ft.)	5,000 (1.18)	7,500 (1.71)	7,500 (1.71)	8,000 (1.81)	8,000 (1.81)	2,500 (0.57)
Lot Area, max. (sq. ft.)	N/A	1,000	1,000	2,000 (0.45)	100 (0.02)	N/A
Lot Width, min. (ft.)	30 (0.69)	30 (0.69)	30 (0.69)	30 (0.69)	30 (0.69)	20 (0.46)
Lot Width, min. (ft.) per lot(s)	N/A	25	25	30 (0.69)	N/A	N/A
Lot Width, min. (ft.) per lot(s) (2)	N/A	N/A	N/A	25	30 (0.69)	N/A
Front Yard Setback, min. (ft.)	5 (0.11)	5	5	5 (0.11)	5 (0.11)	5
Side Yard Setback, min. (ft.)	5 (0.11)	5 (0.11)	5 (0.11)	5 (0.11)	5 (0.11)	5 (0.11)
Front Yard Setback, min. (ft.)	5 (0.11)	5 (0.11)	5 (0.11)	5 (0.11)	5 (0.11)	5 (0.11)
Side Yard Setback, min. (ft.)	5 (0.11)	5 (0.11)	5 (0.11)	5 (0.11)	5 (0.11)	5 (0.11)
Maximum lot coverage (as % of lot)	50	50	50	50	50	50

Standard	Suburban or Classic Character District					All Other Uses
	Single-Family	Single-Family Semi-Detached	Two-Family	Townhouse	Multi-Family	
Lot Area, min. (sq. ft.)	5,000 (1.18)	7,500 (1.71)	7,500 (1.71)	8,000 (1.81)	8,000 (1.81)	2,500 (0.57)
Lot Area, max. (sq. ft.)	N/A	1,000	1,000	2,000 (0.45)	100 (0.02)	N/A
Lot Width, min. (ft.)	30 (0.69)	30 (0.69)	30 (0.69)	30 (0.69)	30 (0.69)	20 (0.46)
Lot Width, min. (ft.) per lot(s)	N/A	25	25	30 (0.69)	N/A	N/A
Lot Width, min. (ft.) per lot(s) (2)	N/A	N/A	N/A	25	30 (0.69)	N/A
Front Yard Setback, min. (ft.)	5 (0.11)	5	5	5 (0.11)	5 (0.11)	5
Side Yard Setback, min. (ft.)	5 (0.11)	5 (0.11)	5 (0.11)	5 (0.11)	5 (0.11)	5 (0.11)
Front Yard Setback, min. (ft.)	5 (0.11)	5 (0.11)	5 (0.11)	5 (0.11)	5 (0.11)	5 (0.11)
Side Yard Setback, min. (ft.)	5 (0.11)	5 (0.11)	5 (0.11)	5 (0.11)	5 (0.11)	5 (0.11)
Maximum lot coverage (as % of lot)	50	50	50	50	50	50



- Pros:**
- Vacant land
 - Surrounded by amenities & existing neighborhoods
 - Has bus station & stops near by

- Cons:**
- Lack of homeless amenities and resources
 - Not as high dense of a site for homeless population
 - Near a highway

Fig. 6.3 – Site B Selection
Boualy, Mary. November 2024.

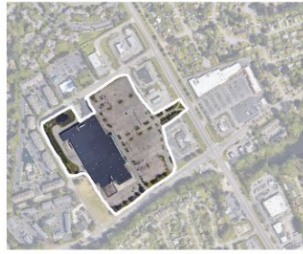
These provided reasons why Site B was the more desirable choice (Fig. 6.4). The location of Site B presents the opportunity to link a commercial area to surrounding neighborhoods, creating an exceptional sense of place. This integration makes Site B more inviting and integrative, allowing it to provide a space where the future users would be able to feel part of the community. As opposed to Site A, being isolated and hence secluded, Site B benefits from being part of an alive, accessible neighborhood with everything required in case of future development needs.



Fig. 6.4 – Site B Diagrams Analysis
 Boualy, Mary. November 2024.

Site C Selection

Site C was very vacant with a building abandoned similar to Site A, but larger in size. It is along the main road in Norfolk (Fig. 6.5). Across the street, an area has been zoned for shopping, grocery stores, and a health facility. Amenities are nearby, and the bus stops run down the main road for easy access to public transportation.



6205 N MILITARY HIGHWAY, NORFOLK, VA 23504

- Vacant Lot & Building
- Owner: Kroger Limited Partnership I
- 18.93 acres (824,549 sqft)
- Zoning: C-C

Standard	INTENSITY AND DIMENSIONAL STANDARDS		
	Traditional Character District	Suburban Character District	Coastal Character District
Lot Area, min. (sq.)	All Uses		
Lot Width, min. (ft.)	5,000		
Front Yard Setback, min. (ft.)	0-10 (2)	10 (min.)	10 (min.)
Side Yard Setback, min. (ft.)	0 (1)		
Corner Side Yard Setback, min. (ft.)	5 (3)		
Rear Yard Setback, min. (ft.)	0 (1)		
Building Height, max. (ft.)	60		

Notes: C = square feet; B = feet
 (1) A 10-foot transitional buffer is required on properties adjacent to residential districts.
 (2) 75% of the lot area shall be within the setback unless the remaining 25% may exceed the maximum specified.
 (3) They are reduced to match existing setbacks for properties abutting same block.

REFERENCE TO OTHER DEVELOPMENT STANDARDS	
Article 2 Administration	3.4 Signs
Article 3 Performance Standards	3.8 Accession Mitigation
3.1 Parking, Loading, and Heavy Standards	3.9 Storm Standards
3.2 Landscaping Standards	3.10 Neighborhood Protection
3.3 Performance Buffers	3.11 Accession Mitigation
3.4 Screening	3.12 Accession to Adjacent
3.5 Open Space Set-Asides	Article 6 Nonconformities



Pros:
 Vacant lot & building (opportunity for adaptive reuse)
 Surrounded by amenities & existing neighborhoods
 Has bus station & bus stops near by

Cons:
 Lack of homeless amenities and resources
 Not as high dense of a site for homeless population
 Near a highway

Fig. 6.5 – Site C Selection
 Boualy, Mary. November 2024.

However, regarding site criteria and program comparisons, Site C presents many of the same concerns as Site A (Fig. 6.6). For one, there is a clear delineation between commercial versus surrounding residential neighborhoods; secondly, like Site A, there are no services for the homeless within close walking proximity. The immediate vicinity is made up of single-family houses. This could make it tough if we needed to provide another type of housing in the area, as anything new would be perceived to be out of place. Creation of community would also be difficult here, with this site being hard to connect into the neighborhood immediately surrounding it. It would be quite exhausting to integrate it physically and socially in the current context; therefore, Site C is not the best option for the proposed program.

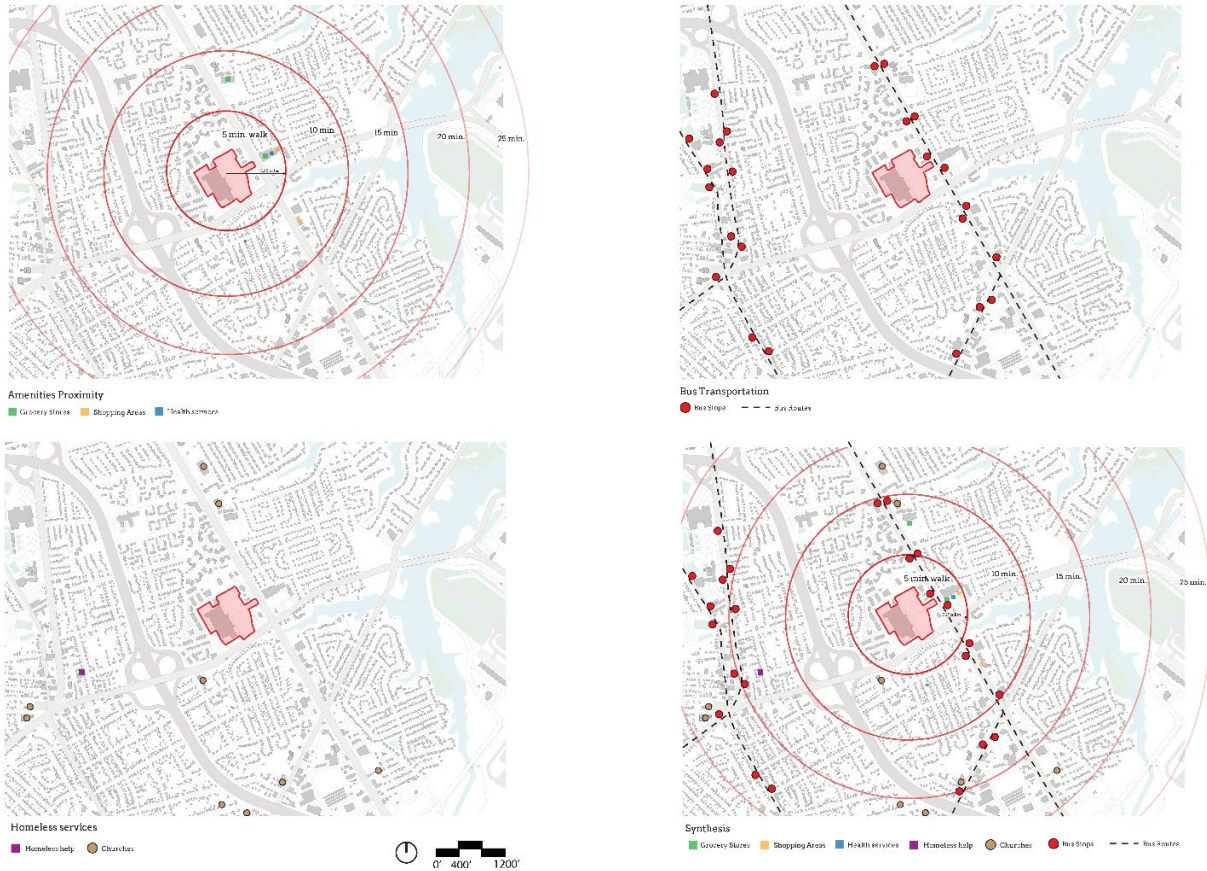


Fig. 6.6 – Site C Diagrams Analysis
Boualy, Mary. November 2024.

Site D Selection

Site D is an open corner lot situated in the southern part of Norfolk near downtown, where the population of homeless people is larger (Fig. 6.7). There is a homeless shelter just across the street from it, and to the left of the site is a health and rehabilitation center, making this location favorable in terms of access to critical services. Unlike the other places, Site D does not possess certain basic facilities: grocery stores, shopping areas. Most of the establishments in its periphery are made up of storage buildings and factory spaces, rather than businesses or services that would meet the daily needs of the possible clients of the proposed program. This is a big limitation when comparing it to the goals and criteria of the project.



2600 E PRINCESS ANNE ROAD, NORFOLK, VA 23504
 - Vacant Land
 - Owner: NRHA Vacant Land
 - 4.44 acres (193,353 sqft)
 - Zoning: C-C

B. INTENSITY AND DIMENSIONAL STANDARDS			
Standard	Traditional Character District All Uses	Suburban Character District All Uses	Coastal Character District All Uses
Lot Area, min. (sf)		5,000	
Lot Width, min. (ft.)		50	
Front Yard Setback (ft.), min	0-10 [2]	10 (min.)	10 (min.)
Side Yard Setback, min. (ft.)		0 [1]	
Corner Side Yard Setback, min. (ft.)		5 [3]	
Rear Yard Setback, min. (ft.)		0 [1]	
Building Height, max. (ft.)		60	

Notes: (1) = square feet; (ft.) = feet
 [1] A 10-foot open space buffer is required on properties adjacent to residential districts.
 [2] 75% of the front facade shall be within the setback range; the remaining 25% may exceed the maximum specified.
 [3] Must be retained to match zoning setback for properties along same block face.

C. REFERENCE TO OTHER DEVELOPMENT STANDARDS			
Article 2 Administration			3.7 Signs
Article 4 Performance Standards			3.8 Exterior Lighting
5.1 Parking, Loading, and Storage Standards			5.8 Plans Standards
5.2 Landscaping Standards			5.10 Neighborhood Restoration
5.3 Perimeter Buffers			5.11 Accessory Structures
5.4 Screening			5.12 Amenity Counters
5.5 Open Space Set Aides			Article 6 Nonconformities



Pros:
 Vacant lot
 Surrounded by homeless amenities & resources & existing neighborhoods
 Has bus stops nearby
 Corner site & dense homeless populations

Cons:
 Lack of grocery stores nearby & other amenities

Fig. 6.7 – Site D Selection
 Boualy, Mary. November 2024.

Although Site D does have the advantage of being proximate to downtown, and therefore better served by public transportation, this advantage is overcome by the simple fact that there are no amenities near it (Fig. 6.8). Quite obviously, without grocery stores, shopping areas, and other basic service facilities within walking distance, serving the basic needs of the homeless using the facility would be exceedingly difficult. This constitutes a significant barrier, for which reason Site D was ruled out for the project.

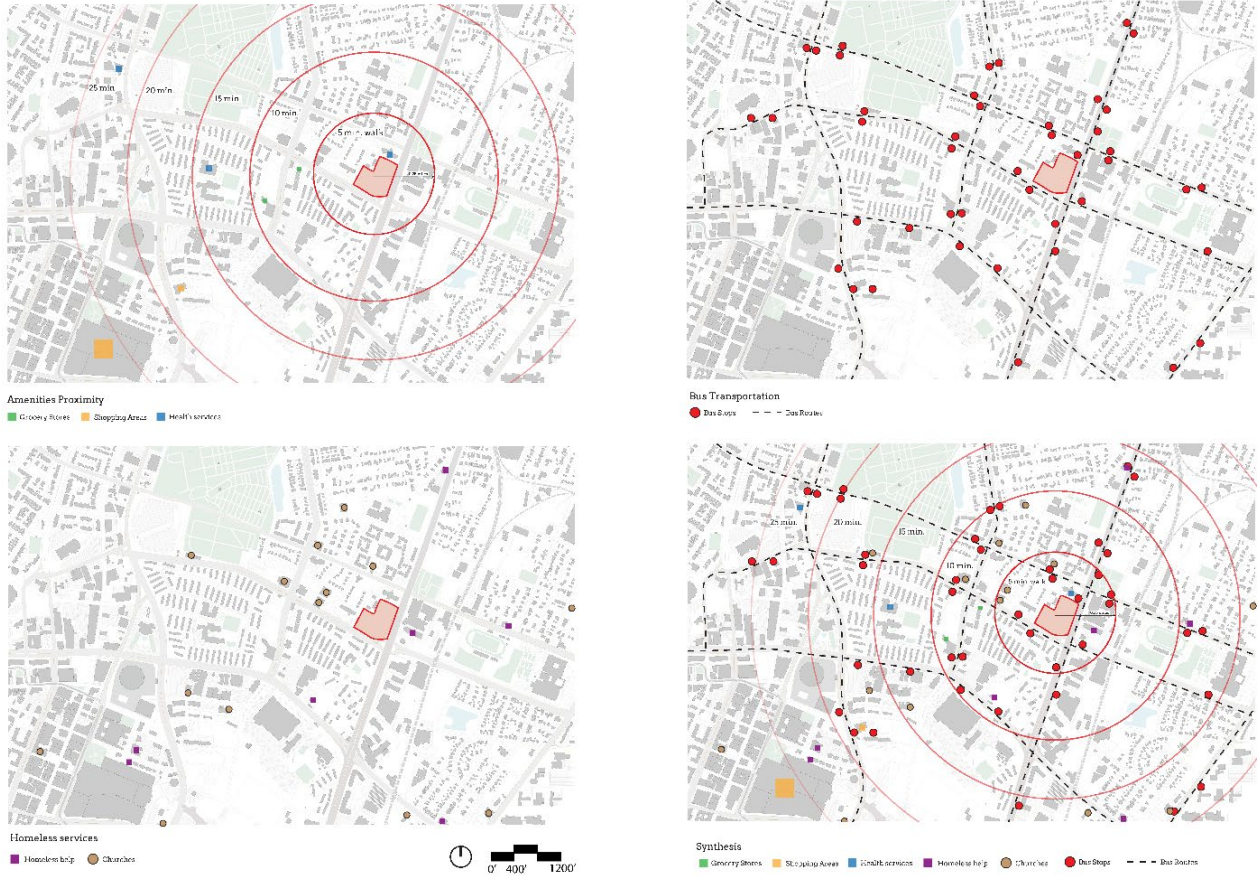


Fig. 6.8 – Site D Diagram Analysis
 Boualy, Mary. November 2024.

Site Selection Conclusion

The site selection analysis for potential development in Norfolk, Virginia, looked at four distinct locations, weighing factors like access to amenities, transportation, and the ability to connect with surrounding communities (Fig. 6.9). Of the options, Site B stood out as the best choice. Well-positioned near established residential neighborhoods, key services, and public transportation make this area the most convenient and practical. What really differentiates Site B, however, is its actual potential to function as a catalyst in connecting commercial areas to neighborhood areas for the creation of place in a way consistent with program goals. This community connection is of prime importance to having the future users be active and supported in their endeavors, thus being an ideal fit for inclusiveness.

Relatively speaking, the other sites had various drawbacks that would make connecting them with the community so much more difficult. Site A was disconnected, lying as it does next to a highway, which would make integration with the surrounding neighborhoods difficult. Site C, while within walking distance to amenities, was isolated from residential areas, and without homeless services anywhere in its vicinity, further lessened its effectiveness. While Site D was located near several key services, it lacked some general amenities, and the surroundings consisted of industrial spaces; thus, any users in its future would have rather poor access to basic services.

The strong ties Site B has to its neighborhood, access to vital services, and the ability to integrate into the broader community the best position it for the proposed program. This will provide the avenue to best serve the homeless population of Norfolk with a connected, thriving space.

SITE MATRIX				
Site Criteria & Site	Site A	Site B	Site C	Site D
Density of homelessness	2	3	4	1
Zoning	3	1	4	2
Transportation access	2	3	4	1
Close proximity to amenities	1	2	3	4
Potential for community integration and safety	1	1	4	3
Use of vacant lots/lands and/or abandoned buildings	2	1	3	4

KEY: 1= Most Ideal 4 = Less Ideal

Fig. 6.9 – Site Selection Matrix
 Boualy, Mary. November 2024.

Chapter 7: Discovery Phase - Conceptual Testing

Site Analysis

Analysis of the selected site will be important to understand the characteristics of the site and inform the design process. First, I analyzed the existing conditions to understand what is there and what was there. Historically, the site was home to public housing built in 1972. By 2011, both the city and the residents recognized the area as being prone to crime and unsafe, which led to the first round of demolitions (Fig.7.1). The demolition process was completed in 2015, leaving the site as vacant land currently owned by the City of Norfolk and the Norfolk Redevelopment and Housing Authority (NRHA). The site is now made up of eighteen vacant properties, totaling 6.68 acres.



Fig. 7.1 – Demo of previous existing site
Taylor, Doris. Demolition of crime-ridden apartments brings a new era to Wards Corner. 2012.

Following my research into the site's history, I analyzed the land use around the site. The site is mostly surrounded by residential buildings, which include single-family homes and multi-family structures. The proximity to shopping areas, grocery stores, bus stations, and health services adds to the site's accessibility. Zoning regulations also played a part in my analysis. It has been identified that the site is located within a Multi-Family Neighborhood Scale zone, which has specific building height, unit size, and other requirements. Additionally, I analyzed the site's mobility in relation to its surrounding context. The infrastructure is well-developed; for example, the nearest grocery store is a ten-minute walk away (Fig.7.2).

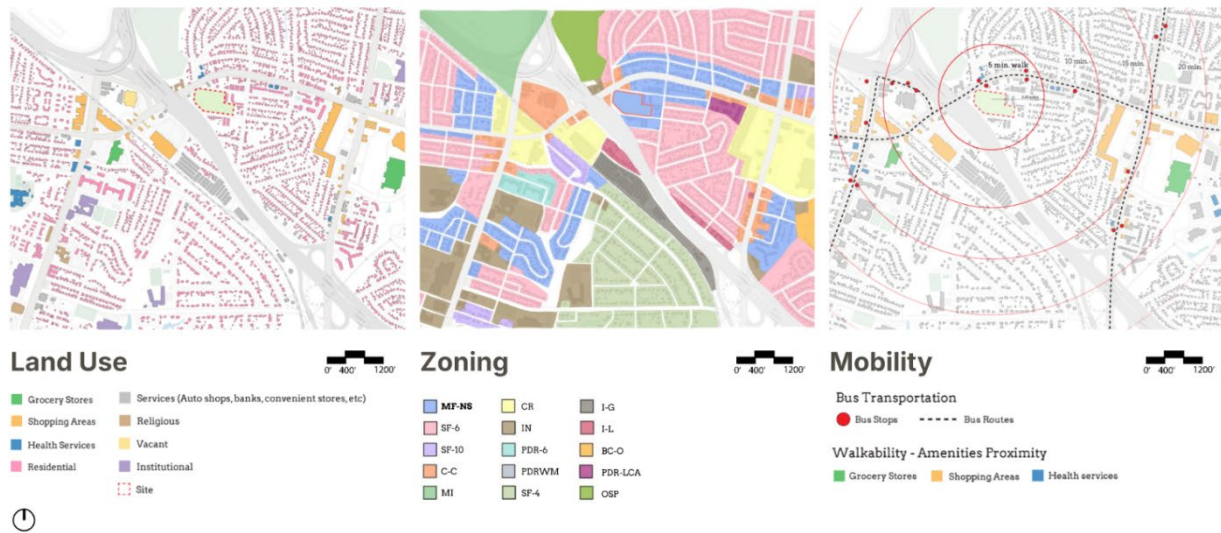


Fig. 7.2 – Land Use, Zoning and Mobility Diagram
Boualy, Mary. December 2024.

It was also necessary to study the topography of the site. The land itself is quite flat; however, it falls within a flood area that also includes a flood intersection. This must be taken into consideration for design. Also, studies of the sun path gave vital information about how massing buildings could be arranged to achieve maximum sunlight. This understanding will thus

apply to the strategic placement for the enhancement of energy use in the site and usability by people (Fig.7.3).

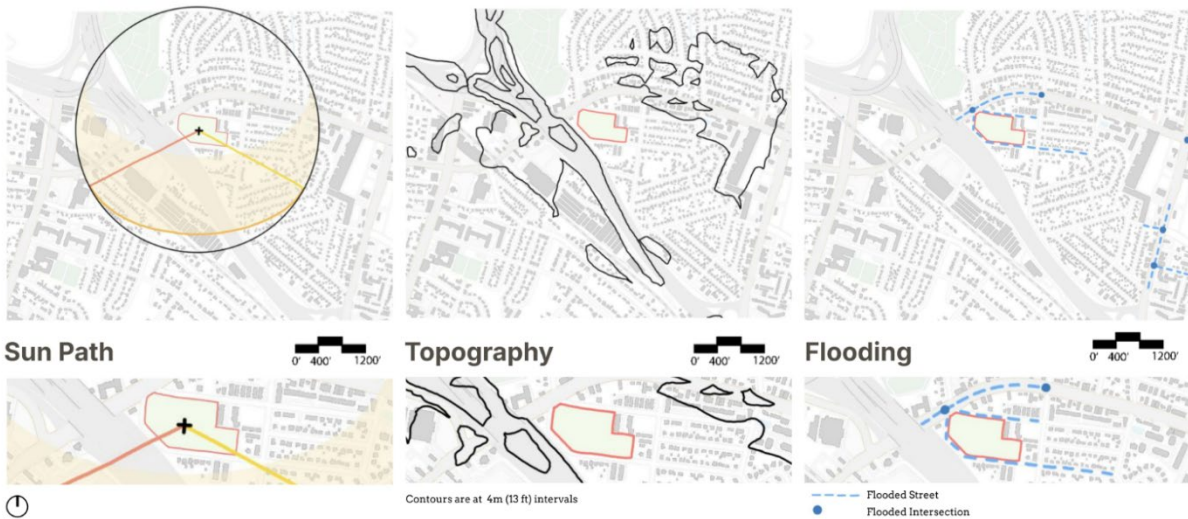


Fig. 7.3 – Sun Path, Topography and Flooding Diagram
Boualy, Mary. December 2024.

This overall site analysis has helped in the design process. Historical context, land use, zoning requirements, mobility, topography, and sun path all combined to inform and guide the design decisions. By carefully considering these factors, I strive to make a design that will be responsive not only to practical site needs but also to foster a sense of place and connectivity (Fig.7.4). The goal is that the site becomes much more than a physical space; it should be a vibrant, integrated part of the surrounding community. Thoughtful consideration of these numerous factors will ensure the design is responsive to both challenges and opportunities of the site, helping to create a meaningful and lasting impact.

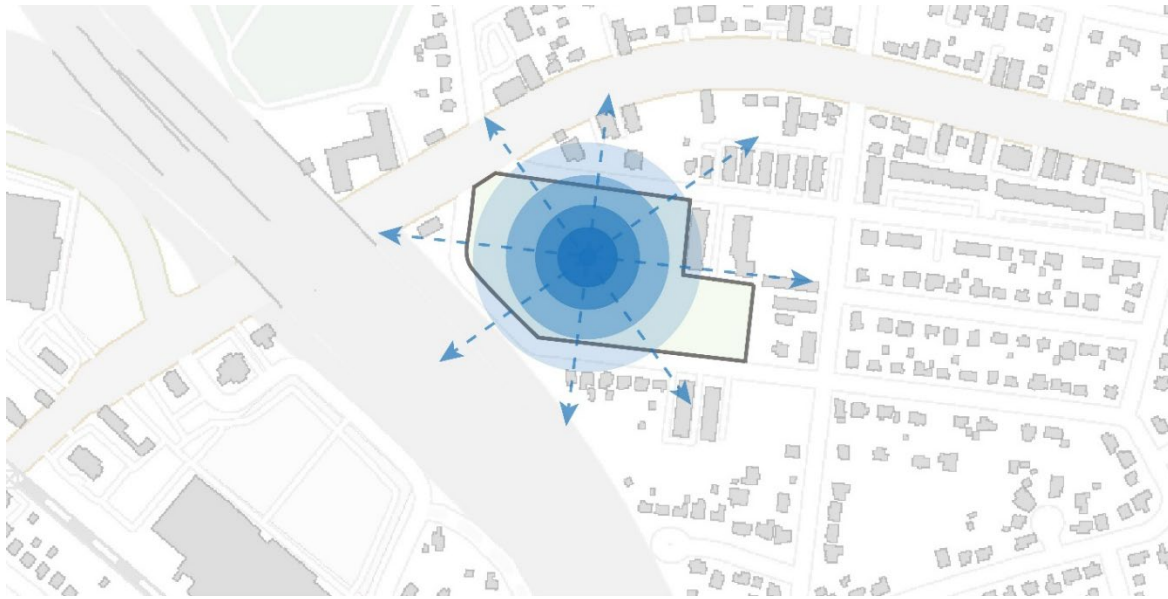


Fig. 7.4 – Parti/Concept: Creating a sense of place and connectivity
Boualy, Mary. December 2024.

Design Scheme 1

The primary design driver with this scheme is using the building massing to address site street edge conditions. The building was placed on the left side of the site, as this created a buffer to the highway and residential area behind. This minimizes highway noise and lessens the traffic impact, besides extending part of the site. This area, however, cannot be fully utilized because of the flooded intersection and streets, although it does provide space for bioretention features that add to the environmental sustainability of the site through stormwater management.

The design clearly separates the functions of the building: the bar-shaped buildings are for residential spaces, offering a private, comfortable environment, while the building facing the highway is for amenities and services, serving a more public role (Fig.7.5). This maintains functional separation with integration between the residential and public space.

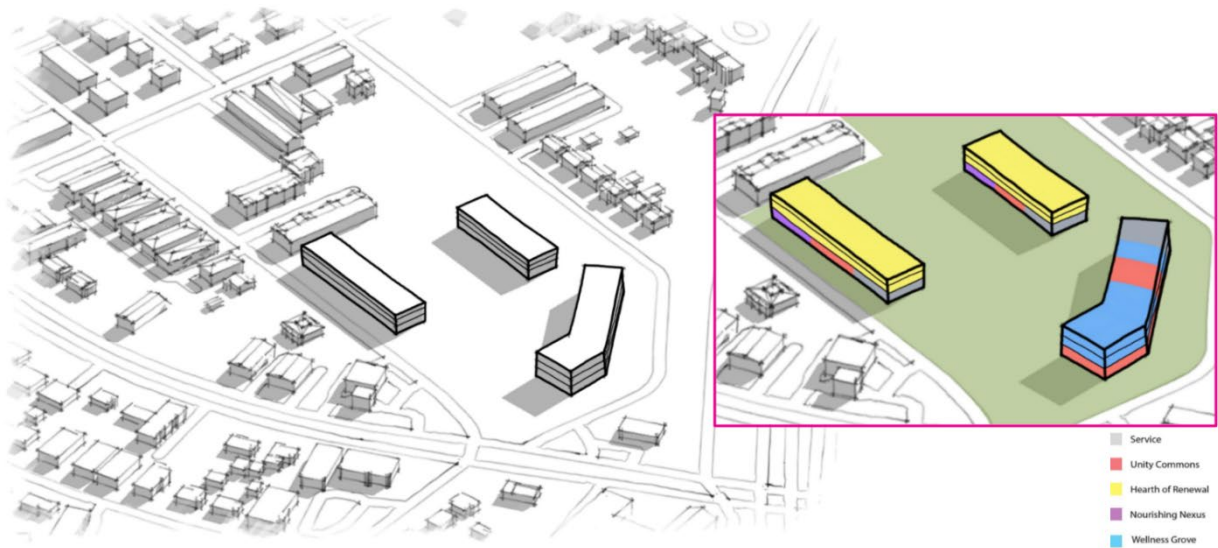


Fig. 7.5 – Massing and program of Scheme 1 in context in Axon. 3D view
 Boualy, Mary. December 2024.

The landscape design is still conceptual, with many ideas in flux due to limited site understanding. However, the design's underlying goals of creating a sense of place and promoting connectivity guided my early steps: public spaces are integrated within the building forms to foster cohesion within the site.

I had a central urban plaza for homeless residents, an upper left bioretention area, and a much larger public green space on the lower right of the property that was freely accessible to visitors and residents. These landscape elements have the purpose of linking the built environment with nature to create relationships between spaces and their users (Fig.7.6).



Fig. 7.6 – Plan view and potential landscape view of Scheme 1
Boualy, Mary. December 2024.

This initial design helped in understanding how to connect people and spaces through massing and forms, highlighting the potential of landscape development in urban areas. Reasonable as it may be this design needs further refinement. The goal of creating a cohesive "kit of parts" and a true sense of place has not been fully realized. Although the design shows promise, there is room for improvement in integrating the landscape and building form for a more unified and functional space. This first design pass provides a solid foundation for further development.

Design Scheme 2

This design iteration is an advancement of the initial concept, as it continues to focus on solving the street edge condition with the use of two larger massing (Fig.7.7). In this updated scheme, the L-shaped building is designed specifically to house the homeless population, while the skewed building on the left side of the site provides services and amenities for the same community. The skewed building is oriented intentionally to the highway to function as a buffer, defining the edge of the site and minimizing the impact of the highway to the surroundings. This

placement creates an invitation and accessibility from the highway into the neighborhood, softening the boundary between the two. It also allows space in the top left of the site for possible bioretention areas that would be a significant factor in stormwater management, given the tendency of the area to flood upon heavy rainfall.

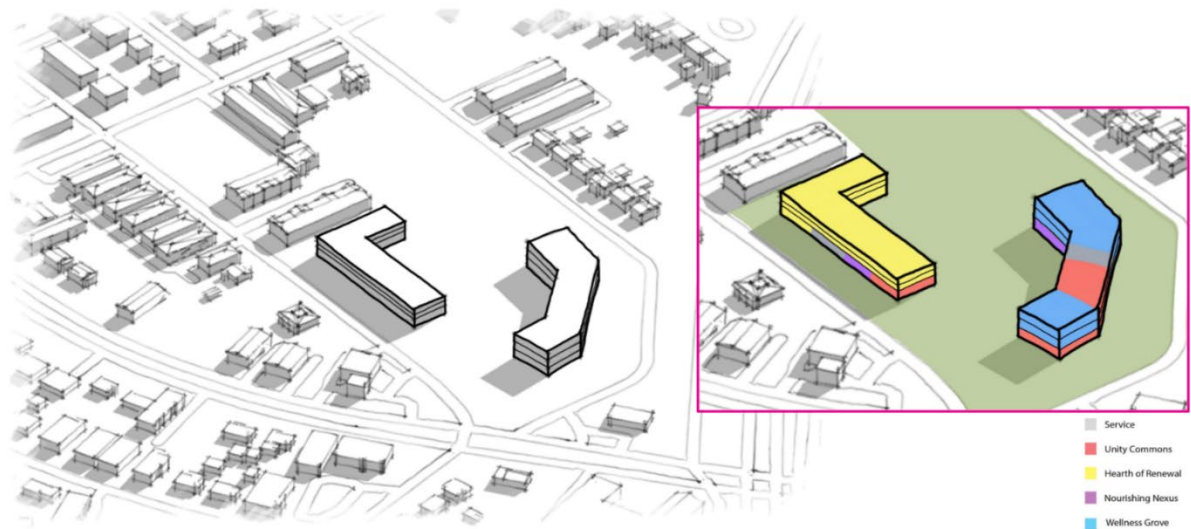


Fig. 7.7 – Massing and program of Scheme 2 in context in Axon. 3D view
Boualy, Mary. December 2024.

At this stage, the landscape design remains quite flexible, while I am still refining my understanding of the site and its specific conditions. My intention, however, is to have it as one dynamic, interlinked space wherein buildings will be interrelated to each other and to the environment. In this manner, the central plaza between these two buildings was supposed to become a center that drew people into sociable activity, establishing one big community. A few paths cut across it and make the message of interconnectedness even deeper. All these features

let this very public space function as the inviting place it should be for residents and guests alike, with direct access to an area they can share together (Fig.7.8).

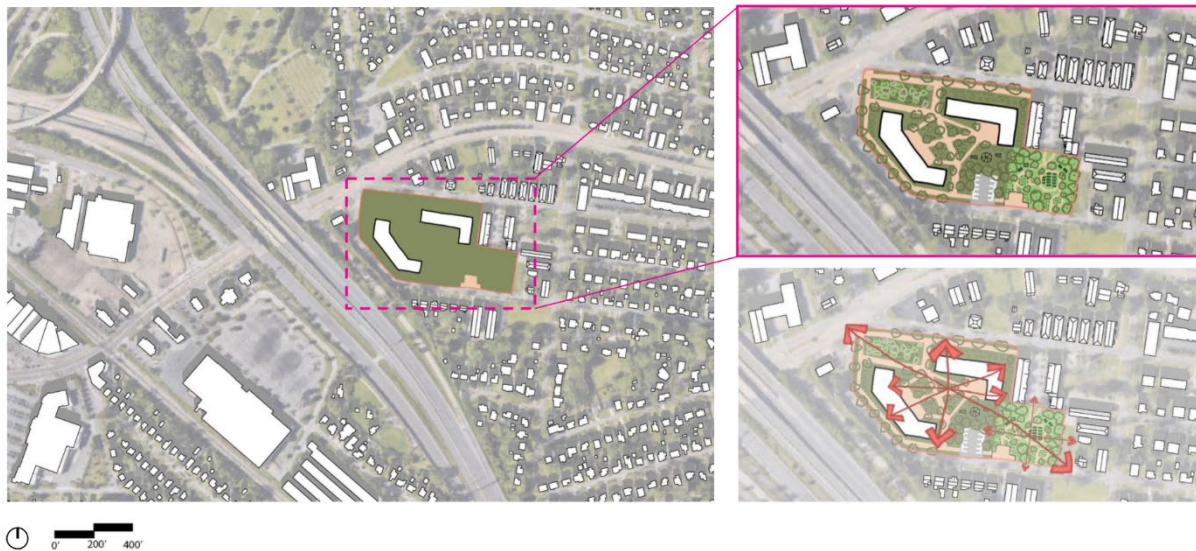


Fig. 7.8– Plan view and potential landscape view of Scheme 2
Boualy, Mary. December 2024.

Upon this iteration, I reflected that these larger massing integrated a lot less into the greater neighborhood context than the more medium-scale design shown in my initial concept. The building size and scale of the buildings fell disproportionately greater and inconsistent to a more intimate, residential-like character and seemed disconnected to the surroundings. This was a concern for long-term adaptability with design, as larger buildings leave less room for flexibility and adjustments in the future. In a neighborhood-scale project, the ability to adapt to changing needs over time is especially important, and large scales of buildings could restrict that flexibility.

Despite this, this iteration was valuable for exploring how larger massing could affect functionality and the overall integration of the site. While the design was promising, it was determined that the larger scale of the buildings is not ideal for this type of community-oriented project. This iteration taught the importance of balancing building massing with the scale and

context of the surrounding area, while designing for adaptability for any future changes. It served to reinforce the importance of refining the massing and design approach for a harmonious, flexible, community-focused environment through this iteration.

Design Scheme 3

Building on the lesson learned from Design Schemes 1 and 2, together with the site analysis, this iteration strengthens the ideas and insights gathered so far. Instead of the medium or large-scale building construction in previous designs, this approach focuses on building small-scale buildings that are nearer in size and form to the already existing context (Fig.7.9). The design uses simple rectangular buildings for residential living and a small service and amenities building that also serves as a shield from the highway. This design again allows the left upper portion of the space to be used for flooding from the streets and intersections, should heavy rain occur.

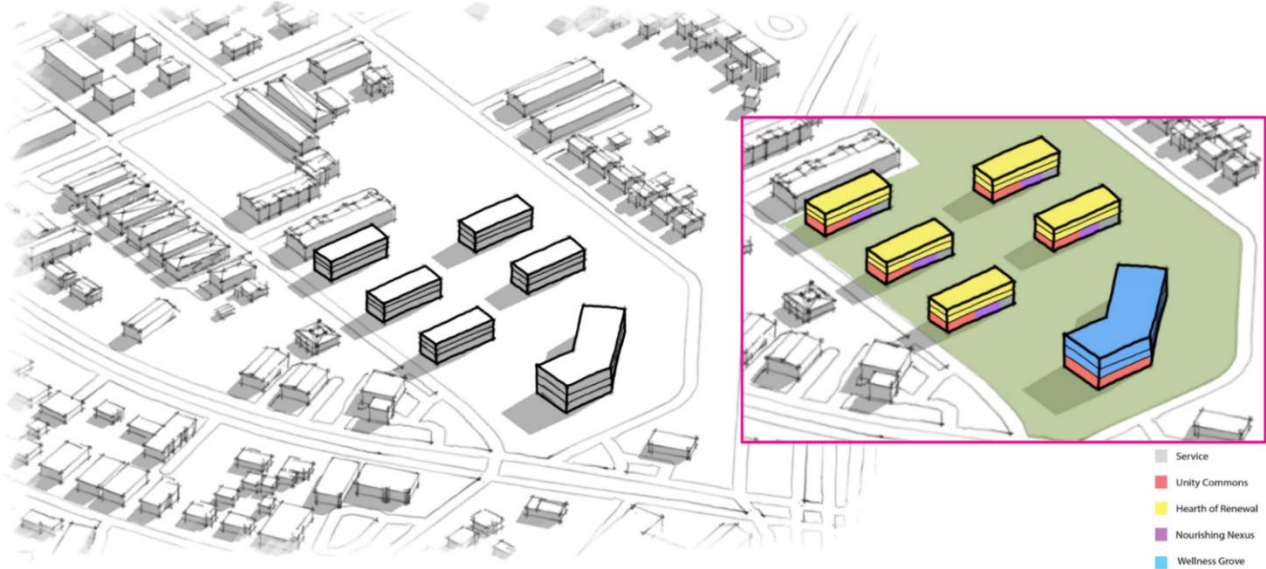


Fig. 7.9 – Massing and program of Scheme 3 in context in Axon. 3D view
Boualy, Mary. December 2024.

Landscape design remains flexible, yet an initial concept has been made to create a central free area among the residential houses. The layout positions smaller rectangular buildings in a scattered arrangement, allowing more variation in views from each block, while maximizing open spaces across the site. This scattered residential arrangement provides more openness, but it creates a natural flow through the site to connect better, building up a sense of place for the future residents (Fig.7.10). It also helps integrate outdoor spaces into residential areas and promotes cohesion between the built environment and the natural surroundings.



Fig. 7.10– Plan view and potential landscape view of Scheme 3
Boualy, Mary. December 2024.

Smaller in scale, one of the key strengths of this iteration is its ability to integrate much more seamlessly into the surrounding neighborhood context. The flexibility of these smaller buildings allows for greater adaptability, which is incredibly important when considering the potential for future development of this site. This scale would allow the development of the site in phases over time, which is easier to adapt and expand as needs change. The design can also adapt within the building to accommodate changing demographics at some point in the population of homeless people. Such a design can be manipulated to allow future changes about

shifting demographics among the homeless—for example, changing a family residential unit into a two-bedroom unit over time. This level of flexibility will provide the possibility to change and improve the site in response to changing needs and conditions—an important ingredient in long-term urban planning.

Overall, this iteration is more thoughtful in terms of scale and flexibility, creating a design that responds to the site's context while allowing for adaptability in the future. The integration of smaller buildings, more open spaces, and flexible design elements ensures that the space can be both functional and responsive to the changing needs of the community.

Conclusion

This, therefore, concludes the design process, which has really evolved through the exploration of a variety of schemes, with each one informed by lessons learned from previous iterations. Site analysis has been fundamental in shaping a design that not only responds to challenges but also embraces opportunities provided by its context. These insights were derived from an analysis of historical conditions, surrounding land use, zoning regulations, topography, and sun path and have been used to develop a functional design that is integrated into the community.

Design Scheme 3, the most refined, uses small-scale buildings that mostly align with the existing neighborhood context. These will be low-rise buildings that should leave a good amount of room to work out future needs or adjust with demographic shifts. Community design is responsible for existing conditions yet allows for growth or adaptation in the long-term through strategic building placement, opening space integration, and through strategic on-site stormwater management strategies.

Moving forward, the next steps will involve further development and refinement of Design Scheme 3, including going into the finer details of landscape design, which is especially important regarding the central open space that connects the residential units and fosters a sense of community. After that, the possibility of phased development will be considered to create a site that can grow and evolve through time in response to evolving needs on the part of homeless people. The design will be flexible, starting from the way the buildings are configured down to spatial organization, for the development to remain adaptive to future challenges.

Drawing from the results of the site analysis along with previous design iterations, the next step will attempt to lock in a clear, flexible, community-centric design that certifies both near-term needs while offering long-term positive impacts on the surrounding neighborhood. Success for the project, in both immediate implementation and long-term sustainability, depends on this next step.

Chapter 8: Conclusion – Thesis Design Solution

Revisiting Design Intent

This thesis explored how architecture can effectively address the urgent issues of affordable housing and homelessness through the design of a prefabricated kit-of-parts system. Low-cost, deployable, and adaptive, the system is a scalable solution to the site condition diversity and community needs variety. And more than shelter, the architecture projects an image of permanence and dignity—cornerstones to the establishment of environments that foster stability, autonomy, and long-term reintegration into society.

Through the marrying of modular design and mindful planning, the proposal accommodates both private and communal requirements with respect for human values of privacy, security, and community. The system illustrates that architectural innovation can be technically successful as well as socially worthy and offers a paradigm for cities seeking inclusive urban dwelling solutions. Lastly, the study demonstrates that architecture is not only able to house but can revive lives and restore connections to the broader urban community.

Design Process + Development

The design process was guided by cross-disciplinary research, precedent study, user experience design, and urban analysis. The process began with an investigation of the socio-political nature of homelessness, the examination of existing shelter systems, and identifying the shortcomings of conventional affordable housing. These results led to the creation of a prefabricated kit-of-parts system based on modularity, replicability, and deployability. By iterative prototyping and space testing, the system emerged as a robust yet adaptive architectural solution that could accommodate heterogeneous user requirements and site conditions.

It was an iterative and exploratory design process with continuous testing, feedback, and iteration (Fig. 8.1). Early design phases engaged with conceptual models that resisted common housing forms and altered the way space could better address evolving needs of its occupants. The piece evaluated modular configurations, expanding unit shapes, and packaging infrastructure into a system that could reconfigure. Most significant to the process was establishing a relationship between in and out, using threshold and boundary as a means of producing feelings of safety, openness, and privacy - most importantly for those working with trauma or displacement. Concepts of open and closed, physical and social emerged at the core of how private and public space was understood within the system.

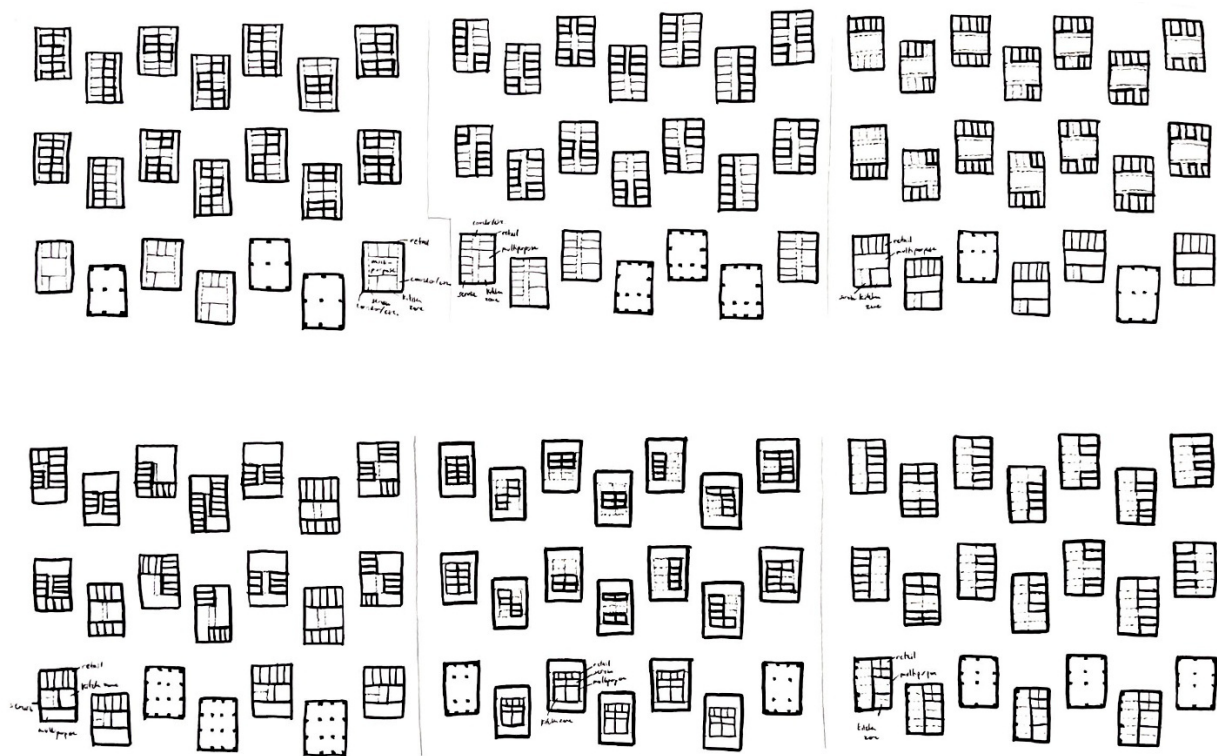


Fig. 8.1– Process drawings of open and closed spaces in different variation layouts
Boualy, Mary. February 2025.

Each element was determined as part of an overarching architectural logic, not as independent components but as components in an adaptive, reorganizable network. The kit-of-

parts were arranged with clear assembly rules, integration of infrastructure, and spatial sequencing so that flexibility could be directed toward urban and programmatic conditions while consistency and efficiency were guaranteed. Along the way, there was an ongoing give-and-take with repeated iteration of the design to balance technical effectiveness, human-scale comfort, and architectural integrity. As a result, there is a system that achieves the applied housing need while restoring stability, agency, and sense of belonging - rendering the proposal from abstract idea to meaningful architectural intervention.

Final Design Strategies + Site Plan

The final design employs a range of architectural devices in a balance of functionality and human dignity. Modularity was central, with the ability to reorient housing units to meet changes in site size and community needs. Each component was designed to require minimal prefabrication and rapid on-site assembly to minimize construction time and labor costs. Durable, environmentally sensitive materials were used, and spatial planning was resolved to create privacy versus communal contact. Cumulatively, these tactics create an architecture that expresses permanence and the flexibility necessary to accommodate transitional populations.

The building itself is significant to the design, with it serving as a vehicle for social and architectural integration. More than being a passive context, it draws homeless users and the wider community into a cohesive context through thoughtful massing and landscape (Fig. 8.2). The location is focused on a highway-side community building that is a noise barrier, entrance, and central hub with public programs like a library, meeting spaces, and event spaces like farmers' markets. Residential massing splits into two halves—one for the men, the other for the women and families—designed to portray different user needs. Houses are spaced to create semi-private courtyards, generating privacy, safety, and daylight outdoor space.



Fig. 8.2– Parti – showing connectivity, site strategies, buildings, and layout
Boualy, Mary. May 2025.

A public landscape corridor that stretches from the community building to an adjacent existing playground ties the site together, making it connected (Fig. 8.3). The green spine weaves public and semi-private spaces, such as community gardens, outdoor classrooms, and flexible spaces for gathering that provide space for food production and education programs. Resident and public users have access to both spaces, which promote engagement, reduce loneliness, and support the project's objective of reconnection. Every aspect of the design—programmatic, landscape, and architectural—was carefully developed to eliminate the stigma of homelessness and create a socially cohesive environment in which individuals can reassert stability, agency, and belonging.



Fig. 8.3– Site plan showing ground floors of building
Boualy, Mary. May 2025.

Site Integration + Planning

The location chosen is critical to the success of the design proposition. Located in an inner-city setting where work opportunities, social facilities, and public transport are easily accessible, the location chosen was picked for the ability to promote social integration over seclusion. The system was created to be adaptive and considerate of the existing urban environment while enabling new levels of social contact and exposure. Landscape elements, shared space, and pedestrian-friendly walk-through corridors were integrated into the site plan to produce a sense of community and enhance interaction with the community.

The architectural system that was developed for this project was specifically created to respond to the physical and social site conditions. The creation of a tough, fixed ground floor constructed using concrete was one of the primary design strategies (Fig. 8.4). This concrete core is a symbol of strength and stability, both a physical and metaphorical base for the reconstruction

of the community. This ground floor is composed of two large "outdoor" rooms on either side of a central circulation core, which are clad in flexible Nana walls. The operable glass walls allow the space to be open or subdivided into smaller, adaptable rooms depending upon the users' programmatic needs. By strategically arranging columns and Nana wall panels, the open floor plan was made dynamic and flexible—one that can serve classrooms, workshops, lounges, or wellness spaces as the need arises (Fig. 8.5).

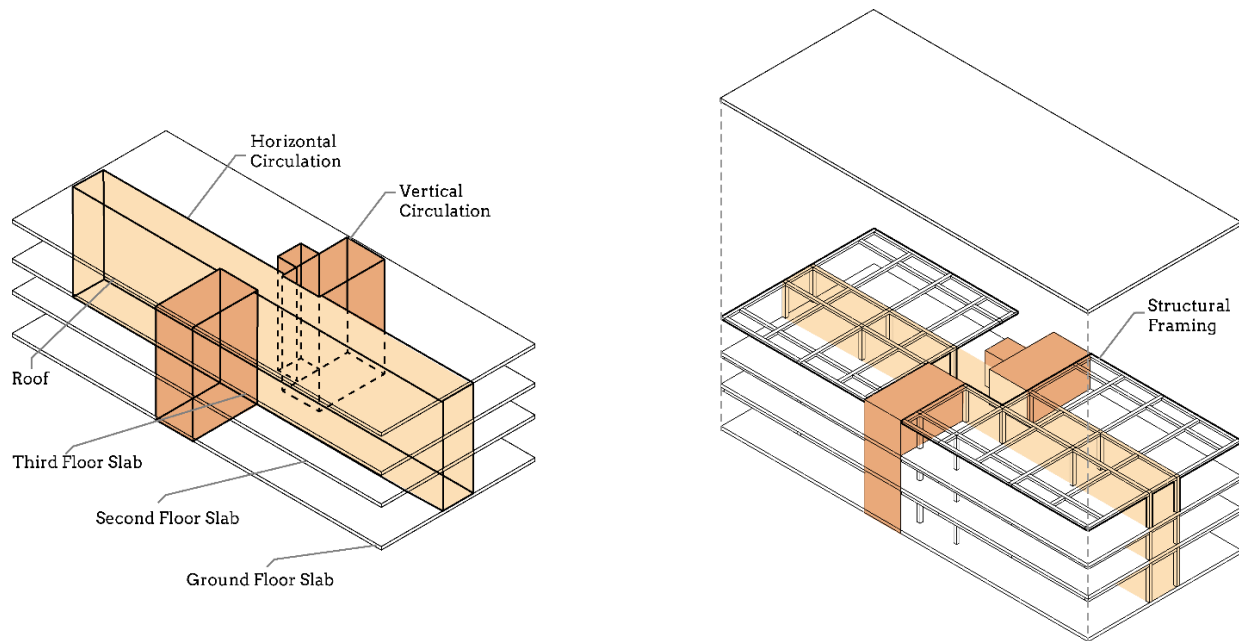


Fig. 8.4— Building axonometric highlighting circulation, the core, structure and grid
Boualy, Mary. May 2025.

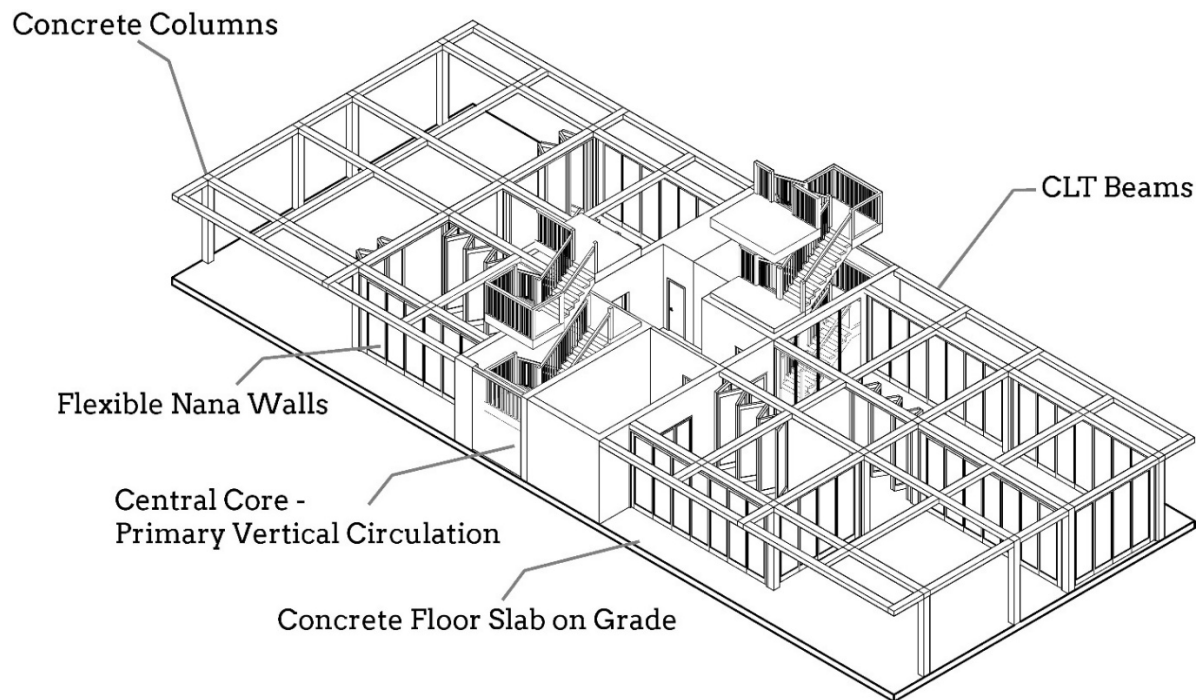


Fig. 8.5– Building axonometric highlighting ground floor & components
 Boualy, Mary. May 2025.

The construction of this solid ground plane also informed the design of the upper floors, which are constructed with lighter prefabricated materials to express adaptability and flexibility (Fig. 8.6). This variation of material throughout levels yet again emphasizes the architectural message: stability below, potential above. Structurally, the entire building system was designed to be constructed at the same time such that all floors across the site will be constructed up to three stories. This approach has uniformity across the development and utilizes the most construction time and efficiency. As a result, the building not only physically and functionally becomes part of the site, but also conveys a multi-layered message about grounding, growth, and potential for upward movement—a metaphor for the journey from housing insecurity to reintegration and stability.

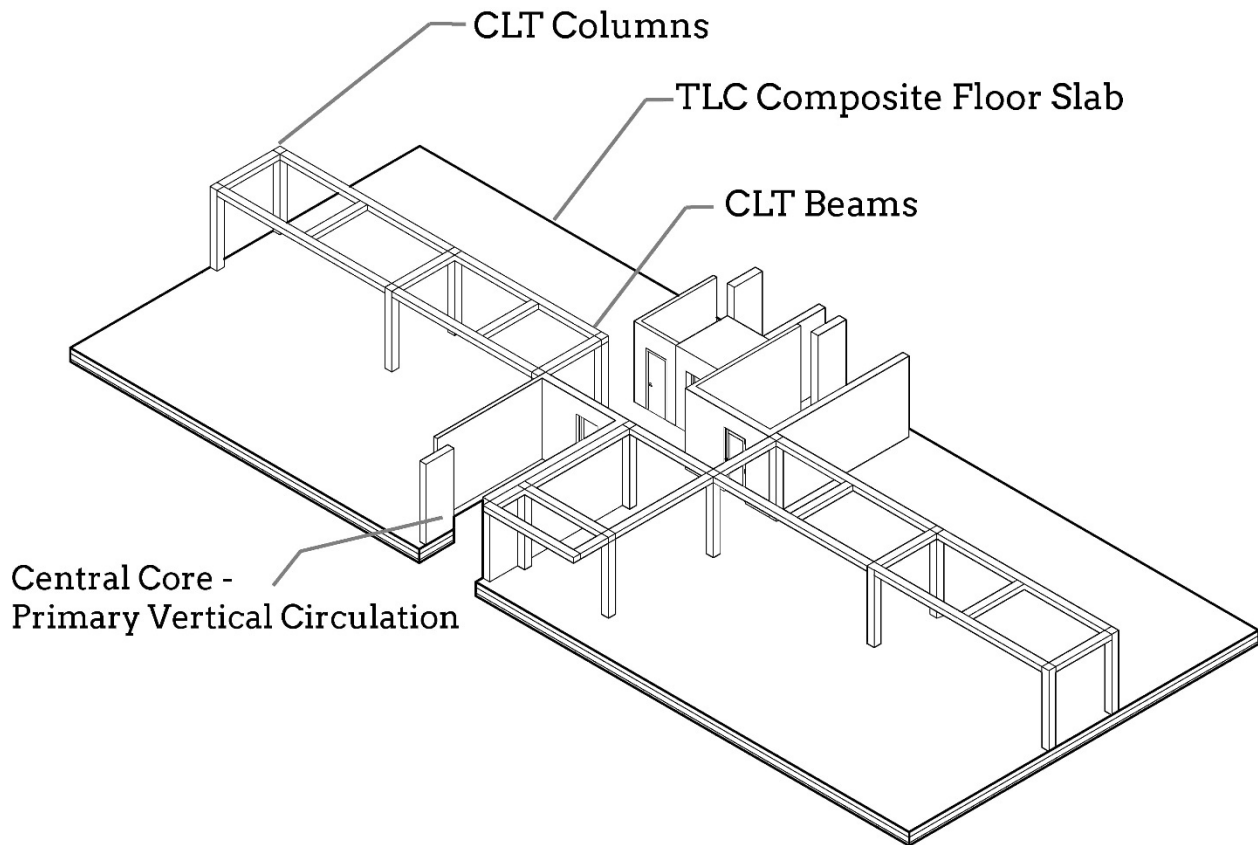


Fig. 8.6– Building axonometric highlighting typical residential floor & components
 Boualy, Mary. May 2025.

Spatial Experience + Human Impact

The building's design centered on an integrated human experience. Recognizing that housing is both a physical and psychological/emotional necessity, the design centered on comfort, safety, and uniqueness. Elements of natural light, cross-ventilation, and private spaces were included in the unit plans carefully to promote mental and physical well-being. At the same time, common spaces shared among all residents—kitchens, gardens, lounges, and community spaces—were designed to promote social ties, counteract alienation, and generate interpersonal support networks essential for long-term recovery and reintegrative success.

The residential units are fabricated off-site as a panelized off-site manufactured system that is transported in and installed on-site with efficiency and minimal disruption. The modular

system can support three types of units - studio, one-bedroom, and two-bedroom - to suit diverse types of household configuration and stages of life (Fig. 8.7). The modular system also incorporates flexibility so that openings in the placement of units can be bridged with amenity pods when residential space is not needed in certain areas. The pods can carry shared spaces such as communal areas, study areas, or counseling rooms - another twist on enhancing the environment for residents. The facades of the units are shaded by a responsive louver system, made up of floor-to-ceiling horizontal and vertical partitions. Adjustable louvers react to sunlight orientation and individual choice and create an animated, expressive facade that is private yet user-controlled - a contribution to environmental comfort and psychological empowerment.

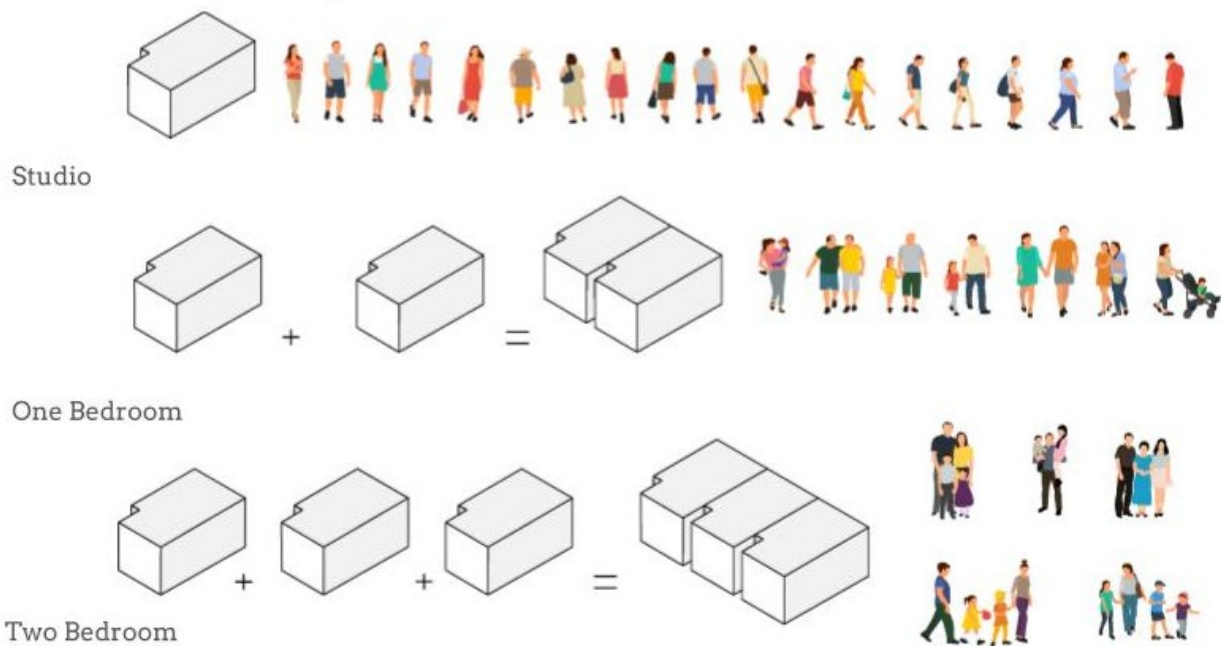


Fig. 8.7– Unit Types & intended users diagram
 Boualy, Mary. May 2025.

Beyond the individual units, the overall architectural system integrates a network of supportive communal programs throughout the site to help residents achieve stability and prepare for reentry into society. Counseling rooms, job training, and health check-ups are offered

dedicated space within the community building so that essential services are on hand and non-institutional in character (Fig. 8.8). Within the residential buildings, additional programs such as peer-led recovery rooms, financial literacy classes, and food production workshops are woven into community life (Fig. 8.9). Collectively, these spaces create a feeling of agency and momentum, with residents recovering at their own pace. Through conscious planning of space and supportive infrastructure, the design provides not just a roof, but a safe, restorative environment that allows the residents to regain autonomy and reconnect with the wider social network.



Fig. 8.8– Community Building Floor Plans & Program
Boualy, Mary. May 2025.



Fig. 8.9– Landscape & Ground Floor Programs Possibilities
 Boualy, Mary. May 2025.

Scalability + Replicability

One of the strengths of the prefabricated kit-of-parts system is its inherent replicability and expandability. Used as a small-scale transitional housing intervention in an underutilized urban city block or being developed to serve an entire district, the system can be scaled downward or upward to serve varied community needs without having to relinquish its architectural coherence. Its replicability in different geographic and climatic zones renders it the ideal response for cities, non-profits, and government agencies to implement affordable housing rapidly and cost-effectively. It might be used for emergency housing as well as supportive permanent housing in a bid to realize long-term value and suitability.

The building is also based on a modular grid taken from the ratios of one studio unit, the fundamental building block. The three-unit types are studio, one-bedroom, and two-bedroom, each constructed with prefabricated utility pods that are shared with the building central mechanical system (Fig. 8.10).

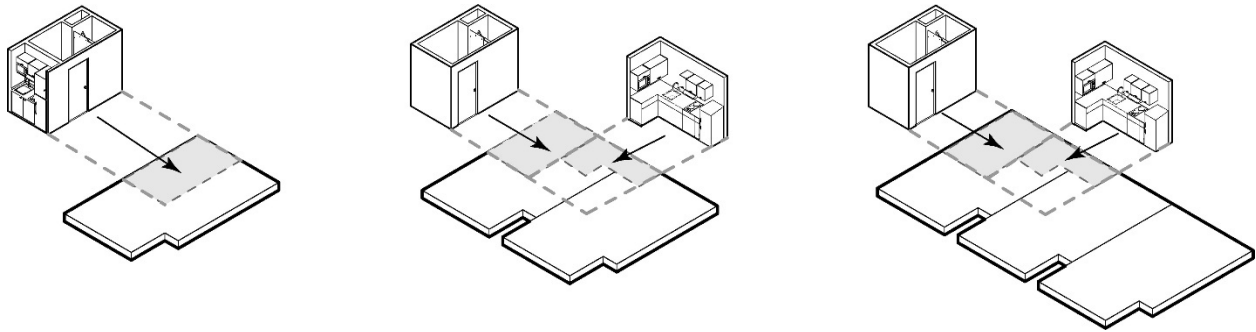


Fig. 8.10– Plug & Play Diagrams of Utility Pods to Units
Boualy, Mary. May 2025.

The bathroom and kitchenette of the studio unit are combined into a single utility pod, whereas the one- and two-bedroom units employ a bathroom pod and an L-shaped kitchen pod that can be interlocked. The one-bedroom unit is effectively two joined studio modules and is usually for couples, single moms with a kid, or housemates. The three-bedroom apartment has three studios and is intended for large families, multi-generational families, or shared living situations such as two single parents with kids. This layout enables easy conversion among unit types, providing architectural and programmatic flexibility to enable the demands of an evolving community over time to be fulfilled (Fig. 8.11 & Fig. 8.12).



Fig. 8.11– Typical Floor Plans & Variations
Boualy, Mary. May 2025.

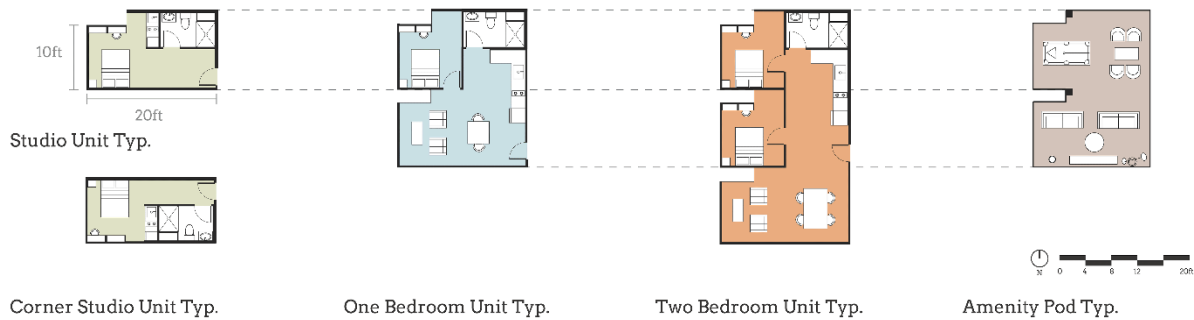


Fig. 8.12– Unit Types & Amenity Pod
Boualy, Mary. May 2025.

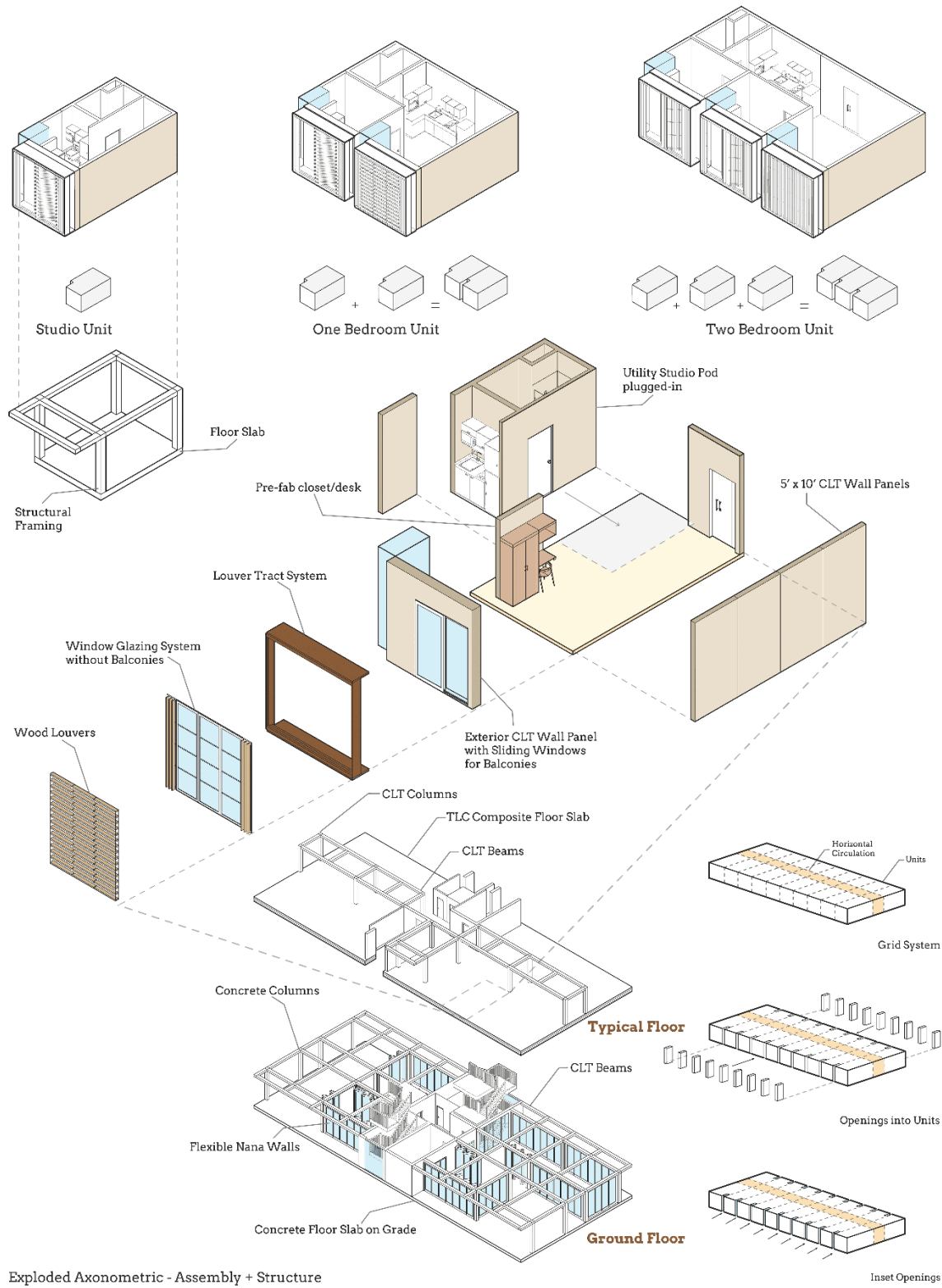
The panelized nature of the system also gives communities the possibility of involvement and capability building. As the components are built off-site and bolted together on-site, the residents can become first-hand participants in the construction process, learning something along the way, as well as contributing to cost savings. Such an active system supports empowerment and ownership. Blending architectural adaptability, economic viability, and community participation, the system is no longer merely a housing solution - it is a social regeneration model. Scalability, deployability, and the capacity for change result in this housing method being adaptive and resilient to evolving social, economic, and environmental needs.

Conclusion: From Systems to Strategy

This project is an exercise in reflection on the civic and ethical responsibility of architecture to address immediate social issues. Architecture cannot do it alone to end systemic homelessness, but it may help shape more humane and dignified approaches towards ending it. This thesis challenges current practices with the plea for a design practice that is empathetic, inclusive, and socially aware, with the call for increased collaboration between architects, policymakers, planners, and social organizations. It demonstrates the potential for architecture to be an agent of social transformation, reframing homelessness as not a crisis to be rectified

through charity, but as a problem in need of opportunity-based solutions, equity, and compassion.

By designing a prefabricated kit-of-parts system, the thesis imagines a repeatable and scalable model of architecture that redefines what housing could be: flexible yet stable, efficient yet human, modular yet meaningful. The system was conceived not merely of a technological solution but as an overall architectural response—combining reflective spatial planning, community-oriented programming, and a durable, user-adaptive building technique (Fig. 8.13). With potential for implementation within pilot projects and collaborations, this work is both a design proposal and stimulation to the field—inviting architects to step more actively into the creation of just, regenerative futures and the restoration of the human right to secure, stable shelter.



Exploded Axonometric - Assembly + Structure

Fig. 8.13– Exploded Axonometric of Assembly & Structure of Building & Units
 Boualy, Mary. May 2025.

In the context of Norfolk, Virginia, the thesis now translates into a concrete intervention: 214 new housing units in an area specifically for civilians who are homeless - namely those without military ties and hence excluded from certain federal and local benefits (Fig. 8.14). Not only does this project add to the stock of affordable housing, but it actively deconcentrates southern region homelessness, reinserting people into the city through considered architecture and programmatic services. In so doing, it transitions from conceptual system to strategic catalyst—an architectural system able to be scaled, adapted, and repeated across various urban contexts. This thesis demonstrates that through purposefulness and focus, architecture can be a powerful agent in retrieving dignity, rebuilding lives, and reasserting the role of design in creating a more just society (Fig. 8.15 & Fig. 8.16).

Men Residential Building

Case of **All Studios** at **MAX Capacity**:

15 studios per floor x 2 residential floors
 = 30 studios per building
 30 studios per building x 5 buildings
 = **150 studio units provided**

TOTAL Units

150 Studio units
 Eight 2 Bedroom units
 Eight 1 Bedroom units
 48 studio women units

214 units

Women + Families Residential Building

Case of **Units** at **MAX Capacity**:

One 2 Bedroom Unit per floor x 2 residential floors
 = Two 2 Bedroom Units per building
 2 Bedroom units per building x 4 buildings
 = **Eight 2 Bedroom units provided**

One 1 Bedroom Unit per floor x 2 residential floors
 = Two 1 Bedroom Units per building
 Two 1 Bedroom units per building x 4 buildings
 = **Eight 1 Bedroom units provided**

Six studio unit per floor x 2 residential floors
 = 12 Studio Units per building
 12 studio units per building x 4 buildings
 = **48 studio units provided**

Fig. 8.14– Norfolk Proposed Total Units Count
 Boualy, Mary. May 2025.



Fig. 8.15— Perspective overlooking into the Men Residential Building & Gardens
Boualy, Mary. May 2025.



Fig. 8.16— Perspective overlooking vegetable gardens & residential buildings
Boualy, Mary. May 2025.

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