

ABSTRACT

Title of Thesis: SHAPING COMMUNITIES

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The housing shortage in Ethiopia, particularly in rapidly urbanizing cities like Addis Ababa, represents a growing challenge. This issue stems from a combination of socio-economic factors, such as income disparity and limited access to financing. Urbanization intensifies this situation by rapidly increasing the demand for housing. The city's population is growing rapidly, with many people from rural areas and other cities migrating to Addis Ababa in search of better opportunities. This has led to a growing need for affordable housing. Therefore, architectural solutions need to focus not only on volume but also on sustainability and affordability. Current housing programs, like the 10/90 condominium initiative, show how limited existing efforts are in meeting the needs of low-income residents. Many of the city's residents still live in informal settlements, as there aren't enough affordable, formal housing options. The topic focuses on finding practical, scalable solutions to Ethiopia's housing shortage that could help create more equitable and strong communities while also addressing broader socio-economic challenges such as poverty, displacement, and overcrowding. It will explore design solutions that can be scaled and used across the capital city to enhance the quality of life of the residents. The topic will

explore alternative, affordable materials that can help reduce construction costs. The topic will analyze case studies and design experiments to find scalable solutions.

SHAPING COMMUNITIES

by

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Thesis submitted to the Faculty of the Graduate School of the
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Dedication

I dedicate this thesis to my family, whose consistent support and encouragement have shaped every step of my academic journey. Their commitment and sacrifices created the foundation that makes this work possible, and I'm deeply appreciative of the role they have played in my growth. To my friend, cohort, and mentors, thank you for your support, guidance, patience, and faith, all of which helped me bring this thesis to life.

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List of Abbreviations

IHDP: Integrated Housing Development Program

CBD: central business district

Chapter 1: Introduction

Introduction

Shelter is a basic necessity for all humans. In Ethiopia, a Bete (house) is more significant than simply providing physical shelter; a home represents family, community, and identity. It is where individuals feel safe, where relationships grow, and where a person's sense of belonging and stability is formed. However, in Ethiopia, especially in the capital city, Addis Ababa, this fundamental right and source of foundation has become increasingly inaccessible. The growing challenge of affordable housing has made what should be a basic necessity an unattainable luxury for many Ethiopians, particularly those in low- and middle-income groups. Addis Ababa has experienced rapid urbanization and population growth in recent decades. However, the housing departments responsible for managing this urban growth have not kept pace.¹ The lack of sufficient housing has resulted in a major housing crisis. The demand for affordable housing greatly exceeds what is currently being supplied. As the city expands, the cost of construction materials and infrastructure increases accordingly. To address this growing crisis, the government introduced a solution called the Integrated Housing Development Program (IHDP). The IHDP was intended to provide affordable housing for low- and middle-income groups. The program aimed not only to address the affordable housing crisis but also to create employment in the construction sector for low-income groups. The program was able

¹ Aregawi, Teklay, and Paolo Vincenzo Genovese. "Residential Land Supply for Affordable Housing in Ethiopia: The Political-Economic Challenges-Evidence from Three Cities in Tigray Province." *Journal of Housing and the Built Environment*, 2024. <https://doi.org/10.1007/s10901-024-10165-y>.

to produce multiple housing units through these initiatives.² However, it has struggled to meet the needs of the low-income groups, which were the primary target of the project. This was due to factors such as population growth, inflation, urbanization, and overcrowding. As a result, the group the program aimed to help has not benefited as intended. This situation raises important questions: How can architectural design contribute to solving this issue and creating affordable, sustainable, and scalable solutions that foster strong communities? How can housing be made more affordable and accessible for all groups in Addis Ababa? Can the current programs and existing policies be reformed to ensure that this basic need becomes attainable for everyone? The construction methods used in most housing projects in Addis Ababa, particularly concrete and brick, make housing more expensive due to the high cost of these materials. Exploring alternative materials is essential to solving this issue. However, gaining public acceptance for more sustainable materials that reduce the carbon footprint of Addis Ababa remains a challenge. Many residents associate concrete and brick with durability and longevity, while traditional construction methods or other alternative sustainable materials are often viewed as less reliable and requiring more maintenance.³ Providing solutions that residents can confidently trust is essential, and the use of durable, recycled, or alternative materials must be part of the conversation. This thesis explores how architectural design can address the housing crisis in Addis Ababa by engaging with the core principles of affordability, sustainability, and scalability. First, it is essential to explore alternative building materials that are more

² Haile, Fikir. 2023. "Displaced for Housing: Analyzing the Uneven Outcomes of the Addis Ababa Integrated Housing Development Program." *Urban Geography* 45 (1): 6-12. doi:10.1080/02723638.2023.2227511.

³ Anonymous, in discussion by the author, February 2025.

sustainable than those currently in use. Such materials can help reduce construction costs, making the final building cost more affordable. Second, sustainability must be incorporated not only through material choices but also through climate-responsive design strategies appropriate to Addis Ababa. This can be achieved through natural ventilation and other passive strategies. Third, scalability is crucial. This affordable housing solution should be adaptable across all regions of Addis Ababa, allowing a larger portion of the population to benefit. Ultimately, for the solution to be successful, it must involve community input, which will help to better reflect the needs and experiences of low-income groups.

Chapter 2: Literature Review

1. Land Management and Housing Design

1.1 Land Management and Supply Issues

To truly understand the housing crisis in Addis Ababa, Ethiopia, it is important to look beyond the form and structure and inspect the systematic issues within land access policies. It's difficult to focus solely on architectural form, material, and structures when the issue is directly connected to land ownership, the power of the government, and policies. In urban Ethiopia, only 33 percent of people own their homes, and about 11.7 households per housing unit share a single unit ⁴(Aregawi and Genovese, 2024). This is a prominent pattern across all urban areas, where the urban land system disproportionately benefits the high- and middle-income groups at a higher rate. The system is set to have little to no transparency and is structured to benefit the politically aligned groups, which in the process sidelines the low-income groups, leading to increased land scarcity and contributing to the inflated prices of housing. This is where architecture design can play a meaningful role in addressing these issues. The traditional housing system of the Gurage people offers a good example of how to address these challenges. The Gurage people in Ethiopia have a traditional architecture system where housing is communal, land use and stewardship. Their traditional homes are built using locally available sustainable materials such as wood, thatch, and mud. These houses are not just affordable and sustainable and mere structures; they are part of a broader cultural system of collaboration, community

⁴ Aregawi, Teklay, and Paolo Vincenzo Genovese. "Residential Land Supply for Affordable Housing in Ethiopia: The Political-Economic Challenges-Evidence from Three Cities in Tigray Province." *Journal of Housing and the Built Environment*, 2024. <https://doi.org/10.1007/s10901-024-10165-y>.

support, and land care, which is highlighted in practices like the Gurda Pledge⁵(Kebede, Amsalu, and Yosef, 2024). This model can be replicated or adapted to encourage shared land use, lower construction costs by using local materials, and address land scarcity and affordability.

What can be learned from this traditional system is that housing can be sustainable and human-centric when the land is treated as a shared resource and not just as a commodity. By reconnecting with indigenous practices of communal land use and integrating modern mechanisms like land banking and public leasing, Ethiopia can create a more just and inclusive foundation for affordable housing that benefits all its citizens.⁶

1.2 Urban Infrastructure and Lack of Connection

The organization of housing in Ethiopian cities clearly illustrates the deep-rooted inequality. As one moves further away from the city center, housing is affordable to a wider range of income groups, however, the cost of living rises, for both low- and middle-income groups. The H+T index ⁷ (Tareke and Baraki, 2024) highlighted that low-income groups have been pushed to the outskirts of the cities, where transportation costs are high and infrastructure is lacking. Those who don't have access to private vehicles must travel further to get to public transportation because of

⁵ Kebede, Ashenafi, Desalegn Amsalu, and Dawit Yosef. "Looking Back Thinking Ahead towards the Vernacular Architecture of Gurage, Ethiopia." *Discover Sustainability* 5, no. 1 (2024): 26-18. <https://doi.org/10.1007/s43621-024-00206-5>.

⁶ Ibid

⁷ Moges Tareke, Kassa, and Goitom Abraha Baraki. "Affordability and Accessibility of Condominium Housing in Urban Ethiopia Using a Combined Transportation and Housing Cost (CHT) Index Model: Implication for Sustainable Urban Infrastructure, Policy and Development." *International Journal of Urban Sustainable Development* 16, no. 1 (2024): 459-82. <https://doi.org/10.1080/19463138.2024.2429393>.

the poor infrastructure. This highlights the issues within the affordable housing solutions that exist right now. The Affordable housing project like the 10/90 condominium project prioritizes areas where land is comparatively cheaper for this project and fails to consider the individual's experience commuting to work or accessing essential services.⁸ In affordable housing, the urban context should be prioritized just as much as reducing housing costs or finding affordable land for these projects. These projects should also ensure access to essential services such as hospitals, schools, and grocery stores. Looking at the Gurage region article by (Kebede, Amsalu, and Yosef, 2024)⁹, housing in the traditional setting is considered an accessible, clustered settlement pattern that naturally supports shared infrastructure and minimizes the long commute. (Kebede, Amsalu, and Yosef, 2024) It's a community-based design and not so much isolated. Drawing inspiration from such models could offer a valuable perspective in designing sustainable urban affordable housing. As Moghayedi et al. (2021) pointed out in their review of successful sustainable housing projects, integrating design with infrastructure planning through compact, mixed-use, and transit accessible neighborhoods is a critical factor for success that should be relied on. (Moghayedi et al. (2021))¹⁰ If a modern design can

⁸ Haile, F. (2023). Displaced for Housing: Analyzing the Uneven Outcomes of the Addis Ababa Integrated Housing Development Program. *Urban Geography*, 45(1), 6-12.
doi:10.1080/02723638.2023.2227511

⁹ Kebede, Ashenafi, Desalegn Amsalu, and Dawit Yosef

¹⁰ Moghayedi, Alireza, Bankole Awuzie, Temitope Omotayo, Karen Le Jeune, Mark Massyn, Christiana Okobi Ekpo, Manfred Braune, and Paimaan Byron. "A Critical Success Factor Framework for Implementing Sustainable Innovative and Affordable Housing: A Systematic

adopt this principle, and conceptualize that house not as a single form but rather as a large urban ecosystem, then it would be easier to address the housing crisis.

1.3 Policy and Governance Gaps

Architecture can offer many solutions, but cannot function alone without the influence of governance. The housing crisis is not just an architectural issue; it is also profoundly political. As Aregawi and Genovese (2024) discuss, urban planning in Ethiopia suffers from systematic issues, including policy disintegration, inconsistency, and weak coordination. (Aregawi and Genovese (2024))¹¹ When land and housing decisions are made without transparency or public input, it makes people lose trust in the system. The people feel increasingly distant from the system created to support them. The future of Ethiopia needs to rethink and shift the way how things are governed. For architecture to become a tool for fairness and inclusion, it must be based on policies that look beyond the top-down decision-making system. Design needs to engage the communities and be grounded in community input. It is not enough to change the policies at a surface level; rather, we must change the structure of the system to enhance how governance engages with vulnerable groups. Traditionally, Ethiopian communities embraced more collaborative and community-centered decision-making when it came to housing. Constructing a home was not an individual or private project, but rather deeply embedded in collective life. In a traditional setting, the process of building was a group effort something that

¹¹ Aregawi, Teklay, and Paolo Vincenzo Genovese. “Residential Land Supply for Affordable Housing in Ethiopia: The Political-Economic Challenges-Evidence from Three Cities in Tigray Province.” *Journal of Housing and the Built Environment*, 2024. <https://doi.org/10.1007/s10901-024-10165-y>.

connected the communities. The community comes together to work together, not because of obligation, but because cooperation is simply part of the norm (Moghayedi and colleagues, 2021).¹² This collaboration was a way to be part of their neighbor's life and helped weave stronger social ties among the community. These traditional practices hold an important lesson for the policy and governance challenges of urban planning. The existing top-down system can be revised by revisiting these traditional practices and adapting the effective process to modern affordable housing strategies. The solution to the housing crisis shouldn't just be a technical fix; it should be something that empowers communities and strengthens their foundation. Just as traditional communities involve collective decision-making, modern architectural approaches should actively engage residents in shaping their environments. Those most affected by the housing challenge should have a role in designing solutions that reflect their needs.

2. Affordable Housing Models and Policy Frameworks

2.1 Housing and Transportation Integration

When it comes to affordable housing in urban areas like Addis Ababa, transportation shouldn't be viewed separately from affordable housing, yet, this separation is a persistent issue in modern-day Addis Ababa, Ethiopia. As Tareke and Baraki's (2024) highlight in their research on the H+T index (housing + transportation), the promising concept of affordable condominium housing projects often falls short due to the lack

¹² Moghayedi, Alireza, Bankole Awuzie, Temitope Omotayo, Karen Le Jeune, Mark Massyn, Christiana Okobi Ekpo, Manfred Braune, and Paimaan Byron. "A Critical Success Factor Framework for Implementing Sustainable Innovative and Affordable Housing: A Systematic

of transportation considerations during site selection.¹³ Ethiopia must prioritize truly equitable affordable housing by integrating land use and transportation planning into its affordable housing project strategies. The problem is particularly evident in Addis Ababa. Low-income communities are often pushed to the outskirts of the city and still spend more for transportation to get to work. These policies have to be inclusive and must take into account the vulnerable groups. The reality for these groups is harsh, as they are forced to travel the most while they are the group that can least afford it. Ironically, while these areas offer comparatively affordable housing, residents often spend more on transportation to access employment and essential services. Having the burden of commuting long distances for the sake of affordability but spending more on traveling doesn't make sense. To address this, locating affordable housing in areas with public transportation at a walkable distance must be considered when planning this affordable housing project. Access to public transportation is a necessity for the low- to middle-income community. Designing with connectivity in mind creates opportunities for vulnerable groups. When connectivity is supported by mixed-use zoning, it can create a small self-sustaining community that has its own ecosystem.¹⁴ Incorporating such zoning creates opportunities for local employment for low-income groups reducing dependency on long-distance commutes. This approach must accommodate the high population density of these vulnerable groups

¹³ Moges Tareke, Kassa, and Goitom Abraha Baraki. "Affordability and Accessibility of Condominium Housing in Urban Ethiopia Using a Combined Transportation and Housing Cost (CHT) Index Model: Implication for Sustainable Urban Infrastructure, Policy and Development." *International Journal of Urban Sustainable Development* 16, no. 1 (2024): 459-82. <https://doi.org/10.1080/19463138.2024.2429393>.

¹⁴ Moghayedi, Alireza, Bankole Awuzie, Temitope Omotayo, Karen Le Jeune, Mark Massyn, Christiana Okobi Ekpo, Manfred Braune, and Paimaan Byron.

without compromising on quality. In affordable housing design, connectivity, and access should be fundamental design strategies, not just an afterthought.

2.2 Joint Housing Development

Collaborative housing development is a key feature of traditional housing construction methods, though it is less common in modern building practices. This housing practice is more prevalent in informal or traditional housing forms, such as Gura traditional housing. In these informal housing contexts, construction becomes a community effort, where the neighbors come together to build a one-story unit, sharing both labor and resources. This collaborative system can also be traced back to the cultural traditions discussed earlier, particularly those of the Gura people. For informal housing, this collaborative system is intended to lower costs, as low-income people often have a hard time finding affordable formal housing. As a result, the community comes together to share the burden with their neighbor. In the traditional context, this practice is simply the norm. Both traditional and informal housing use locally available materials, enabling them to meet both the environmental and cultural needs of the community they serve. However, challenges arise when considering this method for the urban scale and at a higher density. Scaling and adapting a small localized approach to a broader scale of the urban context presents a significant challenge and requires further exploration. As Moghayedi et al. and Ekpo, Braune, and Byron (2021) argue, an effective housing model must integrate innovation, thoughtful design, and collaborative governance. For this to be relevant today, joint development must integrate innovative design solutions with a collaborative governance system. By blending traditional practices with contemporary innovation,

policymakers can promote more inclusive, adaptable, and community-driven affordable housing.¹⁵

2.3 Policy on Land Distribution

Any architectural response to the housing crisis must first address the foundational issues of fair land distribution. Even the most innovative architectural solutions become ineffective if the affected community group doesn't have access to land. Housing policy should address both issues and use them as a guiding principle for new affordable housing projects. As Aregawi and Genovese (2024) note, the flawed land management system in Ethiopia excludes low-income groups due to the high prices and unequal land distribution. As noted earlier only a third of Ethiopians own their homes, and most share a single housing unit in overcrowded conditions.¹⁶ The issue stems from the dual land management system, which treats urban and rural land differently. The separation between the two structurally sets different expectations, whereas the urban land has more restrictions and is less accessible while rural is relatively less regulated. This forces the low-income groups to resort to informal settlements in overcrowded conditions. These informal homes are not officially recognized by the government, leaving residents in constant fear of being displaced from the only place they consider home. The policy should not only make land accessible but also encourage inclusive and context-based design that honors the way

¹⁵ Moghayedi, Alireza, Bankole Awuzie, Temitope Omotayo, Karen Le Jeune, Mark Massyn, Christiana Okobi Ekpo, Manfred Braune, and Paimaan Byron.

¹⁶ Aregawi, Teklay, and Paolo Vincenzo Genovese. "Residential Land Supply for Affordable Housing in Ethiopia: The Political-Economic Challenges-Evidence from Three Cities in Tigray Province." *Journal of Housing and the Built Environment*, 2024. <https://doi.org/10.1007/s10901-024-10165-y>.

people live and the environment they aim to serve. Without structural reform in land access and distribution, efforts to resolve the housing crisis will remain superficial.

Chapter 3: Methodology

3.1 Introduction

Research methodologies are essential in guiding academic research, particularly in complex real-world issues such as the housing crisis in Ethiopia. In architectural research, methodologies provide a structured approach to understanding, analyzing, and finding solutions to these challenges. As Lucas emphasizes, methodology is not merely about collecting information, but about shaping the direction and outcomes of the research.¹⁷ In this thesis, the research methods serve as a framework for addressing the complex housing shortage in Ethiopia through the lens of architecture and related disciplines. This chapter outlines the range of methodologies that I will employ in this thesis, which draws from the Lucas chapter (1-5 and 7) to guide my approach. This section structures my research and highlights how each method contributes to exploring the thesis question. (Thesis Question: How can architectural design address Ethiopia's housing shortage through affordable, sustainable, and scalable solutions that foster strong communities?) Referring to Lucas's chapters particularly the emphasis on writing, interdisciplinary collaboration, field documentation, and qualitative inquiry this chapter will provide theoretical and practical approaches to ensure that the research is contextually grounded and ethically engaged.¹⁸

3.2 Methodological Framework

¹⁷ Lucas, Ray. *Research Methods for Architecture*. London, England: Laurence King Publishing, 2016.

¹⁸ Lucas, Ray. *Research Methods for Architecture*. London, England: Laurence King Publishing, 2016.

This thesis adopts a qualitative, interdisciplinary, and iterative research approach, which is essential for addressing the social, political, and environmental dimensions of Ethiopia's housing crisis. The research methodologies are organized as follows:

Qualitative research The primary method for this thesis will be used to understand user experiences and community dynamics. Ethnographic research and reflective practice will enable me to engage in the context of affordable housing environments and study how people interact with their living spaces. Interdisciplinary perspective This research connects architecture with sociology, urban planning, environmental studies, and economics. By collaborating across disciplines, I can develop an understanding of the housing problem and its potential solutions from various viewpoints, ensuring that the research is both inclusive and multi layered. Visual and field-based methods Fieldwork will be essential for documenting and studying the physical and lived experiences of affordable housing environments. Through visual observation, sketches, and mappings, I will gain a deeper understanding of the spatial and environmental aspects of the sites. Reflexive inquiry This approach will allow me to connect design thinking with the social realities of Ethiopian communities. By reflecting on my role as a researcher and designer, I can critically evaluate how architectural solutions can address the needs of local populations in an effective and meaningful way. These methodologies ensure that the research remains responsive and grounded as the thesis progresses.

3.3 Research Design and Process

3.3.1 Literature Review

The literature review explores the theoretical aspects of understanding the complexities of the housing crisis in Ethiopia. The review will cover topics such as land management, government policies, existing housing solutions, sustainable design practices, and community-led solutions. This will inform my approach to fieldwork, helping me identify key issues and factors to consider during site analysis.

3.3.2 Precedent Studies

Precedent studies are an important part of the research methodology. These are selected based on their relevance to the thesis topic and are analyzed using both visual and written methods. Precedents such as the Addis Ababa condominium affordable housing project, the Gando elementary school in Burkina Faso, and the Bondy social housing project in France will be analyzed for their sustainable features, adaptable spaces, and spatial layouts, as well as how they address challenges similar to those faced in Ethiopia. Examining these precedents will inform affordable housing strategies in Ethiopia, focusing on spatial planning, construction, and community involvement.

3.3.3 Fieldwork

Fieldwork is central to the research and includes a comprehensive site analysis. Site Zero is selected based on criteria outlined in the program abstract. While the main criteria apply to both urban core and peripheral locations, the design response differs for peripheral sites. Key selection factors include access to public transport, proximity

to the urban core, existing housing typologies, infrastructure availability, and the site's social fabric. The fieldwork includes direct observations, visual observation sketches, and mappings, and will focus on how communities engage with the site. By observing daily life and interactions within the site, I will gain insight into the challenges and opportunities present in the area. I will also review policy documents and local brochures to better understand the spatial, environmental, and social dynamics of the site. Field documentation will include annotated maps and detailed sketches, highlighting critical features of the site and its surrounding environment. I will also engage with residents and community members to understand their experiences and needs, ensuring that the research is rooted in the lived realities of those who are directly affected by the housing crisis. For Site Zero, a more structured and documented approach is taken (annotated map, sketches, and diagrams).

3.3.4 Interviews

Referencing Chapter Two of Lucas' qualitative methods, semi-structured interviews will be conducted with residents and policy analysts to understand the different meanings of what “affordable” and “sustainable” mean to the focus group, as these terms mean different things depending on cultural context and socioeconomic status.¹⁹ All interviews will follow ethical research protocols. Informed consent is prioritized, particularly in sensitive communities. No photography or recording is done without permission, especially in informal settlements.

3.3.5 Observation

¹⁹ Lucas, Ray. *Research Methods for Architecture*. London, England: Laurence King Publishing, 2016.

Ethnographic observation will be employed to study patterns of use of communal spaces, preferred walkways and paths, as well as informal adaptations to the built environment. Documenting daily activities and informal adaptations, this observational research will reveal how spatial design fosters or hinders community life, and how informal practices can inform formal design solutions.

3.3.6 Reflective Practice

Reflective practice will be integrated throughout the research process to connect design thinking with social realities. This method involves diagramming relationships between space, form, and social factors, and incorporating both written and visual analysis into the design process. By reflecting on the findings from ethnographic research, fieldwork, and interviews, I will ensure that the design outcomes are responsive to the needs of the communities while addressing the broader social, political, and environmental issues identified throughout the research.

3.4 Ethical Approach

Ethics play a vital role in this research, especially in sensitive contexts such as informal settlements. As highlighted in Lucas's Chapter 5 reading, responsible documentation is needed, especially in informal settlements, ensuring that the privacy and dignity of participants are maintained.²⁰ As stated earlier, all interviews will follow ethical research protocols. Informed consent is prioritized, particularly in sensitive communities. Photography and recording will only be done with permission, especially in informal settlements. Intrusive methods will not be used in these

²⁰ Lucas, Ray. *Research Methods for Architecture*. London, England: Laurence King Publishing, 2016.

communities. Cultural sensitivity is essential, particularly regarding how housing reflects identity.

3.5 Conclusion

In conclusion, the research methodologies outlined in this chapter form a comprehensive and rigorous approach to addressing Ethiopia's housing shortage. By utilizing qualitative methods such as ethnography, reflective practice, and interdisciplinary collaboration, the research will remain flexible and responsive to the evolving realities of the site and the communities involved. The integration of field documentation, precedent analysis, and ethical inquiry ensures that the research is both context-sensitive and grounded in real-world needs. The strategies drawn from Lucas's methodology provide a solid foundation for the thesis, ensuring that the architectural solutions proposed are not only innovative but also socially and environmentally sustainable.

Chapter 4: Precedent Studies (Case studies)

Introduction

This chapter introduces the five main precedents that are explored in this thesis. Each precedent is selected for a specific reason that supports the thesis, offering insights or possible solutions for affordable housing in Ethiopia. These case studies are helpful as they provide guidance on various issues addressed by the thesis.

The first project I looked at is the Karl Marx Hof building, located in Vienna, Austria. I chose this because it is a strong example of large-scale social housing that meets the needs of a community by providing affordable shelter, making it highly relevant to my thesis. It was designed to address Vienna's housing crisis after World War I and was constructed during a time of significant socio-political change. The project provides affordable housing for working-class families, offering them dignified living spaces. It also demonstrates an effective approach to maximizing horizontal massing while integrating green spaces, creating a balanced relationship between built form and landscape.

The second project is the Dongziguan Affordable Housing project in Hangzhou, China. I selected this project because it was developed for relocalized farmers who were displaced due to an urbanization initiative. They had previously lived in outdated housing. This project connects directly with my thesis, as it reflects how urbanization displaces low-income individuals, similar to the challenges currently faced by many people in Ethiopia due to rapid urban development.

The third project is the Gando Primary School, located in Gando, Burkina Faso. I chose this case because it utilizes local materials to reduce construction costs, making

it an affordable and scalable solution, both of which are relevant to my thesis.

Additionally, the project addresses the community's needs in a meaningful way.

Similarly, my thesis focuses on community needs for affordable housing and includes building an elementary school as part of the proposal.

Precedent One: Karl Marx Hof



Figure 4.1 Karl Marx Hof façade perspective (source: Hidden Architecture)

Name Karl Marx Hof

Housing

Architect: Karl Ehn 1884-1957

Location: Vienna, Austria

Built: 1926-30

The Karl Marx Hof, built in the 1920s, was a response to severe housing shortages in post-WWI Austria. It was constructed during a time of significant socio-political change. Designed to address Vienna's housing crisis after World War I, the Karl

Marx Hof was built during a period of major socio-political change. The core idea of the building was a response to this crisis. It includes communal living, courtyards, shared spaces, green spaces, and easy access to public amenities. The building incorporates natural light and ventilation to enhance residents' quality of life. At the time it was built, the building served as an identity for the residents. It is well integrated into urban life, with a focus on connectivity.²¹



Figure 4.2 Karl Marx Hof façade entry (source: Socialism and Nationalism on the Danube)

²¹ French, Hilary. Key Urban Housing of the Twentieth Century: Plans, Sections, and Elevations. 1st American ed. New York: W.W. Norton, 2008.



Figure 4.3 Karl Marx Hof façade zoomed in (source: Hidden Architecture)



Figure 4.4 Karl Marx Hof façade entry (source: Socialism and Nationalism on the Danube)

Site and context analysis

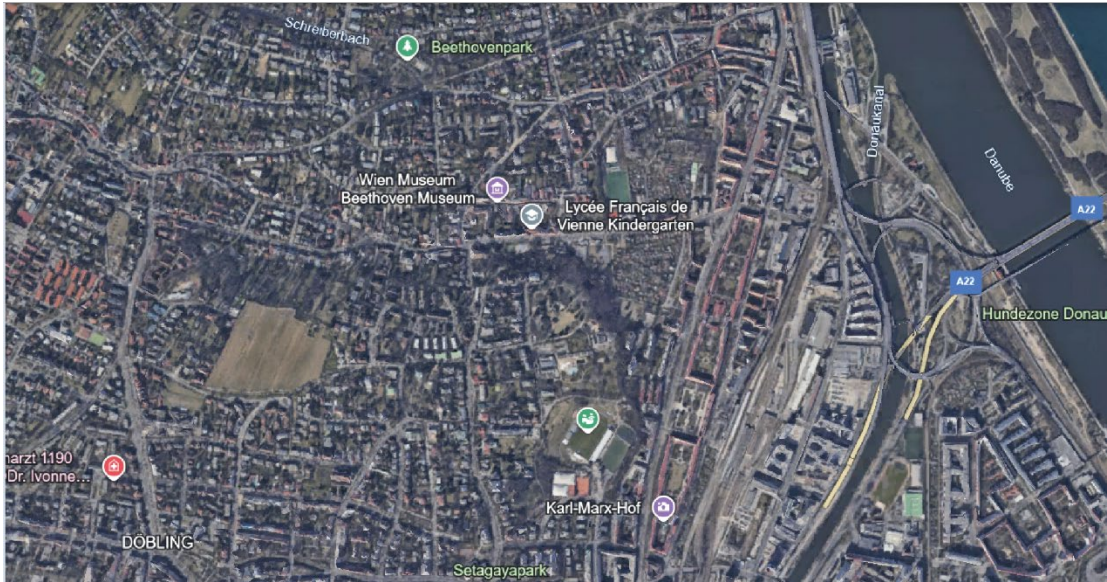


Figure 4.5 Karl Marx Hof façade site (source: Google Earth)

The building is located near the city center, with good access to public transport and amenities. It served as a symbol of the social policies of the time, connecting architecture with the political ideology of socialism.

The following are diagrams that further explore the project.



Figure 4.6 Inner city (1st district) vs Karl Marx Hof

Green spaces and V-path

Extensive landscaped areas and pedestrian paths define the project's layout.

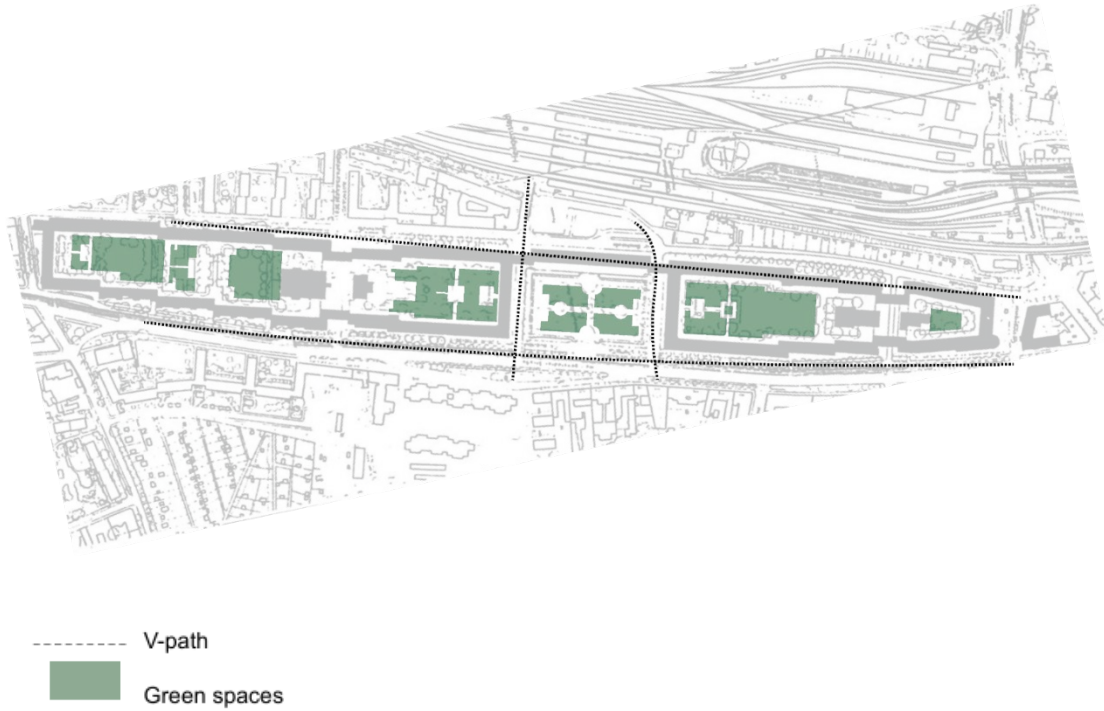


Figure 4.7 Karl Marx Hof plan path vs green spaces (source for base picture: Vielfalt der Moderne, the diagram is by the author)

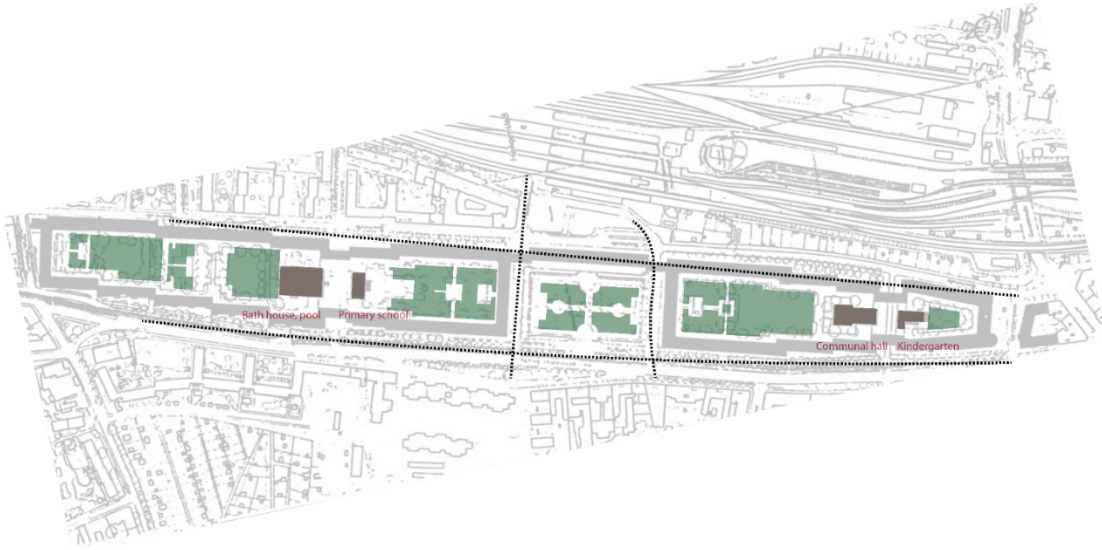


Figure 4.8 Karl Marx Hof site plan green spaces, v-path, and nearby context (source for base picture: Vielfalt der Moderne, the diagram is by the author)

Green spaces, v-path, and nearby context

The brown indicates the houses with different types of programs within the site, creating a habitat for the residents.

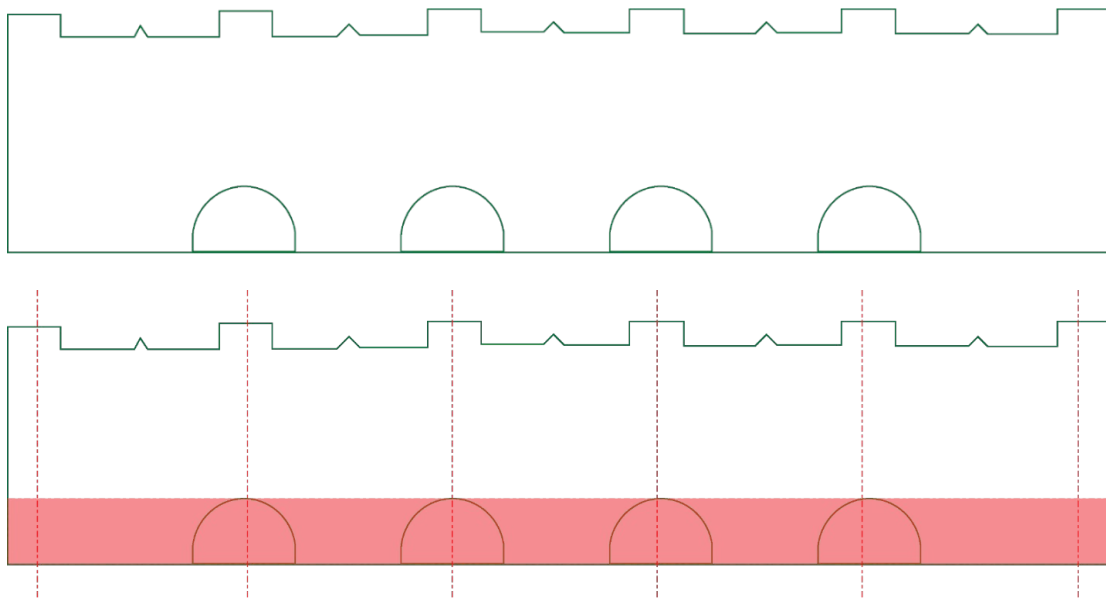


Figure 4.9 Edge and Datum (source: by the author)

Edge and Datum

The building's continuous arches contrast with its extruded form.

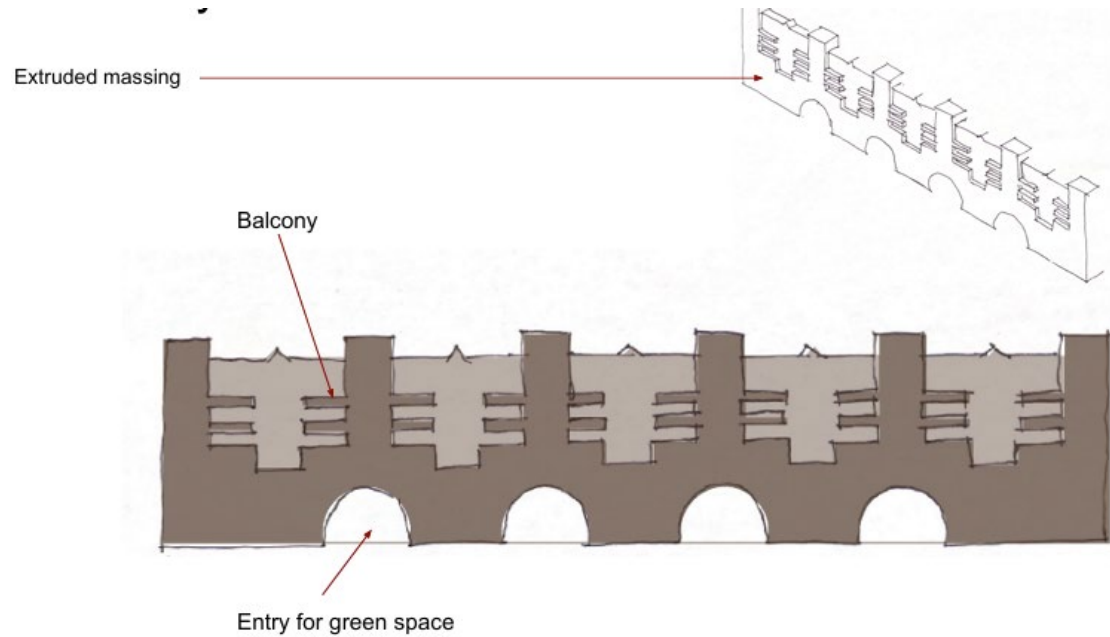


Figure 4.10 Hierarchy diagram (source: by the author)

Hierarchy diagram

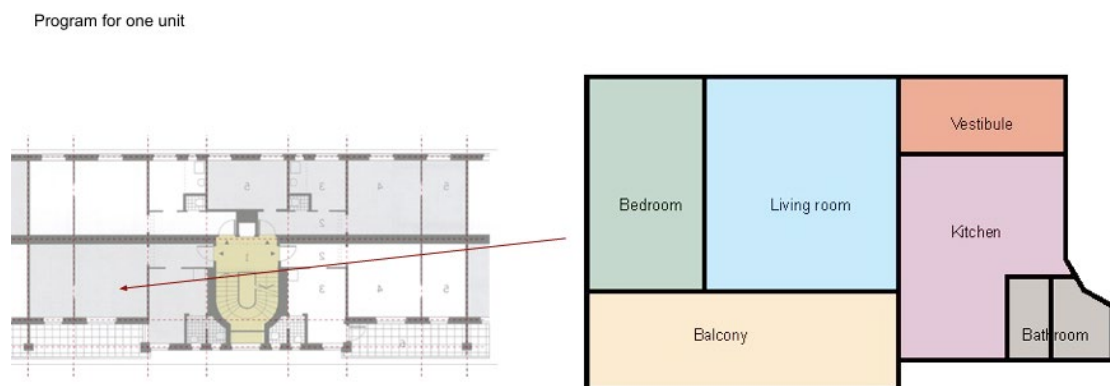


Figure 4.11 Program diagram of one unit (source for the base drawing: Key Urban Housing of the Twentieth Century: Plans, Sections, and Elevations, source for the diagram: the author)

Program diagram of one unit

Illustrate unit layout, circulation, and space usage.

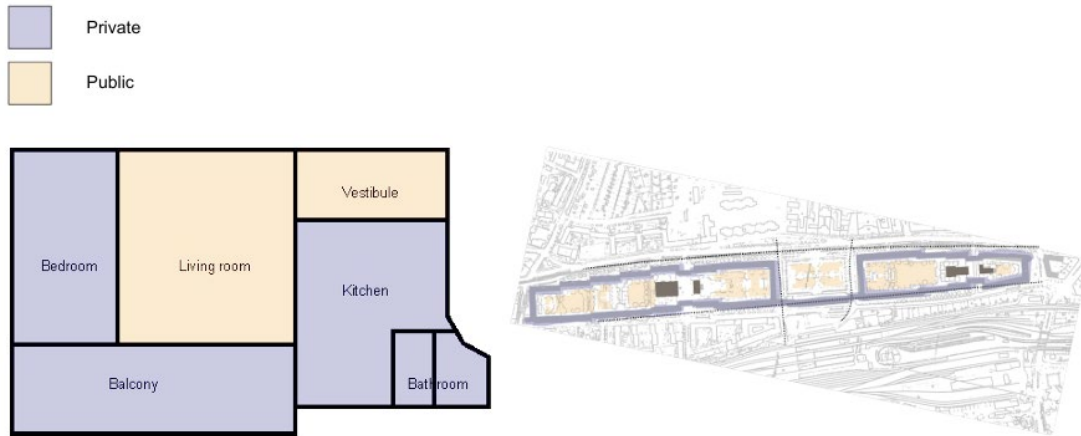


Figure 4.12 Public and private spaces (1st picture source: by the author, 2nd picture source: source for base picture: Vielfalt der Moderne, the diagram is by the author)

Public and private spaces

Clear distinctions, with communal green space access highlighted.

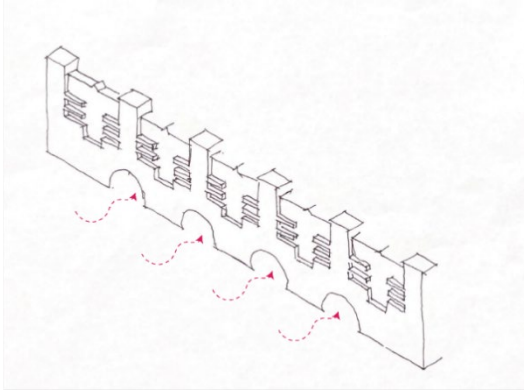
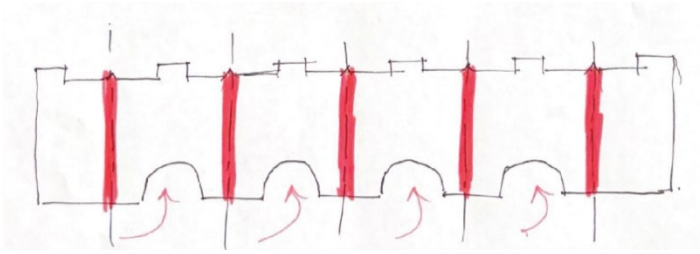


Figure 4.13 Circulation (source: by the author)

Red fill-Vertical circulation

Red arrow- Entry to the green space

Circulation

Efficient vertical and horizontal movement systems.

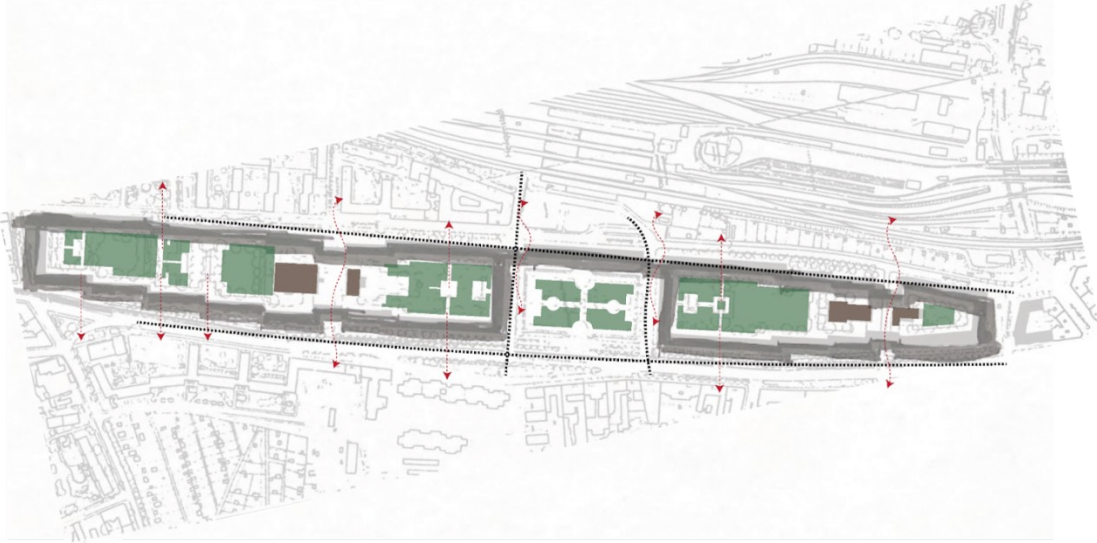


Figure 4.14 Connection (source: for base picture: Vielfalt der Moderne, the diagram is by the author)

Paths are highlighted in red

Connection

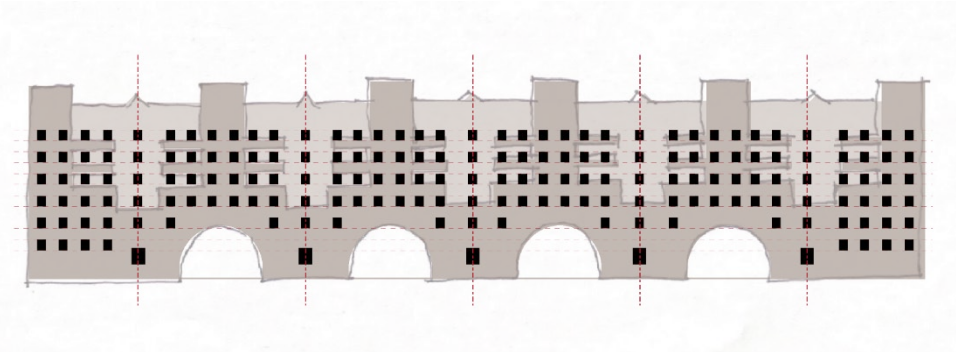


Figure 4.15 Façade (source: by the author)

Repetitive pattern with emphasis on light, air, and rhythm.

Façade

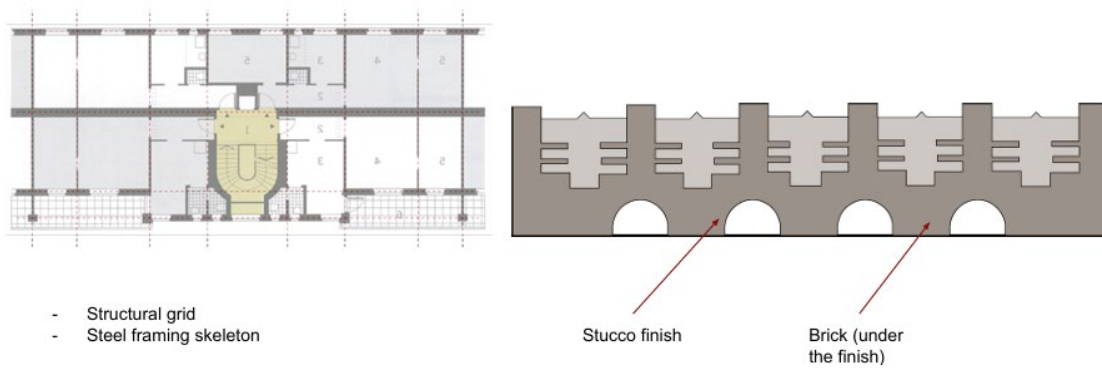


Figure 4.16 Structure and Materiality (1st source for the base drawing: Key Urban Housing of the Twentieth Century: Plans, Sections, and Elevations, 2nd source: by the author)

Structure and Materiality

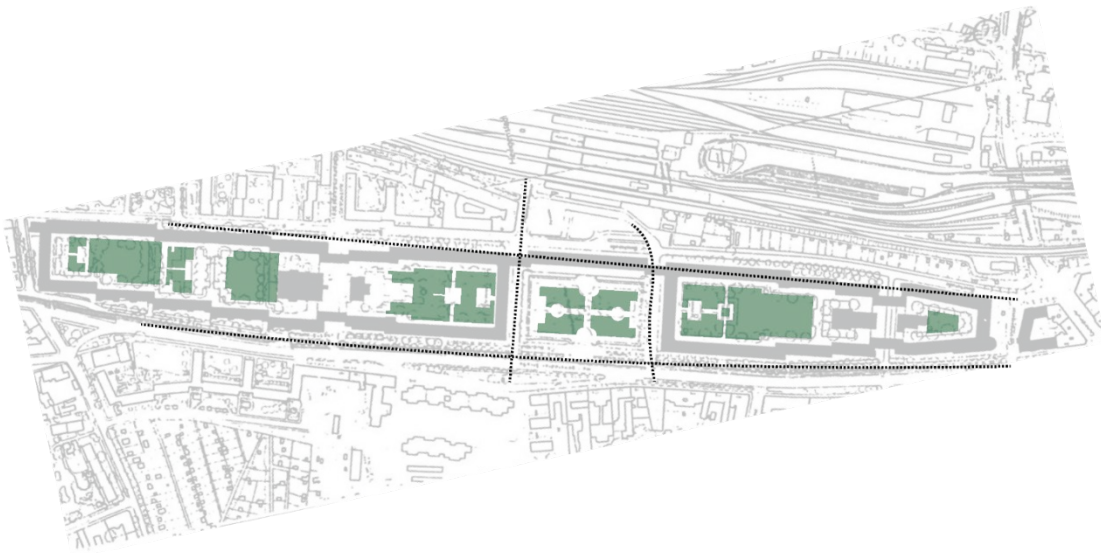


Figure 4.17 green area with access (source for base picture: Vielfalt der Moderne, the diagram is by the author)

The green area is highlighted in green

Only a small portion of the site is developed, the remainder area is dedicated to green spaces and gardens.

Sustainability

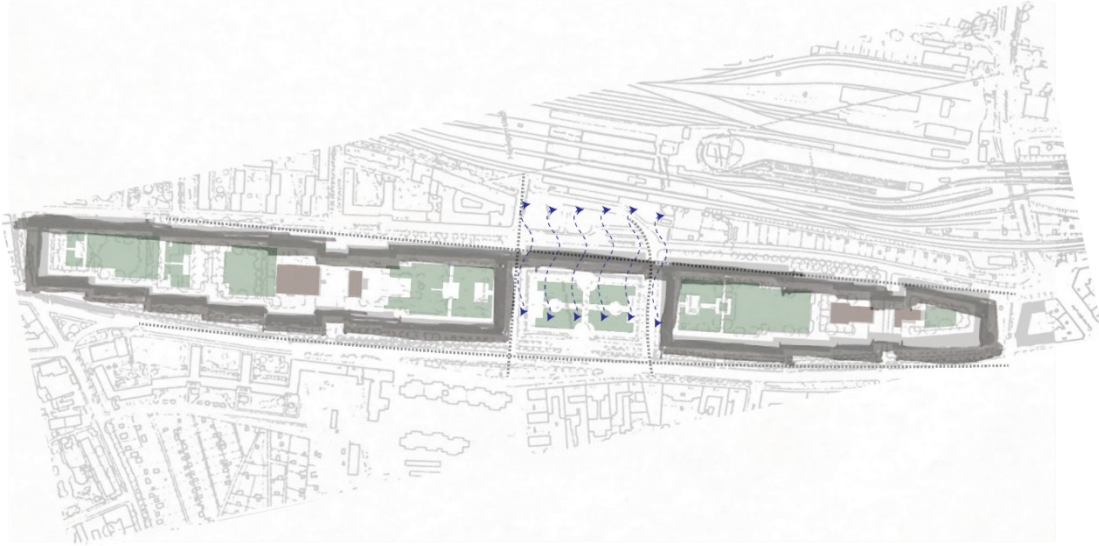


Figure 4.18 Karl Marx Hof façade zoomed in (source for base picture: Vielfalt der Moderne, source for the diagram: the author)

The arched opening for the courtyard allows cross ventilation and natural lighting.

Ventilation

The building demonstrates how architecture can serve both as a response to a housing crisis and as a tool for shaping collective identity, while also making a political statement. It integrates affordable housing with opportunities for social connection.

This precedent informs the thesis by showing how design and social goals can overlap to create dignified and scalable spaces.

Precedent two: Dongziguan Affordable Housing



Figure 4.19 Dongziguan Affordable Housing (source: Arch Daily)

Name: Dongziguan Affordable Housing

Purpose: Housing

Architect: Gad Line+ Studio (also referred to as gad Line+ Studio)

Location: Hangzhou, China

Built: Completed in 2016

The Dongziguan Affordable Housing, built in 2016, tackles affordable and sustainable housing solutions for relocalized farmers. The project established a rural-to-urban relationship by incorporating elements of traditional housing organization, where clusters of houses create a courtyard for each block. The balance between community and individuality is well maintained in this project. The construction cost was also kept low. The orientation of the buildings is designed to enhance community engagement. The building uses traditional elements, such as the traditional roof shape, and reimagines them to create both a modern and traditional look. The core idea of the building design was to provide high-quality, low-cost housing for relocalized farmers while maintaining the traditional collective living lifestyle. The building design does not follow the typical high-rise forms common in urban China, which makes it stand out. This project is a great example of preserving vernacular architecture while meeting modern needs. The project provides a variety of cluster

placements, making it a scalable project.²²



Figure 4.20 Dongziguan Affordable Housing (source: Arch Daily)

²² ArchDaily. "Dongziguan Affordable Housing for Relocalized Farmers / Gad," January 3, 2017. <https://www.archdaily.com/802369/contemporary-rural-cluster-dongziguan-affordable-housing-for-relocalized-farmers-in-fuyang-hangzhou-gad>.

"Dongziguan Affordable Housing by Gad Line+ Studio," n.d. <https://www.dezeen.com/awards/2018/winners/dongziguan-affordable-housing/>.



Figure 4.21a and b Dongziguang Affordable Housing (source: Arch Daily)

Site and context analysis



Figure 4.22 Dongziguan Affordable Housing site plan (source: Google Earth)

Fuchun Jiang River

Zhejiang

The building is located in Fuyang District, southwestern Hangzhou, Zhejiang Province.

The area is a mix of agricultural land and traditional village structures.



Figure 4.23 Dongziguan Affordable Housing site plan zoomed in (source: Arch Daily)

The design showcases clusters of housing, mostly in L-shaped or shifting typologies.



Figure 4.24 traditional roof style (source: by the author, base picture by Arch Daily)

The sloping tiled roofs are inspired by the traditional architectural styles found in the Hangzhou region. The design has a contemporary interpretation of the vernacular style.

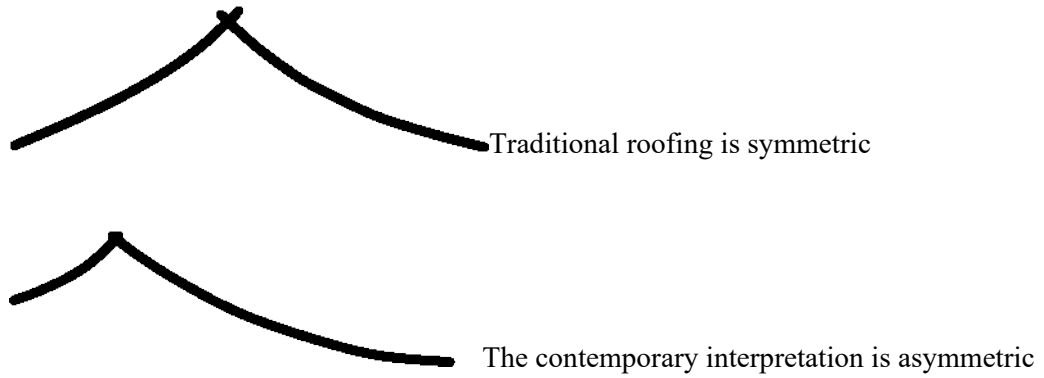


Figure 4.25 Roof type (source: by the author)

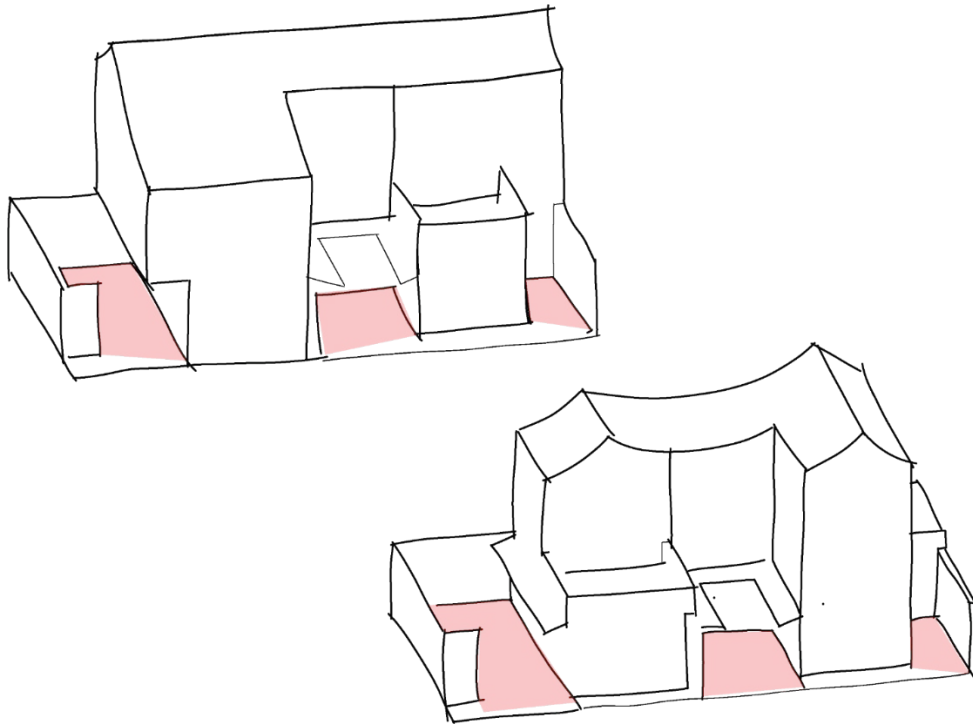


Figure 4.26 Courtyard Typology (source: by the author)

Courtyard typology

The project highlights A traditional style common in Chinese architecture, adapted for modern living (for the farmers).

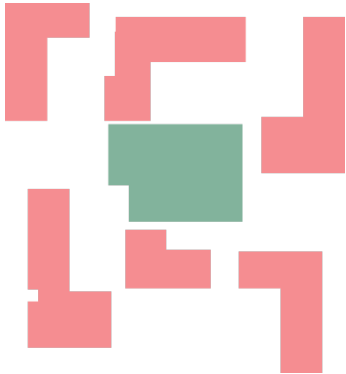


Figure 4.27 Courtyard cluster typology (source: by the author)

The buildings are grouped in clusters of 5-8 (in this case, 6) around shared courtyards. This design reflects traditional local village layouts.

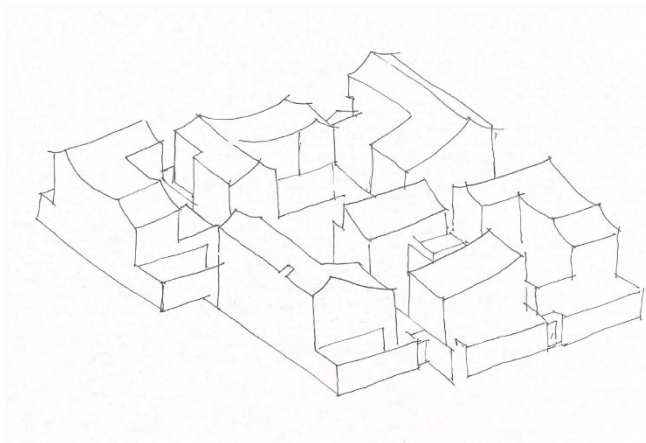


Figure 4.28 Axon of the cluster (source: by the author)

The drawing shows one of the Clusters of 6 facing a courtyard.

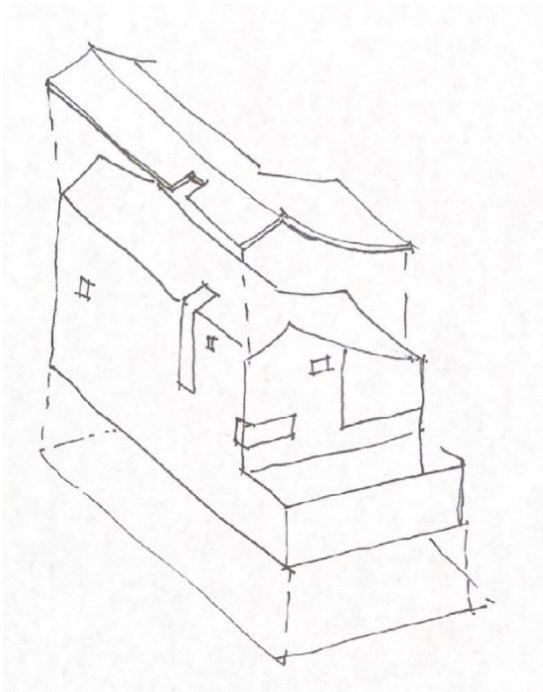


Figure 4.29 Form of one house (source: by the author)

Form of one house

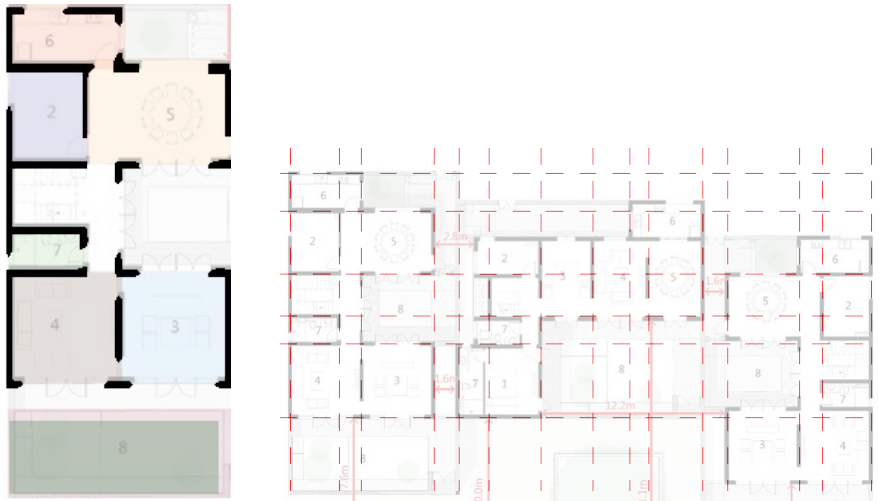


Figure 4.30 Program and grid (base source: Arch Daily, diagram by the author source: by the author)

Program

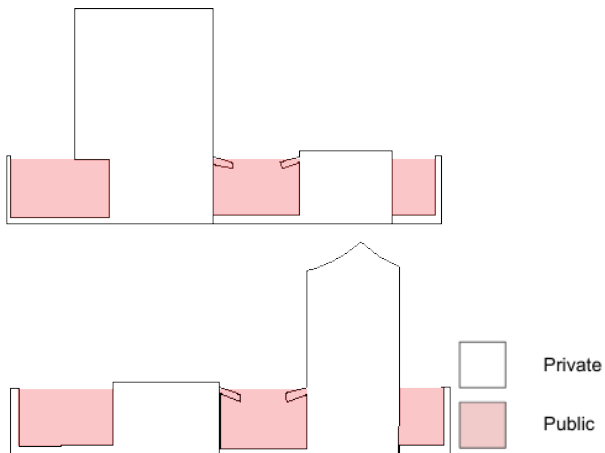


Figure 4.31 Public and private spaces (base drawing from the plan, source: by the author)

Public and private spaces

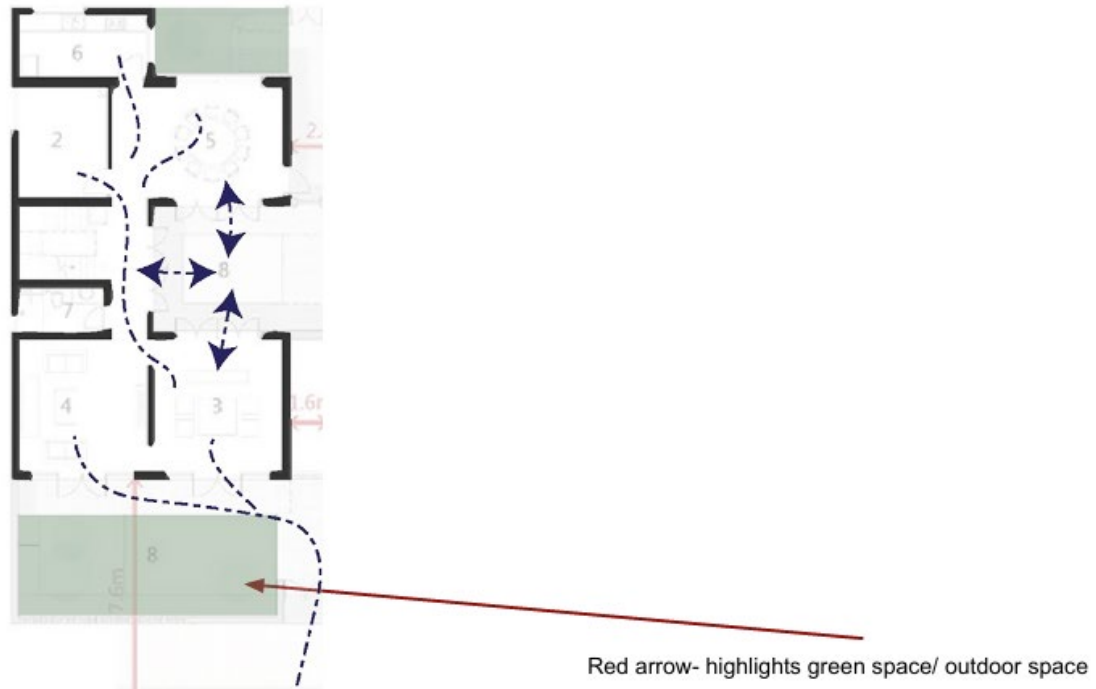


Figure 4.32 Circulation (base drawing from Arch Daily, diagram source: by the author)

Blue line circulation

Circulation

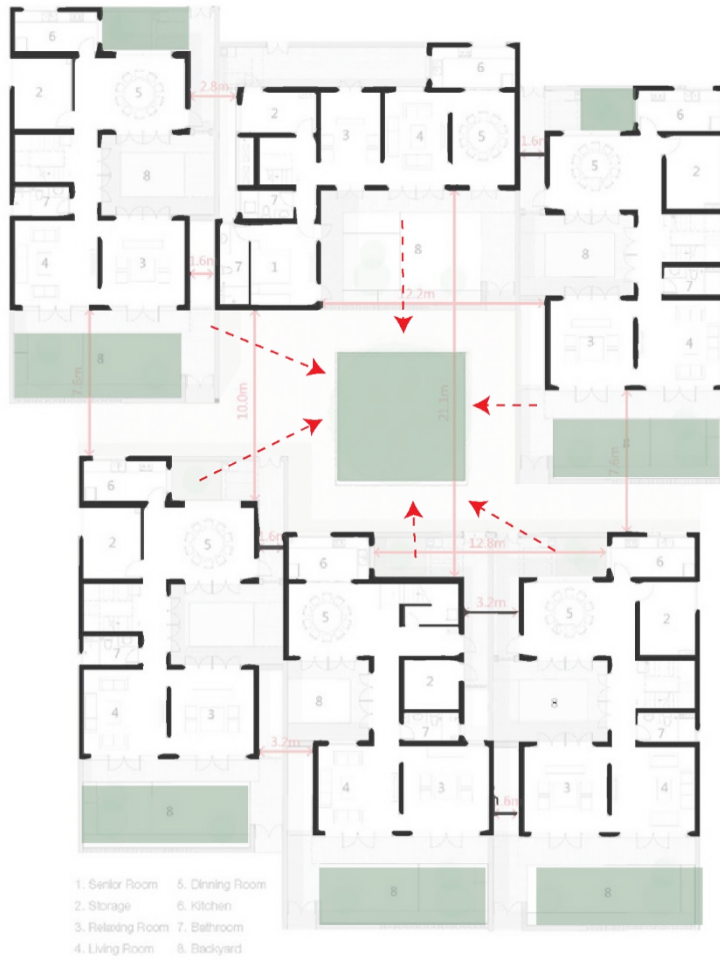


Figure 4.33 Connection (base drawing from Arch Daily, diagram source: by the author)

The connection between housing is highlighted in red

Connection

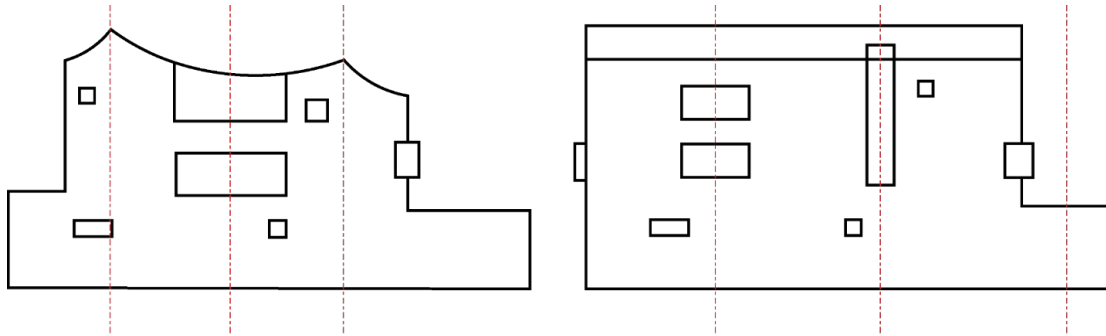


Figure 4.34 Façade (diagram source: by the author)

The design follows a traditional roof style with asymmetrical ridges. The façade features openings of various sizes.

Façade

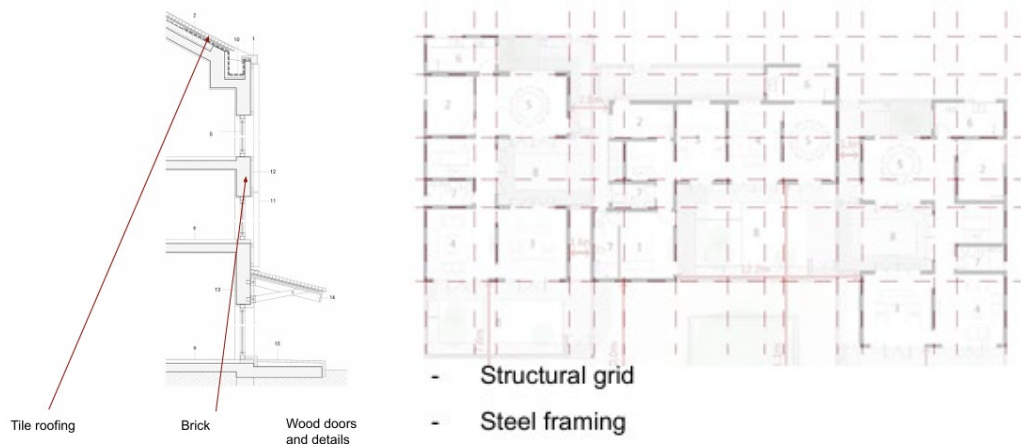


Figure 4.35 Structure and Materiality (base drawing from Arch Daily, diagram source: by the author)

Structure and Materiality

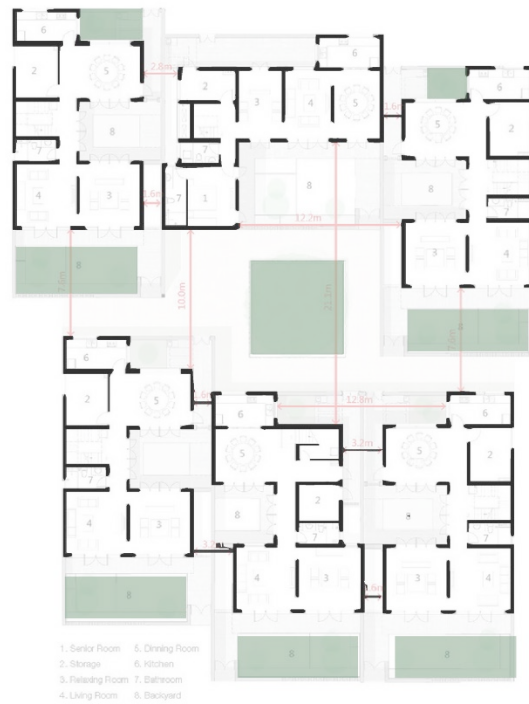


Figure 4.36 Courtyard Design (base drawing from Arch Daily, diagram source: by the author)

Courtyard Design

The design shows that the courtyards act as natural cooling chambers. It facilitates air movement and creates shaded areas.

Sustainability

Ventilation

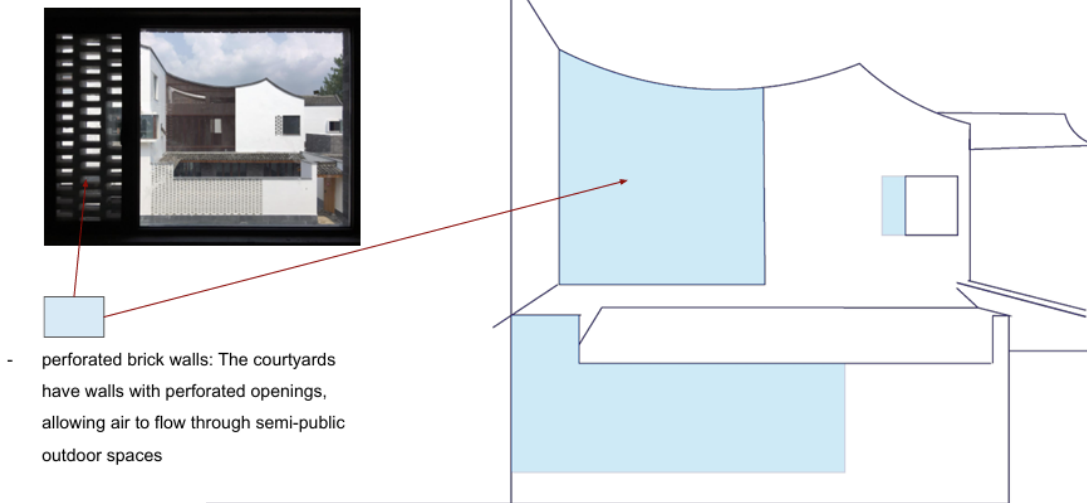


Figure 4.37 ventilation (picture from Arch Daily, diagram source: by the author)

Ventilation

This project has a great balance between sustainability and community integration within a rural-to-urban context. The analysis of this project will provide an understanding of how building forms that prioritize community engagement, low-cost construction, and traditional aesthetics can be scaled and integrated into a larger urban context while maintaining cultural relevance and social sustainability.

Precedent three: Gando Primary School



Figure 4.38 Gando Primary School (source: Kere architecture)

Name: Gando Primary School

Purpose: School

Architect: Diébédo Francis Kéré

Location: Gando, Burkina Faso

Construction period: 1999-2001

The Gando Primary School is a building that uses available local materials. It serves the community. The design is climate-responsive and scalable. Almost all the materials used for

the building are sustainable. It was a cost-effective solution that addressed the needs of the community. The core idea of the design is to promote a comfortable learning environment in the harsh climate of the location. It is a successful, sustainable architectural solution.²³



Figure 4.39 Gando Primary School (source: Kere architecture)

²³ ArchDaily. "Gando Primary School Extension / Kéré Architecture," April 27, 2016. <https://www.archdaily.com/785978/primary-school-in-gando-extension-kere-architecture>. "Infrahub.Africa." Accessed March 13, 2025. <https://www.infrahub.africa/case-studies/gando-primary-school>. "Kéré Foundation - Education." Accessed March 13, 2025. <https://www.kerefoundation.com/en/projects/education>.



Figure 4.40 Gando Primary School (source: Arch Daily)

Site and context analysis

The project is located in the Centre-Est Region, Boulgou Province, Burkina Faso, West Africa. The site has isolated trees and pockets of clusters of traditional housing nearby.



Figure 4.41 site plan (source: Google Earth)



Figure 4.42 site plan (source: Google Earth)

Idea+form layout

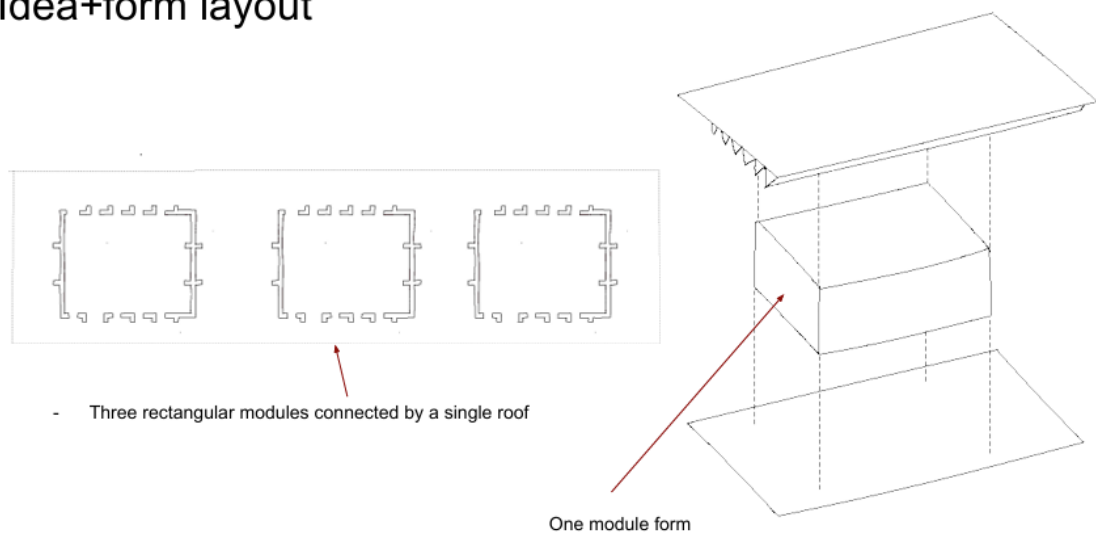


Figure 4.43 Idea and form layout (source: by the author)

Idea + form layout

Simple and rational organization.

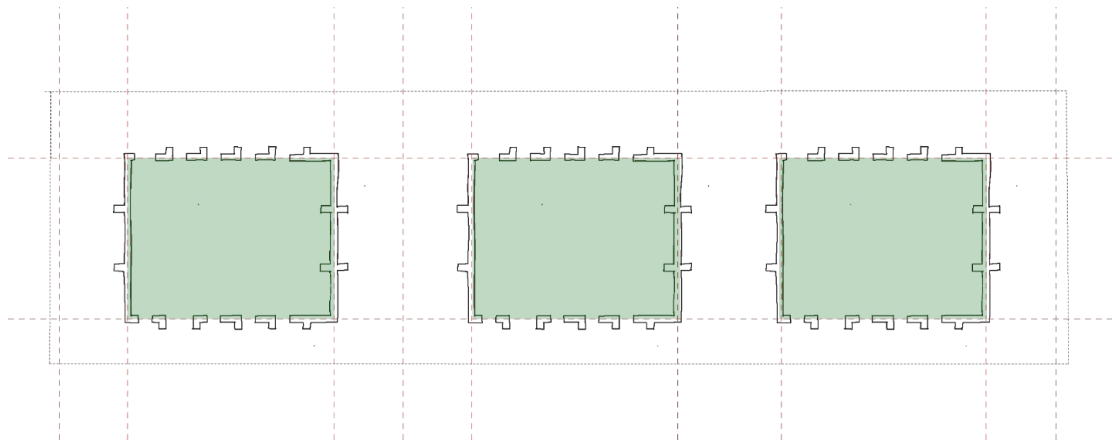


Figure 4.44 Program (source: by the author)

Program

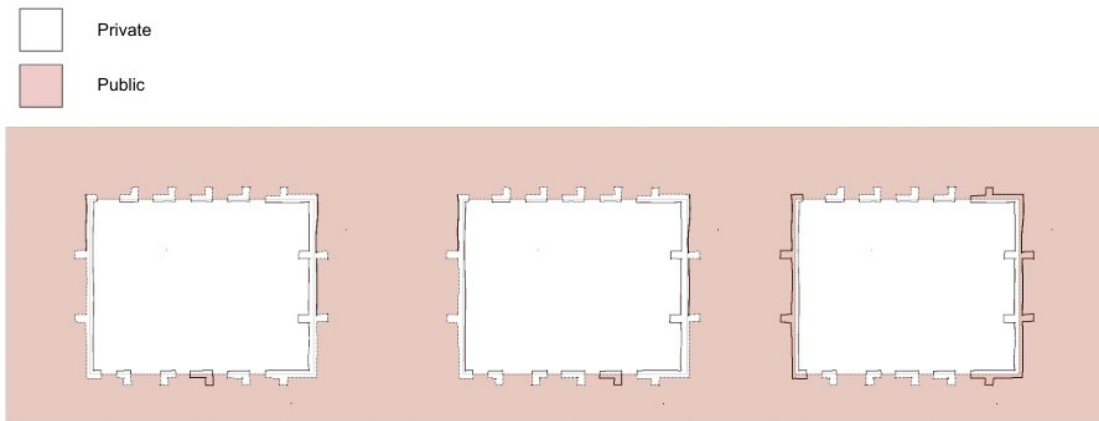


Figure 4.45 Public and private spaces (source: by the author)

Public and private spaces

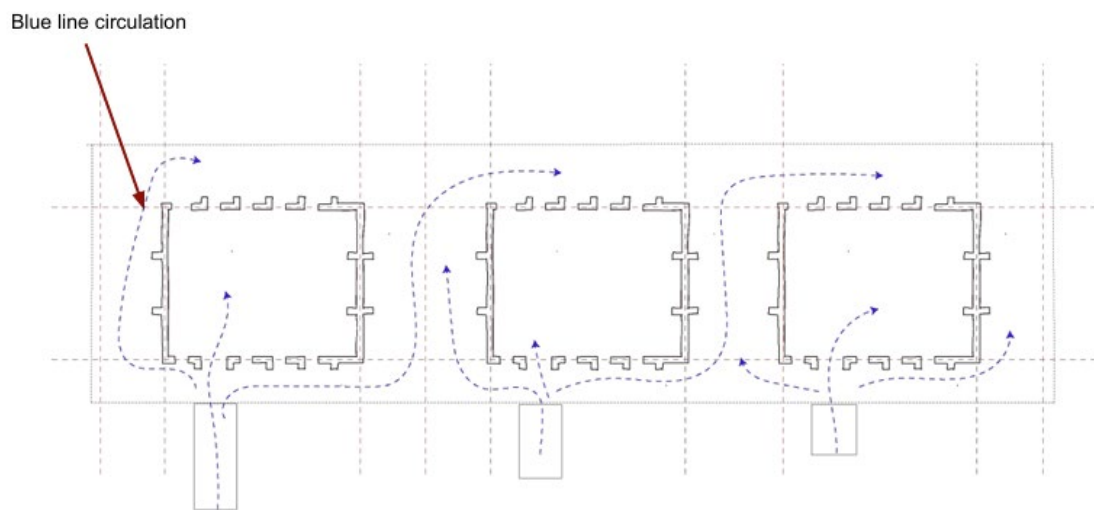


Figure 4.46 Circulation (source: by the author)

Circulation

The building is designed to maximize circulation efficiency.

The connection space are highlighted in red

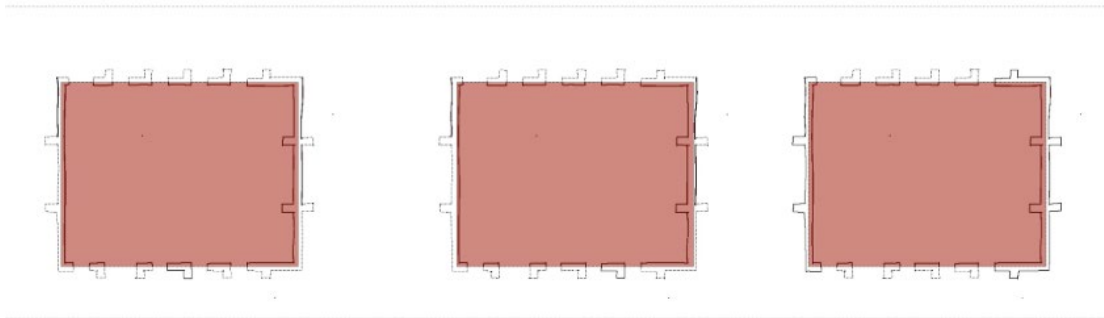


Figure 4.47 Connection (source: by the author)

Connection

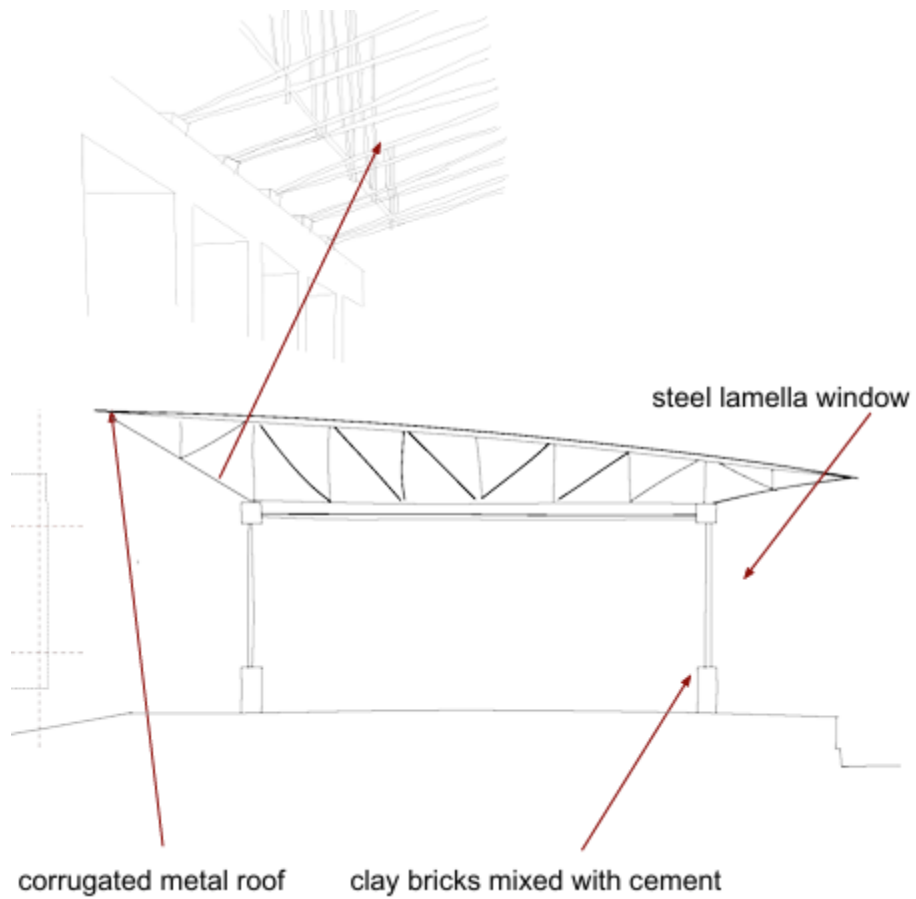


Figure 4.48 structure and materiality (source: by the author)

Structure and Materiality

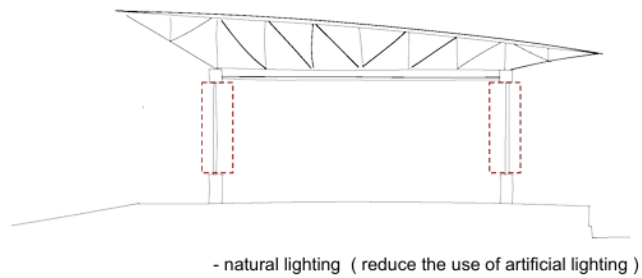


Figure 4.49 Sustainability (source: by the author)

Sustainability

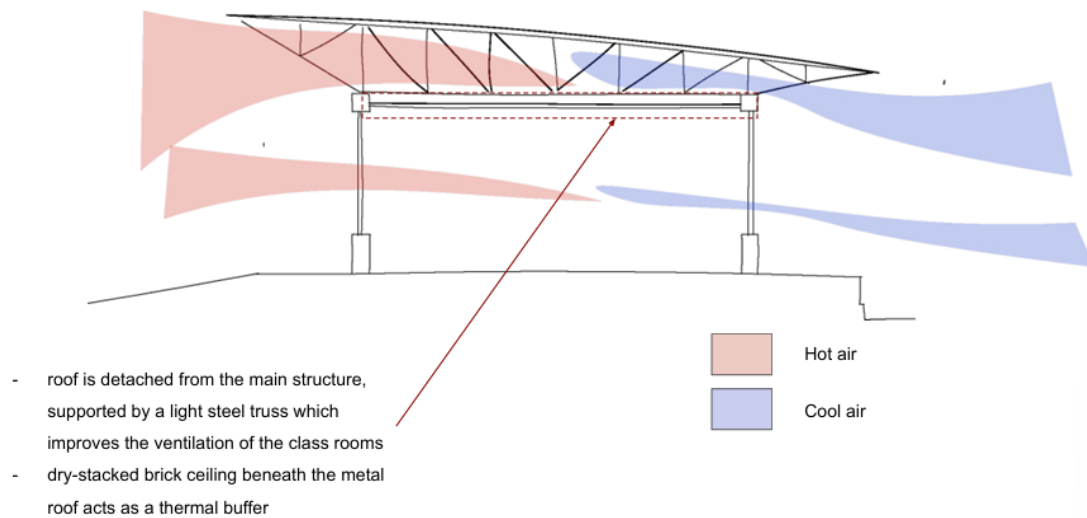


Figure 4.50 ventilation (source: by the author)

Ventilation

The Gando Primary School demonstrates how architecture can be both socially and environmentally sustainable, offering valuable insights into creating affordable, culturally relevant structures that encourage engagement. This project directly contributes to my thesis by providing a clear example of how architecture can address local housing and public space shortages through affordable and environmentally sensitive design.

Precedent four: Bondy Project



Figure 4.51 Bondy Project (source: Arch Daily)

BONDY is a social housing project

Purpose: Housing

Architect: Guerin & Pedroza Architectes

location:3-5-7, rue Germaine Tillon, 93140 Bondy, France

Built: 2013

This social housing project, located in France, is designed in a way that each mass creates its community. The project focuses on providing affordable housing while incorporating sustainable design elements. It features three core circulation spaces that define the entire mass, with each shifting mass creating a unique spatial experience. The arrangement of the masses not only addresses the practical need for housing but also creates a dynamic, communal environment where residents can interact and form connections. This project successfully integrates both functionality and sustainability, ensuring that the design promotes long-term livability and environmental responsibility.²⁴

²⁴ ArchDaily. "BONDY / Guérin & Pedroza Architectes," August 30, 2013. <https://www.archdaily.com/421933/bondy-guerin-and-pedroza-architectes>. Architizer. "BONDY by Guerin&Pedroza Architectes," January 17, 2014. <https://architizer.com/projects/bondy/>.



Figure 4.52-3 Bondy Project (source: Arch Daily)







Figure 4.54-56 Bondy Project (source: Arch Daily)

Site and context analysis

- located in the northeastern suburbs of Paris, France, diverse and rapidly developing urban area and well-connected by public transportation



Figure 4.58 Bondy Project site plan (source: Google Earth)

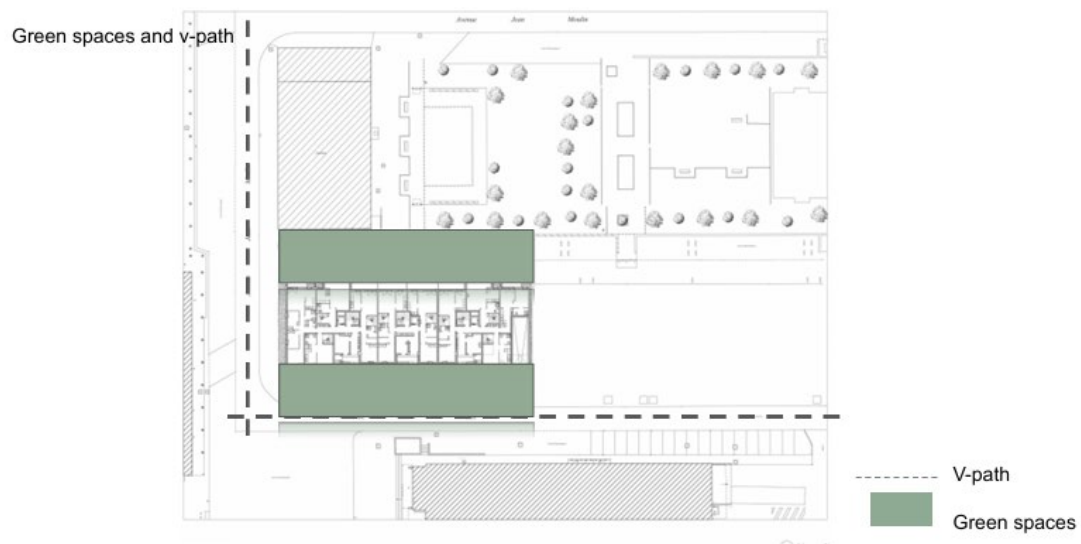


Figure 4.59 site plan diagram (source: Arch Daily, diagram by the author)

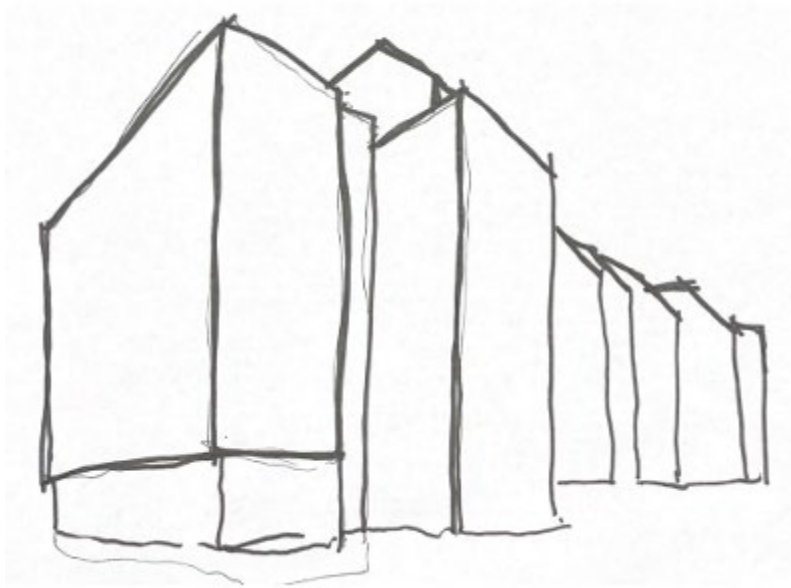


Figure 4.60 idea and form (source: by the author)

Idea+form

The extruded part is highlighted to emphasize the hierarchy

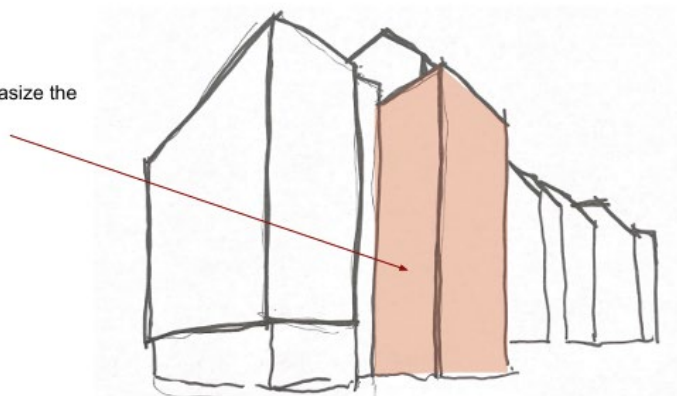


Figure 4.61 hierarchy (source: by the author)

Hierarchy

Shifted volumes define smaller social units.

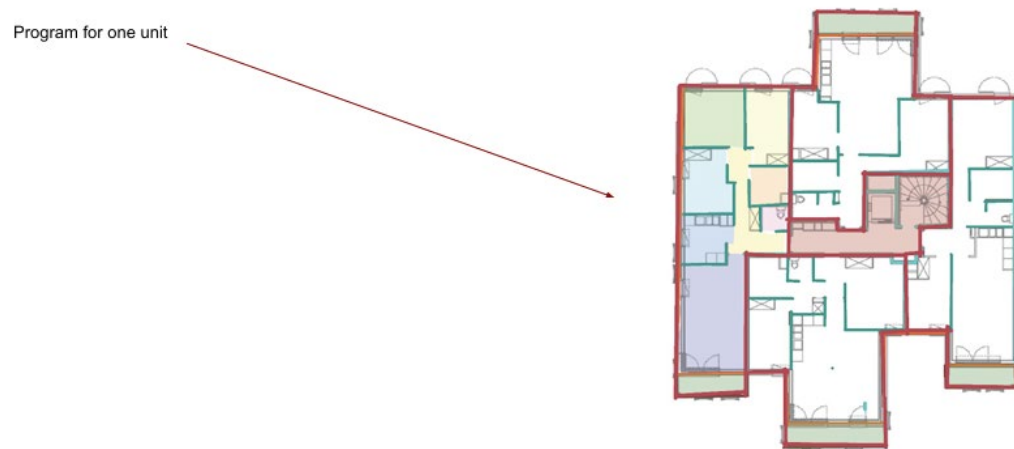


Figure 4.62 program (source: by the author)

Program

Multi-family residential with shared amenities.



Figure 4.63 public and private spaces (source: by the author)

Public and private spaces



Figure 4.64 circulation (base by Arch Daily, source: by the author)

Circulation

Residence divided into three parts, each with its own access and elevator (highlighted in red)



Figure 4.65 organization (source: by the author)

Organization

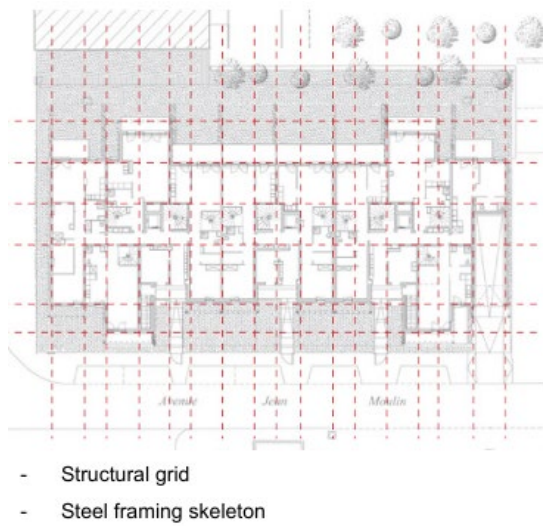


Figure 4.66 grid (base by Arch Daily, source: by the author)

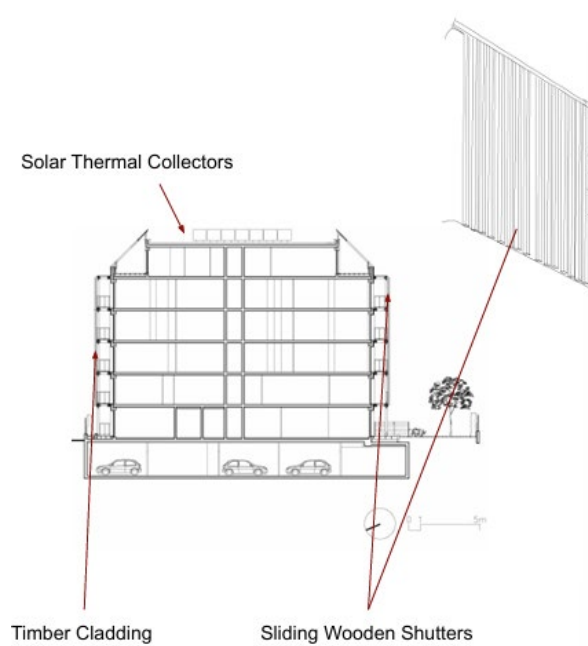


Figure 4.67 detail and materiality (base by Arch Daily, source: by the author)

Structure and Materiality



Figure 4.68 Sustainability (base picture by Arch Daily, source: by the author)

Sustainability

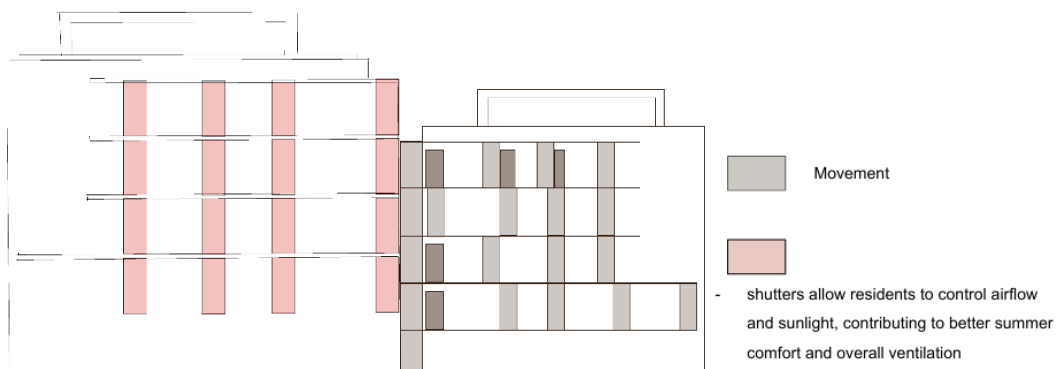


Figure 4.69 ventilation (source: by the author)

Ventilation

This project highlights how organization of the building defines the experience of the user.

Precedent five: Affordable housing, The Integrated Housing Development

Programme



Figure 4.70 condominium project (source: by Ethiopia realty)

Condominium project

Purpose: Housing

Architect: Ethiopian Government Housing Project Unit (under the Integrated Housing Development Program - IHDP)

Location: Gotera Addis Ababa Ethiopia

Built: in the 2000s

The affordable condominium project in Addis Ababa began as part of the Millennium Development Project, which aimed to tackle major issues in Ethiopia. The project features different types of typologies depending on the location and the budget assigned for the building. The 10/90 project is the one that caters to low-income people. The building uses durable materials that require minimal maintenance for longevity, rather than relying on sustainable materials. The core idea of the building is to improve living environments in Ethiopia through a larger program. It provides rapid, low-cost housing for the expanding urban population. It strives to maximize density while retaining livability. It encourages mixed-income, multigenerational use and is community-focused from construction to completion, as it creates employment for the low-income community during construction and provides living spaces upon completion.²⁵



Figure 4.71 condominium project (source: Google Earth)

²⁵ Unhabitat. Accessed May 17, 2025. <https://unhabitat.org/sites/default/files/download-manager-files/Condominium%20Housing%20in%20Ethiopia.pdf>

Zoning context

- residential/industrial/commercial mix nearby



Figure 4.72 zoning context (source: Google Earth)

- Housing typology within one compound
- Courtyards and communal areas



Figure 4.73 housing typology (source: Google Earth, diagram by the author)

Site and context analysis

- Housing typology within one compound
- block formation
- Some variety in facade design but mostly similar

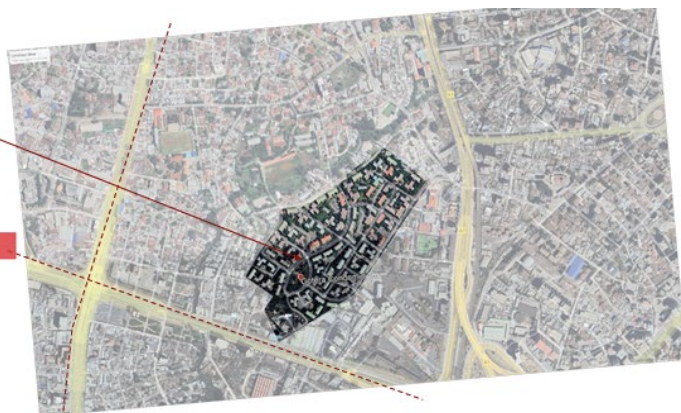


Figure 4.74 housing typology cont. (source: Google Earth, diagram by the author)

Idea + form

Program for 5 unit types



Figure 4.75 Program (source: UN-Habitat, diagram by the author)

Program



Figure 4.76 access (source: UN-Habitat, diagram by the author)

- Stair is represented with a vertical red block
- Horizontal red block is the corridor access



Figure 4.77 access (source: UN-Habitat, diagram by the author)

Access

Structure and materiality

- The structure is many Reinforced concrete frame structure
- Hollow concrete blocks for infill walls
- Precast staircases
- Plaster/render finish with minimal ornamentation
- Corrugated metal roofs or flat roofs in newer phases



Figure 4.78 Structure and materiality (source: UN-Habitat, diagram by the author)

Structure and materiality

The condominium project demonstrates how the existing solution functions effectively in terms of organization, order, and circulation, from the point of entry to the overall massing efficiency.

Shortcoming

The current housing solution lacks in addressing Ethiopia's social and cultural needs. The condominium project offers minimal common spaces within the building, and ground-floor gathering spaces are left undeveloped or underutilized. Additionally, the buildings rely on a single exit stair, making it inaccessible to many, as they don't adequately accommodate residents who depend on elevators or other means of circulation. This solution is based on standardized, high-density apartment blocks that apply a one-size-fits-all model. As a result, it excludes traditional low-rise housing typologies that are more responsive to the diverse family structure, social practices, and everyday lifestyle found in Addis Ababa.

Conclusion

This chapter has explored five key precedents that collectively inform and strengthen the direction of the thesis. Each case study was selected for its unique response to challenges of affordability, sustainability, community integration, and adaptability issues that are central to the affordable housing crisis in Ethiopia.

Karl Marx Hof demonstrates how architecture can respond to social and political change through large-scale, dignified housing for working-class families, offering lessons in urban integration and public space. Dongziguang Affordable Housing addresses displacement caused by urbanization, maintaining cultural identity through traditional forms while providing cost-effective, scalable solutions. Gando Primary School highlights the importance of using local materials and community-driven design to meet budget and climatic demands. The Bondy

Project contributes insight into spatial hierarchy and the creation of community within dense, affordable housing using sustainable practices. Finally, the 10/90 Condominium Project in Addis Ababa provides critical local context, revealing the strengths and shortcomings of Ethiopia's current housing model, particularly in terms of scalability, material use, and socioeconomic integration.

Together, these precedents offer diverse strategies and principles that inform potential solutions for Ethiopia's affordable housing needs.

Chapter 5: Zones and the Program

Program Abstract

This project addresses Ethiopia's pressing housing shortage by developing a program for affordable, sustainable, and scalable housing solutions that strengthen communities. With rapid urbanization and a growing population, the demand for accessible housing has become increasingly critical. This project aims to explore how architectural design can offer effective solutions to this issue by creating affordable, well-designed housing that balances cost, sustainability, and scalability. The research contributes to the ongoing conversation on housing in developing countries, particularly in Addis Ababa, Ethiopia, by considering how architecture can adapt to local cultural, environmental, and social contexts. The program will investigate key factors such as space utilization, community interaction, and environmental impact in designing housing that strengthens community bonds. This building program aligns with the thesis by connecting architectural strategies to the larger goals of creating affordable housing that promotes sustainable living and strengthens social ties. It provides a framework to test and apply the thesis in real-world scenarios, helping to validate the proposed solutions for addressing Ethiopia's housing challenges.

Program zones

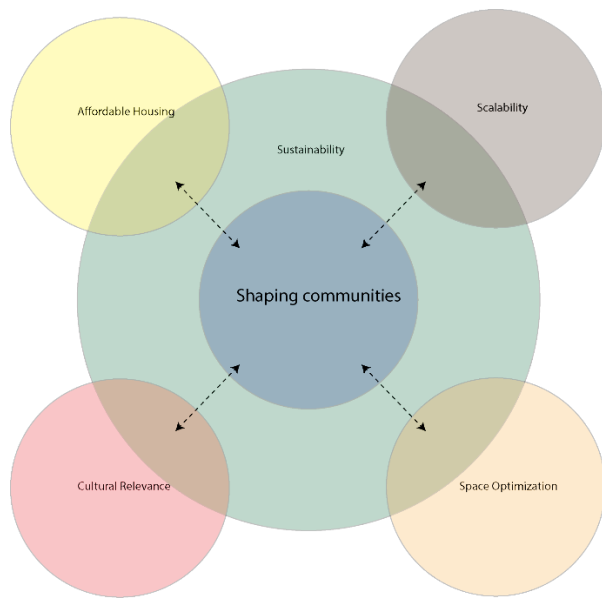


Figure 5.1 program zone abstract (source: by the author)

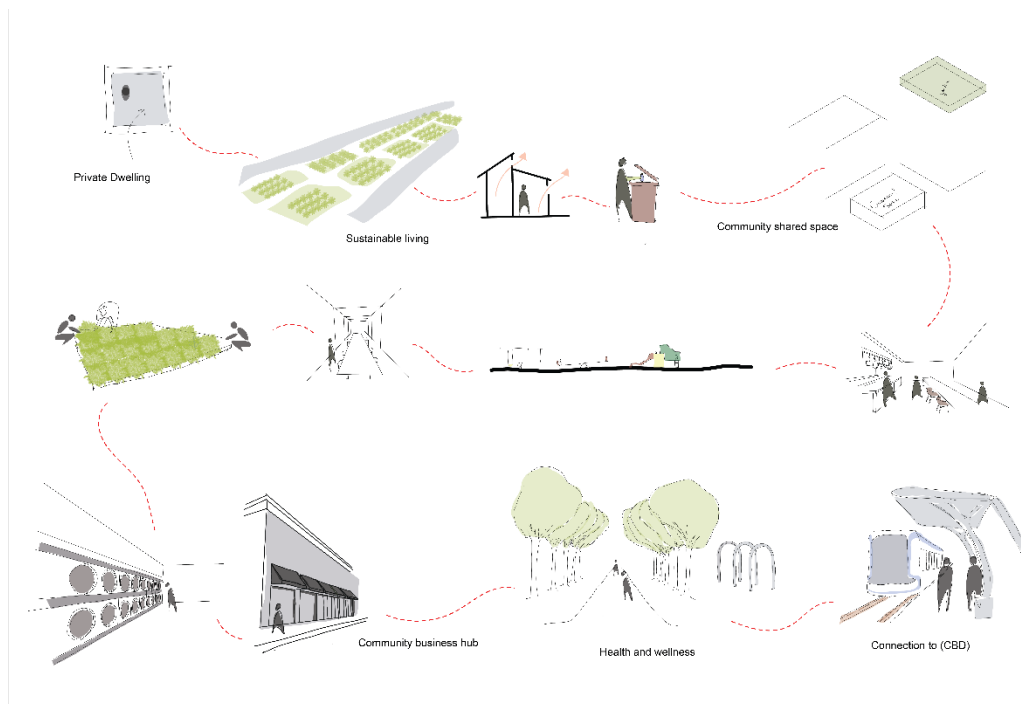
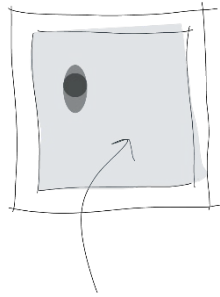


Figure 5.2 program zone vignettes (source: by the author)



Private Dwelling

Figure 5.2.1 Private Dwelling (source: by the author)

Private Dwelling

Place of rest and dwelling for the residents. These dwellings are designed to support a variety of lifestyles and household sizes, offering options such as studios, one-bedroom, two-bedroom, and three-bedroom apartments.

- A place to rest and recharge.
- Privacy

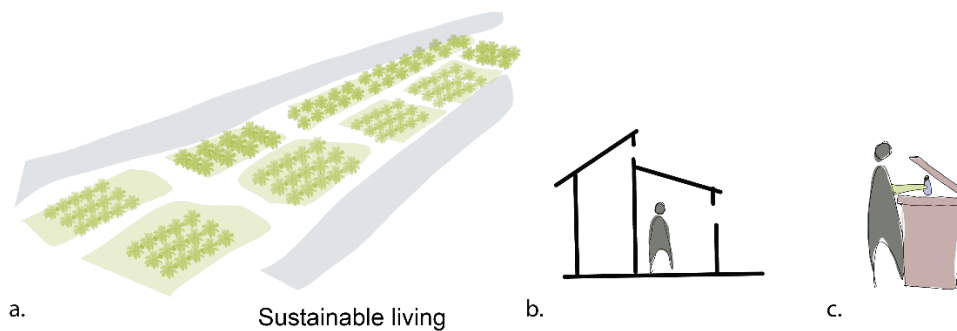


Figure 5.2.2-4 Roof Garden, natural ventilation, waste recycling (source: by the author)

Sustainable Living

Green spaces and other sustainable options for the residents. Rooftop farms offer opportunities for local food production and community gardening, helping food security and engagement. Natural cooling systems, such as passive ventilation (b.), green roofs (a.), and shaded walkways, reduce reliance on artificial climate control, thereby decreasing the environmental footprint. Waste management and recycling centers (c.) ensure residents have access to convenient and effective methods of disposing of and recycling waste.

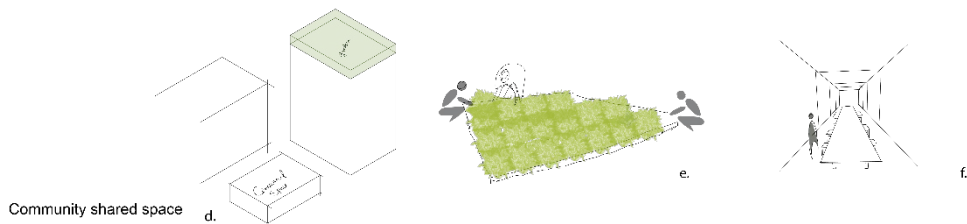


Figure 5.2.5-7 communal gathering space, garden, community hall (source: by the author)

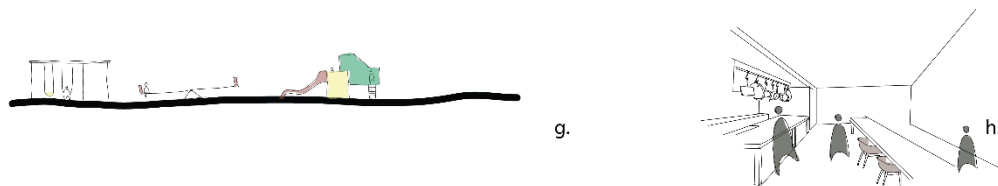
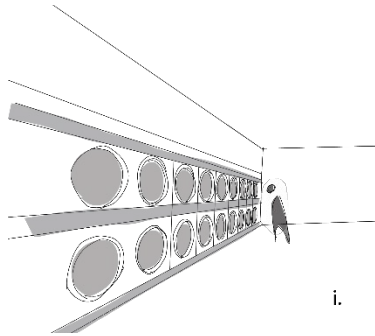


Figure 5.2.8-9 Playground and shared kitchen (source: by the author)



i.

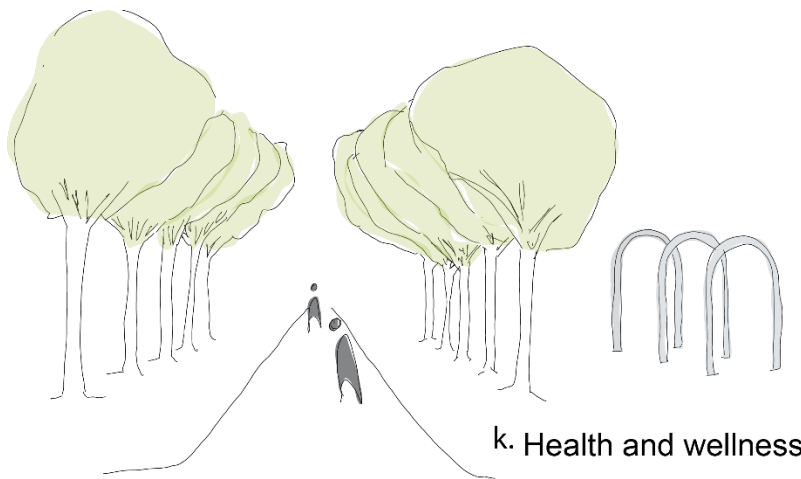
Figure 5.2.10 Laundry (source: by the author)

Communal and Shared Spaces

Communal shared spaces for the community to promote engagement, and sense of community, and social interaction. Shared kitchens (h) and dining halls (h) serve as places for residents to cook, eat, and gather together, strengthening communal bonds.

Dedicated laundry facilities (i) are provided for convenience and accessibility, reducing the need for individual appliances and promoting efficient resource use.

- Social interaction



k. Health and wellness

Figure 5.2.11 walking trail and a bike racks (source: by the author)

Multipurpose Event Space

Multipurpose event space serves as a central core for social, recreational, and wellness activities. This space includes a well-designed playground to support outdoor play. (g) Health and wellness amenities like walking trails and fitness areas (k) to promote healthy living and mental well-being.

- Gathering space for the residents.
- Outdoor sports area



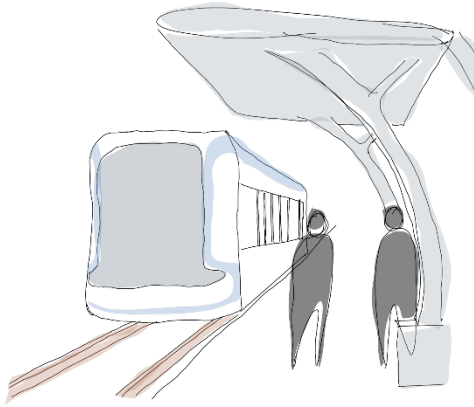
j. Community business hub

Figure 5.2.12 commercial hub (source: by the author)

Commercial

Self-sufficient community (an economic hub for the residents). (j) Local markets within the site so residents can have access to fresh food and other daily essentials without having to travel far.

- Local Markets



I. Connection to (CBD)

Figure 5.2.13 connection to the central business district (source: by the author)

Connectivity

Access to affordable transportation to the site. Pedestrian walkways ensure safe walking routes throughout the site. Bicycle racks and bike-sharing stations encourage sustainable mobility, making it easy for residents to adopt active and environmentally friendly transportation methods.

- Public Transportation Access Points (i)

Chapter 6: Site Selection and Analysis

Chapter 6

Site Positioning

Affordable Housing in Addis Ababa

In the context of affordable housing, the site is not just a passive location but an active form that shapes every step of the project. Since the focus is on affordable housing, it is deeply intertwined with urban infrastructure and access to resources. My thesis explores affordable housing in Addis Ababa, a city facing rapid urban growth and increasing inequality. For this thesis, site selection is not just a strategic decision but an important factor in the success, impact, and relevance of the final design. The chosen site helps define the targeted factors and who the project serves, how it functions, and how sustainable it can be in the long term.

Why Site Matters to My Thesis Question

Affordable housing design in Addis Ababa, Ethiopia, is highly dependent on the urban context. In a city like Addis Ababa, where access to services and economic opportunities is disproportionately distributed, the thesis question focuses on creating housing solutions that are not just low-cost but livable, connected, and sustainable for low-income groups. The site location is an important factor in achieving these goals. The ideal site will be integrated with the city core to help reduce transportation costs and increase access to jobs, education, and community engagement. In Addis Ababa, most affordable housing is located on the outskirts of the city and lacks consideration for long-term social and economic sustainability. My thesis questions this by trying to

address the affordable housing crisis in the city and exploring an alternative approach to make it accessible for low-income groups. Something that was highlighted while exploring my thesis question was the importance of proximity, access, and inclusion in the site selection process.

How the Site Impacts the Research and Design Process

The site selection will have a direct influence on both the research and the architectural design solution. If the site is located near the Central Business District (CBD), the design would mainly focus on a denser residential solution, possibly with a vertical housing unit model that has integrated community spaces for the residents, such as gathering areas and other amenities. These kinds of solutions help meet the needs of people with access to the Central Business District, making it easier to access their jobs and education. If it's on the periphery of the city, the design has to accommodate the needs of the people who live in that area. The program design would be different, as it has to consider economic opportunities such as workshops and small businesses for work, so residents can have local options to reduce the long commute to work and school, as well as to access other essentials. This change is to accommodate people based on the site location. Eventually, the site will guide not just the design but also redefine what affordability means depending on the different urban settings. Some of the factors that I'm prioritizing to ensure the success and relevance of the project are the following:

1. Access to public transportation

This is essential in addressing high transportation costs and allowing residents to get to their jobs, education, and healthcare within a reasonable distance.

2. Proximity to the city core

This offers better economic opportunities for the residents.

3. Walkability

The site needs to be pedestrian-friendly to reduce dependence on vehicles.

4. Access to essential services

All essential services, such as healthcare, markets, schools, etc., should be at a reasonable distance or even within a walkable radius. The lot size is a medium to medium-large plot to balance between density and livability. Another essential consideration is the existing social fabric of the area. Depending on the specific location, the site should serve a community that reflects the targeted group. An ideal site would allow for strong ties between new and existing communities. Finally, the site should have existing or planned infrastructure that can support the future of affordable design sustainably.

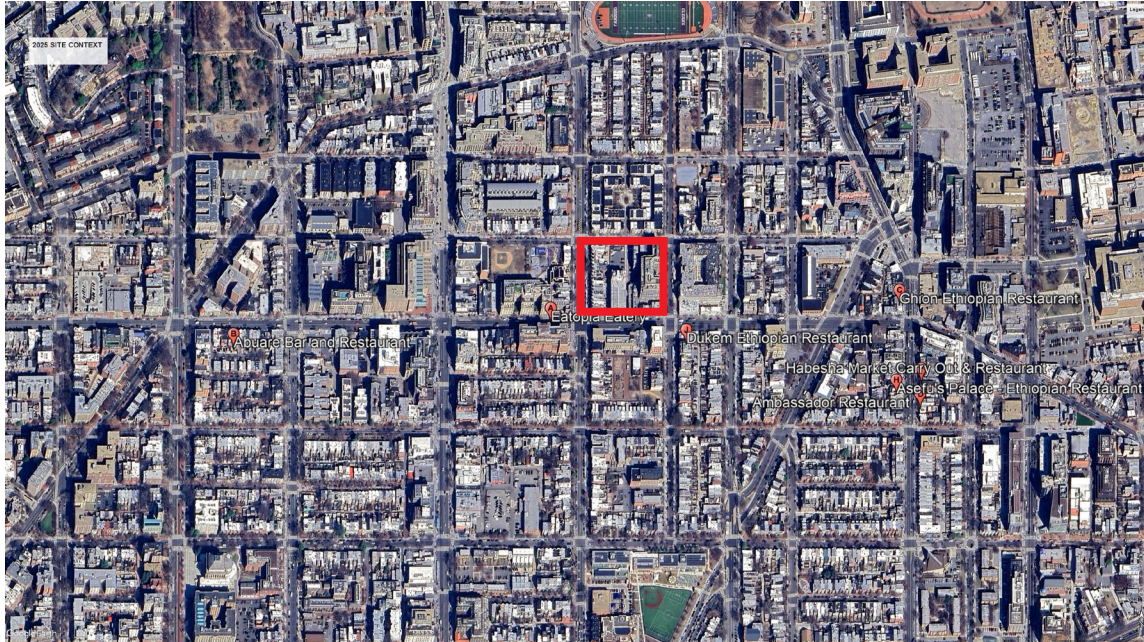


Figure 6.1 Site Zero (source: Google Earth, diagram by the author)

The highlighted lot between 14th NW and 13th NW on the U Street line (Google Earth)



Change over time diagram



Figure 6.2 change over time (source: Google Earth, diagram by the author)

Site relation

Ethiopian cuisine

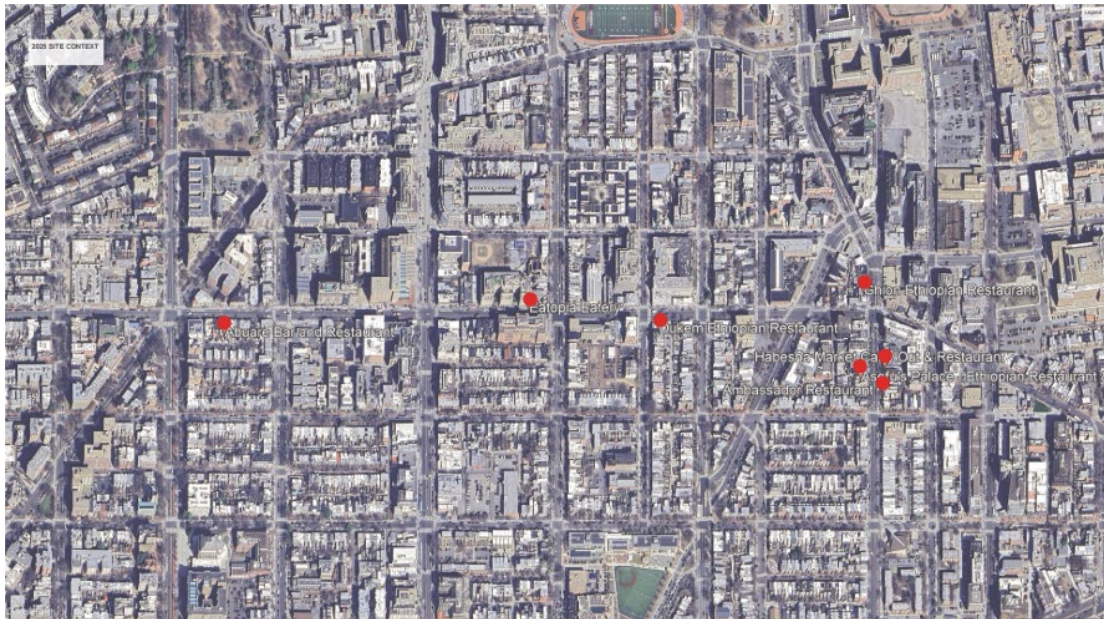


Figure 6.3 Site relation (source: Google Earth, diagram by the author)

Access

Transportation (public or affordable)



Figure 6.4 metro access (source: Google Earth, diagram by the author)

Corridor to Access



Figure 6.5 corridor (source: Google Earth, diagram by the author)

Figure 6.6 corridor (source: picture by the author)

U street vs V street

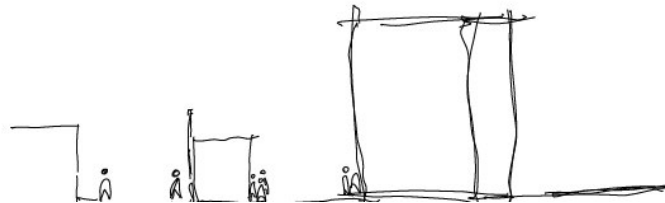
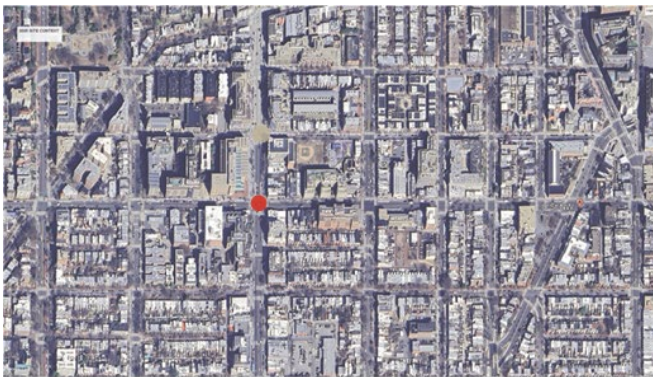


Figure 6.7 U street Vs V Street (source: Google Earth, diagram by the author, sketch by the author)

The relationship of the two streets to the lot.

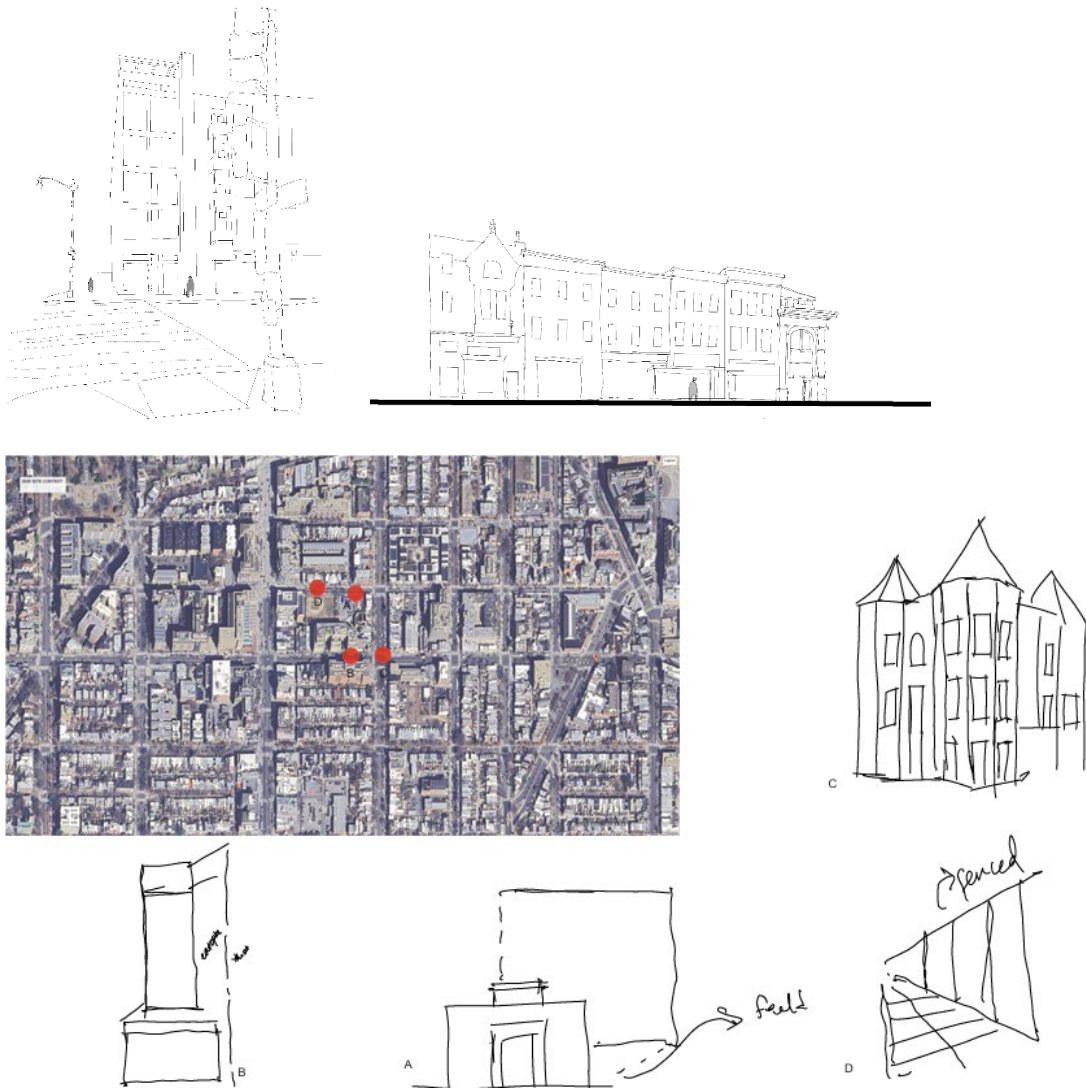


Figure 6.8 surrounding context (source: Google Earth, diagram by the author, sketch by the author)

Experience of the top and its surroundings.



Figure 6.9 surrounding context (source: Google Earth, diagram by the author, sketch by the author)

The existing context with vegetation.

V street side context and view



Figure 6.10 surrounding context (source: Google Earth, picture by the author)



Figure 6.11 Surrounding context (source: picture by the author)

Corridor to access (observation)

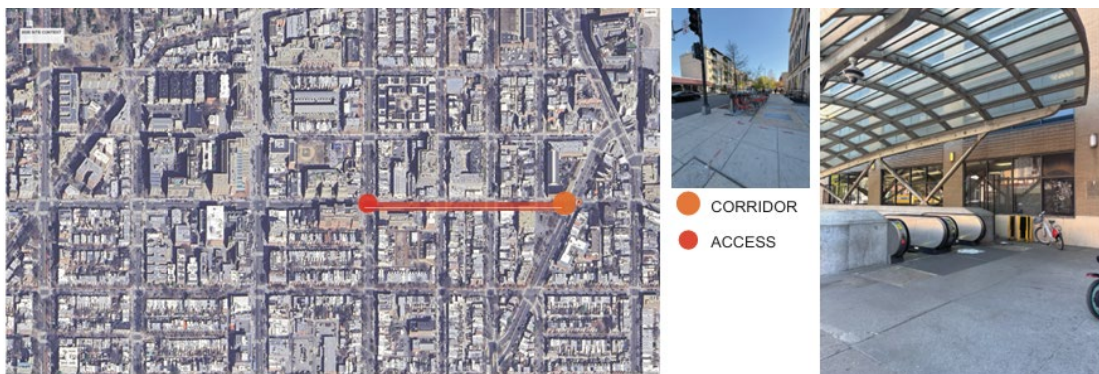


Figure 6.11 Surrounding context (source: Google Earth, diagram by the author, picture by the author)

When I got to the site, one thing that stood out to me was the contrast between U and V Street. Though only a few blocks apart, the two offered very different urban experiences within the same area, which was surprising. The U Street end of the site was vibrant the whole street leading up to the site had a lot of movement that was noticeably constant. Most people were engaged with work, errands, or getting to transit. It felt like a place where everyone was doing something. The reason I picked this site was the strong Ethiopian presence along U Street. It gave the area a cultural identity, with many Ethiopian businesses and locals near the site. The mix of mid-rise buildings with commercial bases also made it feel like an economically active and diverse location. The Metro was also less than a 10-minute walk from the site, making it convenient. This access and diversity made this site ideal for affordable housing, as it has cultural connections and strong transit access both important when considering affordable housing. Walking one block from U to V Street, I felt a completely different energy. The streets were quieter and more residential, with people walking just to walk, not necessarily to get somewhere. Kids and parents were near the basketball court and rowhouses right across from the site. The area felt less diverse in all aspects, including the architecture. This made me realize that the area can support both building types with different experiences. Recognizing the differences between U and V Street, we can create a housing strategy that respects both the need for vibrant, transit-accessible living and the importance of quiet, family-oriented spaces. The key is mindful transitions, architectural variety, and preserving community identity while making room for those who are vulnerable. We can support both the diversity and activity of U Street while preserving the calm and

unity of V Street. Clearer transitions, better differentiation between building types, and shared public spaces could help bring the two worlds together without losing what makes each one special.

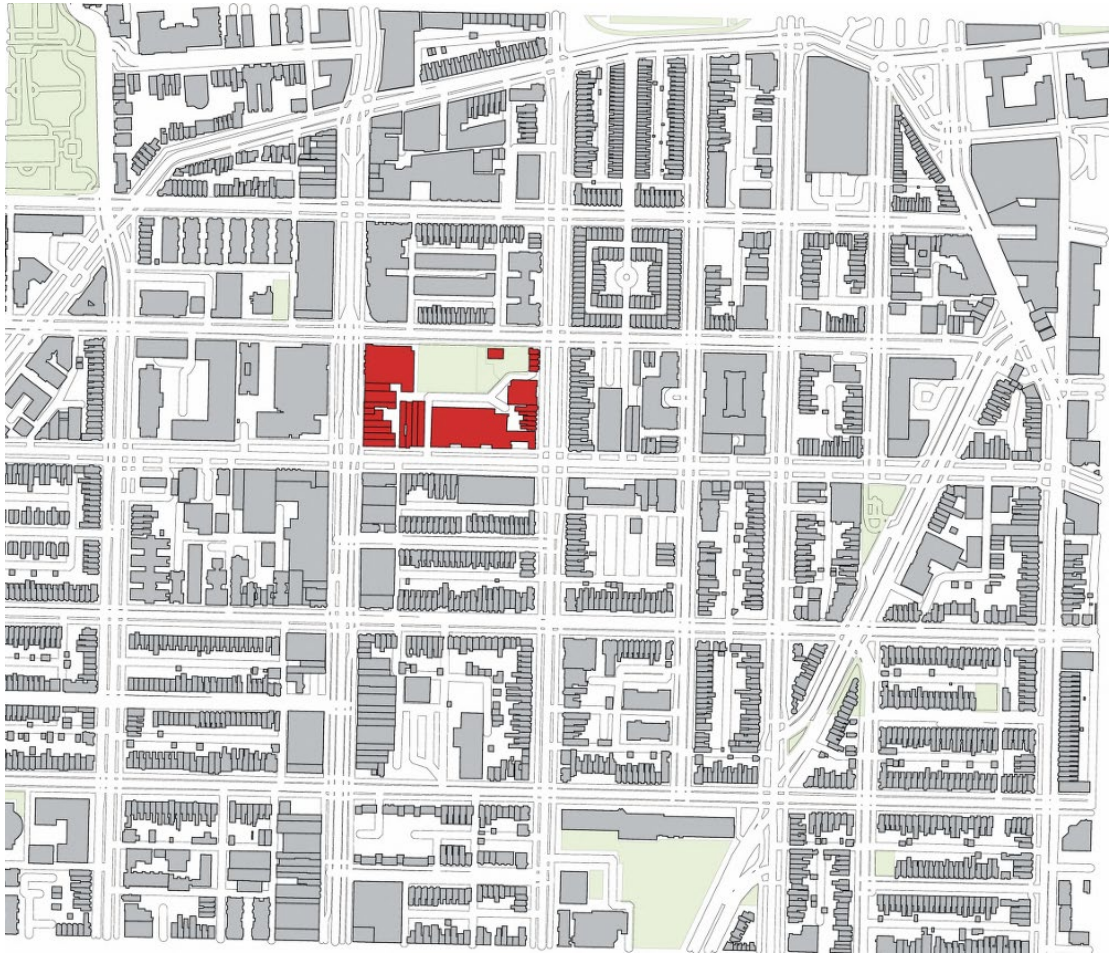


Figure 6.13 Site plan (source: CAD Mapper as base, diagram by the author)



Figure 6.14 Figure/ground (source: CAD Mapper as base, diagram by the author)

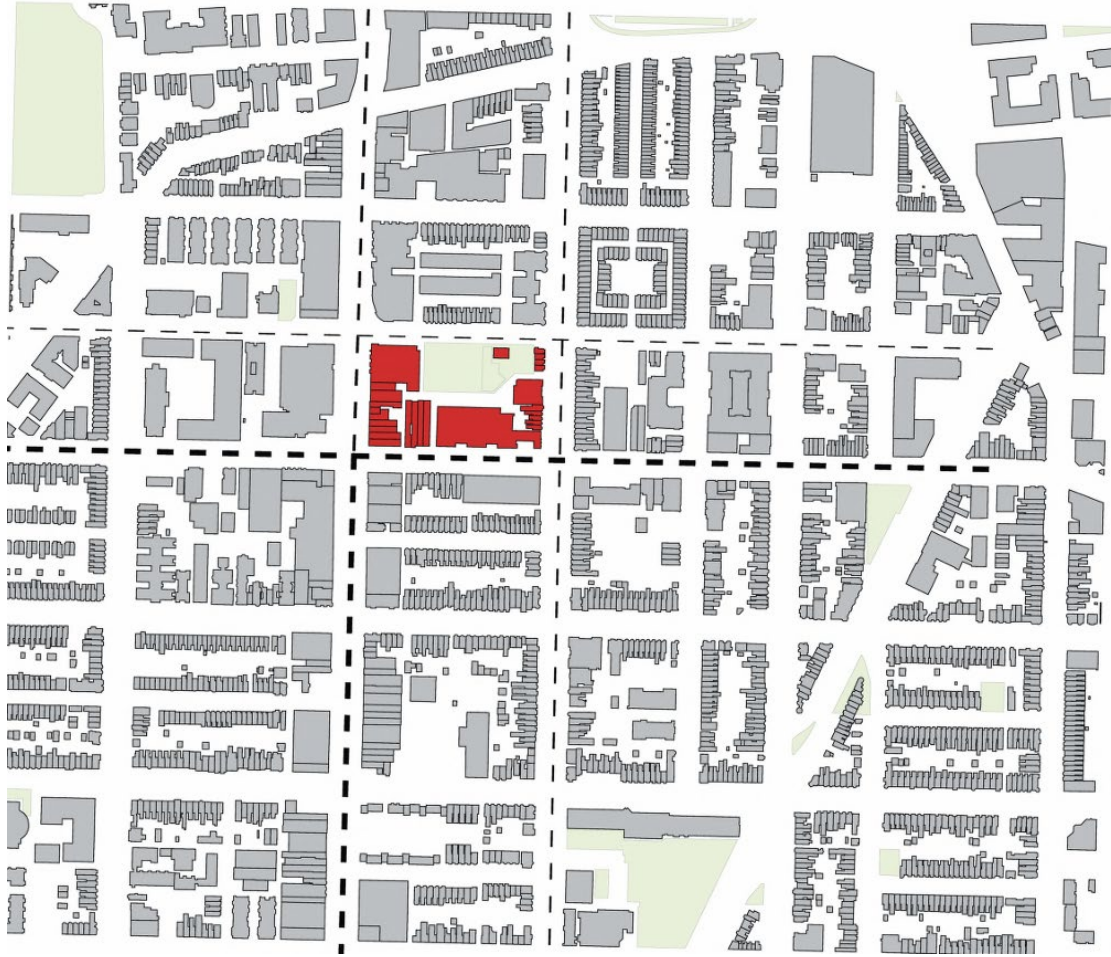


Figure 6.15 Path (source: CAD Mapper as base, diagram by the author)



Figure 6.16 Access diagram (source: CAD Mapper as base, diagram by the author)

Access diagram



Figure 6.17 Affordable housing diagram (source: CAD Mapper as base, diagram by the author)

Affordable housing diagram

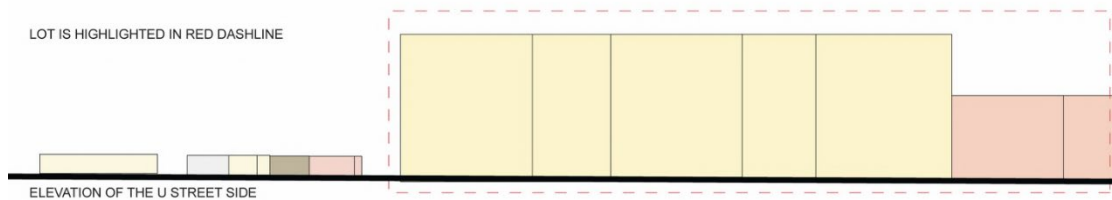


Figure 6.18 Elevation of the U Street side (source: by the author)

Elevation of the U Street side

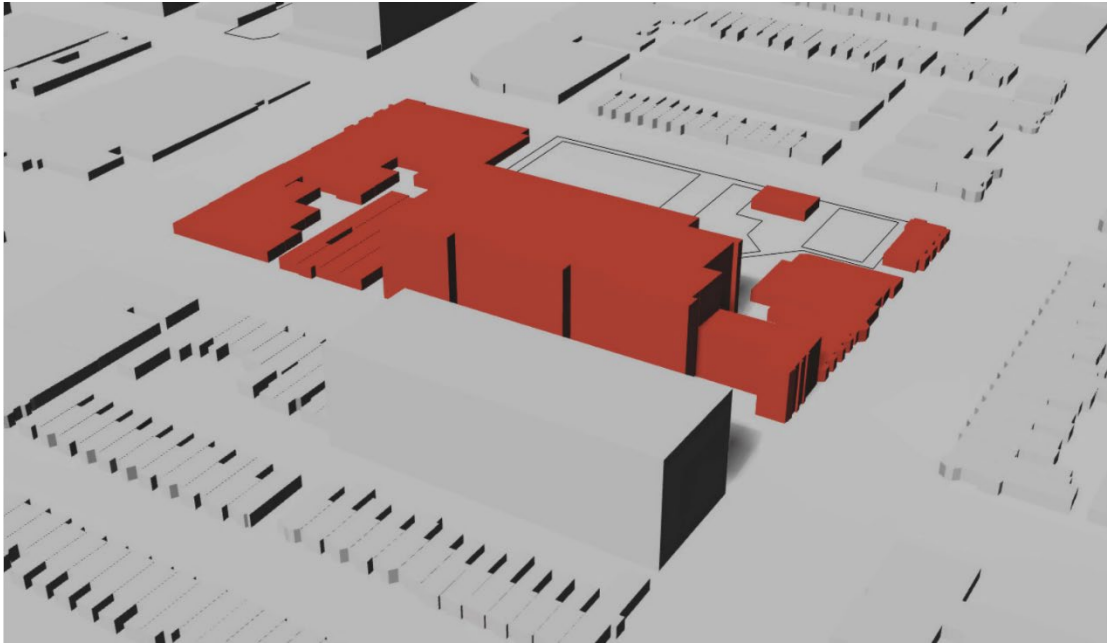


Figure 6.19 Axon (source: by the author)

Axon

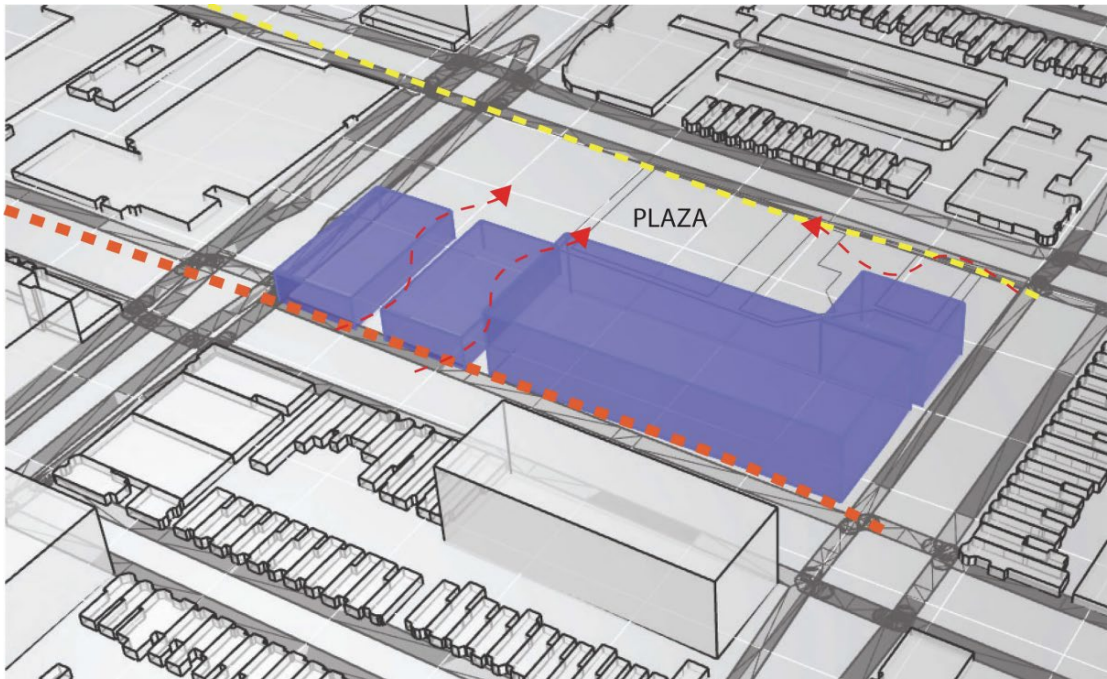


Figure 6.20 Massing strategy 1 (source: by the author)

Massing strategy 1

Three Entry Points

- Two from U Street
- One from V Street

Plaza Facing V Street

- A central open space oriented toward V Street for visibility and public gathering

Building Massing:

- Right Side: One 5-6 story building
- Back Side: One 2-story building

- Front: Two commercial spaces at ground level with residential units above (second floor)

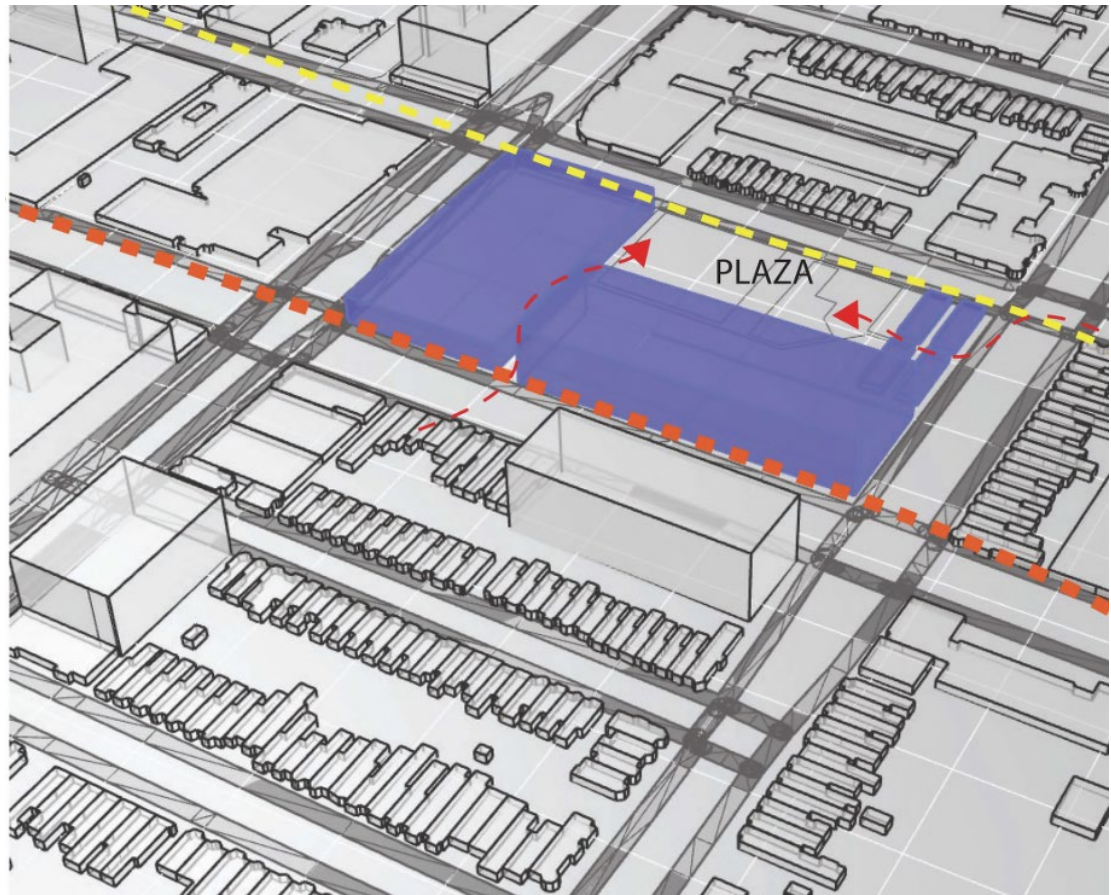


Figure 6.21 Massing strategy 2 (source: by the author)

Massing strategy 2

- Dual Entry Points
- Accessible from both U Street and V Street
- Plaza Facing V Street

The central open space is oriented toward V Street, enhancing visibility and public access FROM THE residential side.

- Building Massing:
- Right Side: One 5-6 story building

- Left Side: One 2-story building
- Rear: Four 1-story residential units positioned at the back

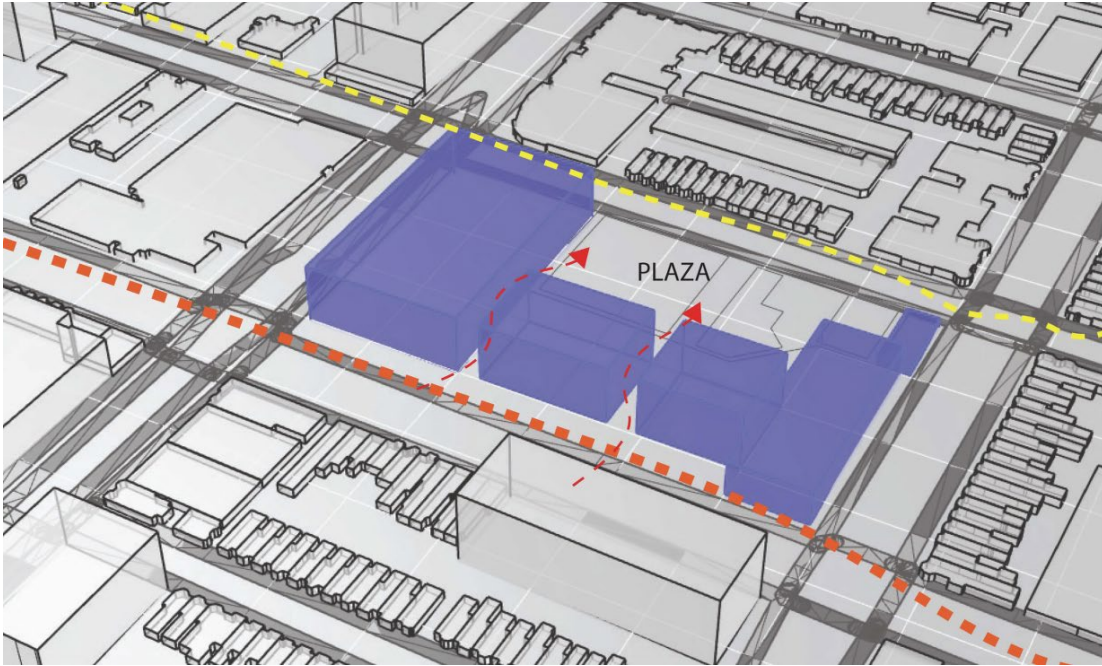


Figure 6.22 Massing strategy 3 (source: by the author)

Massing strategy 3

- Two Entry Points from U Street
- Interrupted Existing Massing

The existing continuous mass is broken to create a pedestrian path to the central plaza.

Plaza Oriented Toward V Street

The plaza opens up and faces V Street, enhancing public interaction and street visibility.

Building Heights along U Street:

- Three 5-6 story buildings front U Street
- A 2-story building is placed at the far-right end

A 1-story residential building is located at the rear (facing away from U Street on the v street line)

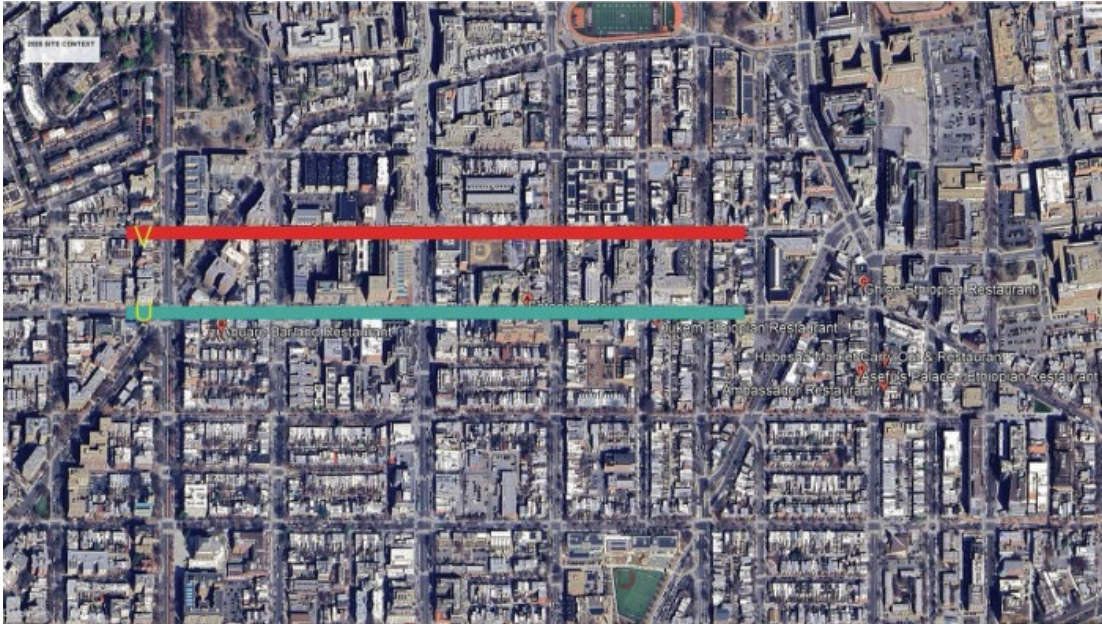


Figure 6.23 U and V street diagram (source: Google Earth)

3.B. Site Research Methodology

I employed several research methods for my Site Zero, including observation, ethnographic field study, documentation, and reflection.

Site Observation

I visited the site and walked around to experience it firsthand. I observed the types of buildings common in the area, the presence of convenience stores, and what the locals were doing on each street, U Street and V Street. I aimed to understand the similarities and differences between both ends of the lot. On the V Street end, most of the space was occupied by a baseball field and a basketball court. On the U Street

side, a mixed-use building and a one-story structure on the left end took up much of the lot.

Ethnography

On the U Street side, there was a high level of movement from both cars and pedestrians. At the back of the V Street line is a studio building that feels oddly positioned in front of the baseball field but not aligned with either the left or right end of the lot. The movement on U Street felt purposeful, with people moving to specific destinations, while V Street had a slower pace, with people walking more leisurely. The demographic makeup of the area was not very diverse.

Phenomenology

When I arrived at the site, the adjacent businesses created a sense of familiarity. The smell of traditional food and coffee stood out as a key sensory experience. In addition to the cultural connection, the site's direct access to transportation made it feel inclusive, offering access regardless of background. I walked up the left end of the alleyway to get to V Street, and it was not a comfortable experience. On the V Street side, children played basketball, parents stood nearby, and people with strollers were present. In contrast, U Street was brightly lit and visually harsh, but still full of people queuing, talking, and engaging with one another. Although the U Street end was chaotic, it provided valuable insight into how people move through and interact with a busy street. The cultural aspect also plays a major role in defining the area and how people dwell in it. The V Street end was quieter and less active, but it felt like a welcoming space for children.

These methods helped me understand the lived experience of the locals and supported the idea that affordable housing could be feasible in this location. Each method contributed to a deeper understanding of how the site functions and how people occupy the space.

What the Site Needs

Clearer transitions, better differentiation between building types, and shared public spaces could help connect the two ends of the lot without losing what makes each one unique. The site also needs more organization in terms of spatial placement; for example, the studio space feels misplaced. Introducing additional residential access could help break up the massing and make circulation more convenient for residents, so they don't have to walk up the narrow and uncomfortable alley on the left to reach V Street.

Chapter 7: Discovery Phase: Conceptual Testing of the Thesis

The discovery phase of this project is the most engaging part, as it applies all prior research to a few specific design proposals. It reflects on the existing site and considers the changes that may be needed. Conceptual testing began by exploring how people will dwell on the site, how they will experience and engage with the space, particularly in a building intended for low-income communities. This involves massing that respects the existing urban fabric, along with solutions that aim to improve the community's quality of life. These initial design drafts represent the starting point for testing the thesis objectives and responding to the Site Zero analysis findings. Translating these ideas into visual form and testing them through the thesis lens is a challenge, but every process needs a beginning, and this one has been drafted as follows.



Figure 7.1 Site Zero Lot between U Street and V in DC (source: Google Earth)

The site zero location, as discussed in chapter 6



Figure 7.2 Potential site Addis Ketema in Addis Ababa (source: Google Earth)

Google earth

The potential site in Addis Ababa, Ethiopia

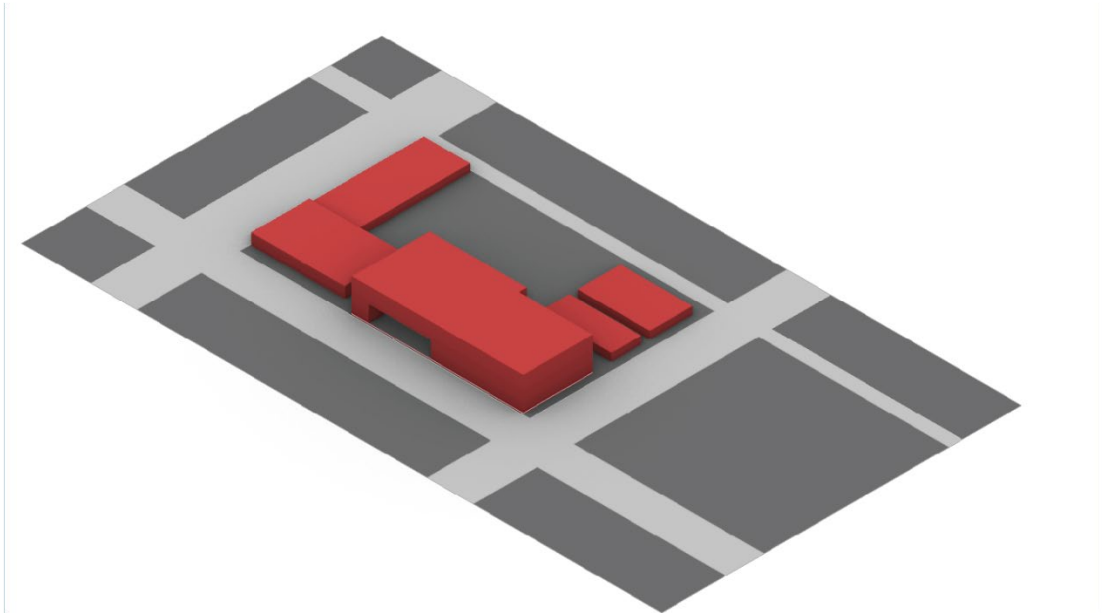


Figure 7.3 Design draft one axon (source: by the author)

Axon of the first conceptual draft by the author

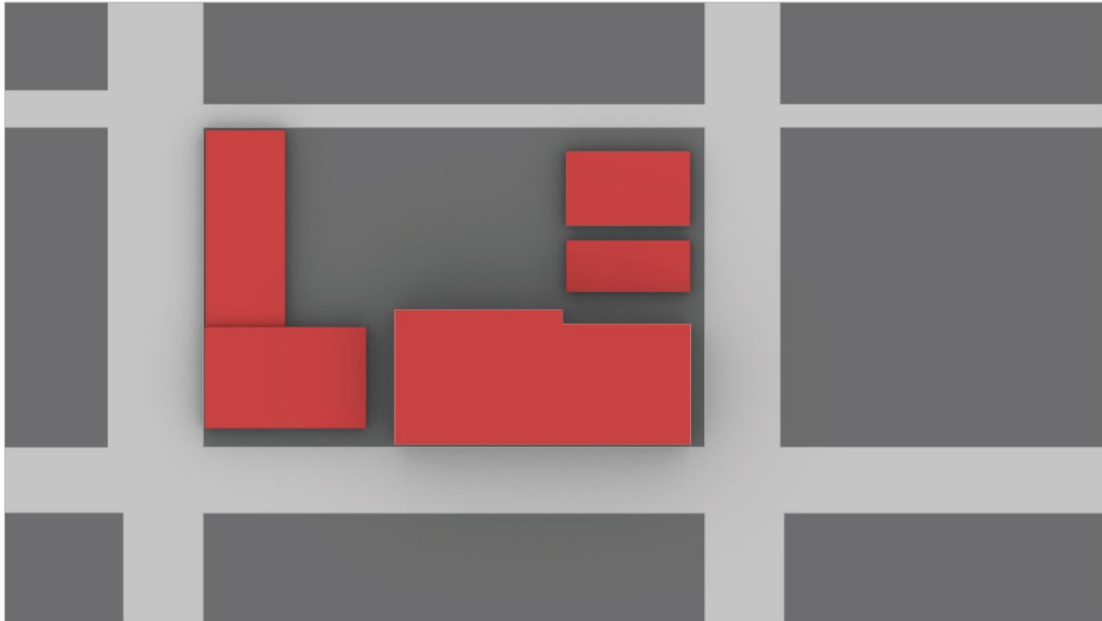


Figure 7.4 Design draft one plan (source: by the author)

Plan of the first conceptual draft by the author



Figure 7.5 Design draft one program layout (source: by the author)

Test 1

The first massing responds to the existing conditions of the reference site, Site Zero. It places high-density units on the right end and mid-density units on the left. The mid-density building is separated, creating a path that leads to a courtyard at the back. The layout references the precedent analysis discussed in Chapter 4, particularly how vertical massing interacts with and surrounds a courtyard. The opening highlights the commercial base of the high-density building on the left, giving it clear access and hierarchy. The rear mass serves as a service area, and studio units are located on the right. On the left, the mass references informal housing known as Chereka Bet, which translates to "moon house."²⁶

These are informal structures built overnight by low-income communities that lack formal housing options. Because they are built quickly overnight, they cannot use materials like cement or concrete. Instead, they use traditional materials like mud, clay, and wood. Although corrugated metal is common for roofing, it is often too expensive and also attracts the attention of authorities who are tasked with removing

²⁶ Jemal Abagissa, "Informal Settlements in Addis Ababa: Extent, Challenges and Measures Taken," *Journal of Public Administration, Finance and Law* 15 (2019): [page number(s)], https://jopafl.com/uploads/issue15/INFORMAL_SETTLEMENTS_IN_ADDIS_ABABA_EXTENT_CHALLENGES_AND_MEASURES_TAKEN.pdf.

informal settlements. As a result, materials like “Madaberiya”, woven fertilizer sacks used for storage, are used instead.²⁷

This type of housing is included in all three design schemes as part of an incremental building project, where low-income groups can build their own units over time or collaborate to construct them gradually. Including this concept acknowledges the effort these communities invest, even when their work is often in vain due to intervention by authorities.

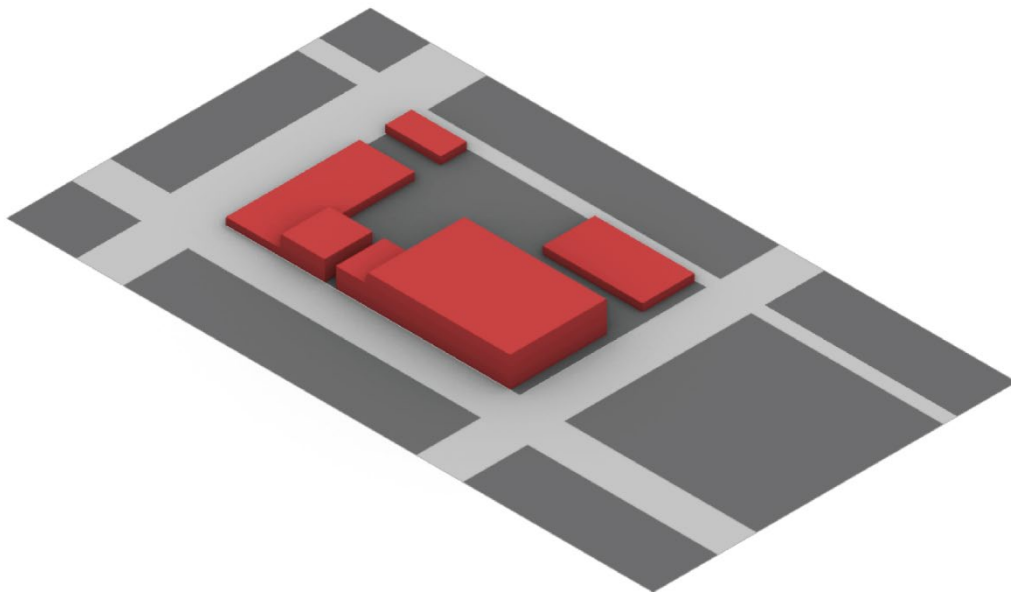


Figure 7.6 Design draft two program axon (source: by the author)

²⁷ Anonymous (informal resident) in discussion with the author 2025

Axon of the second conceptual draft by the author

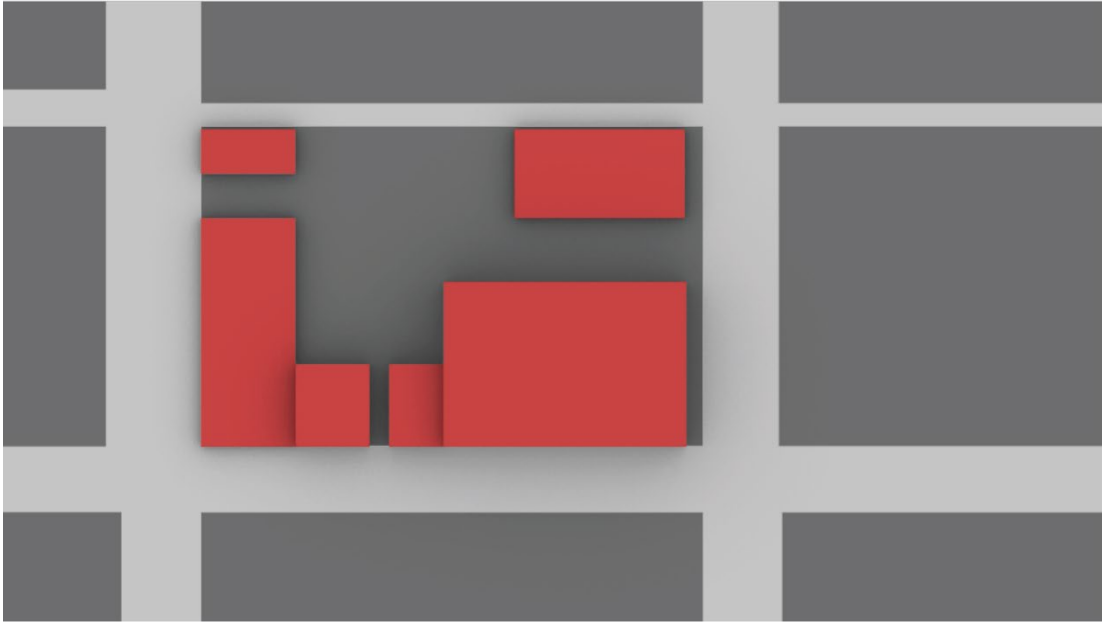


Figure 7.7 Design draft two plan (source: by the author)

Plan of the second conceptual draft by the author

Test 2

The second conceptual test focuses on the relationship between the existing context and a potential site in Addis Ababa, located in Addis Ketema near the central business district. One of the busiest open markets, Merkato, is located near this site. This makes the site convenient for potential low-income residents to find employment without traveling long distances. It also has excellent access to public transportation, both local and intercity, as it sits on the same block as the long-distance bus station. The lot is large enough to support high-density housing with space for additional

services and amenities. It is a walkable area with nearby public schools and other essential facilities, making it well-suited for a community-integrated design.

The concept of moon housing is included in this scheme as well, to recognize and highlight the efforts of low-income groups. The massing layout moves from high- to mid- to low-density housing from right to left. All buildings except the low-density ones have a commercial base to create job opportunities for residents. Although this draft is applied to Site Zero, the layout caters to a busy and crowded site, so including commercial functions at the base makes sense. Above the commercial spaces, the design includes 5-10 floors of one- to three-bedroom units.

The mid-density mass was split into two buildings to create a new central path. In the Site Zero analysis, the original lot was too long, making access to the existing path that connects U Street to V Street difficult. One of the two existing paths to V Street was especially problematic; it was narrow, dark even during the day, and felt unsafe. To address this, the mid-density mass was divided into two equal parts to open up a new path through the middle, reducing the distance between U Street and V Street and improving safety. The precedent referenced for this layout is Karl-Marx-Hof, which features residential units at the front and a central courtyard. In this case, the courtyard is placed at the back, following the existing layout. This is more suitable because V Street is quieter than U Street. The green space in the program diagram, which includes a playground, is also located at the back to ensure children's safety, as

V Street has less traffic and fewer pedestrians. The massing follows a stepping form, gradually increasing in height from left to right.

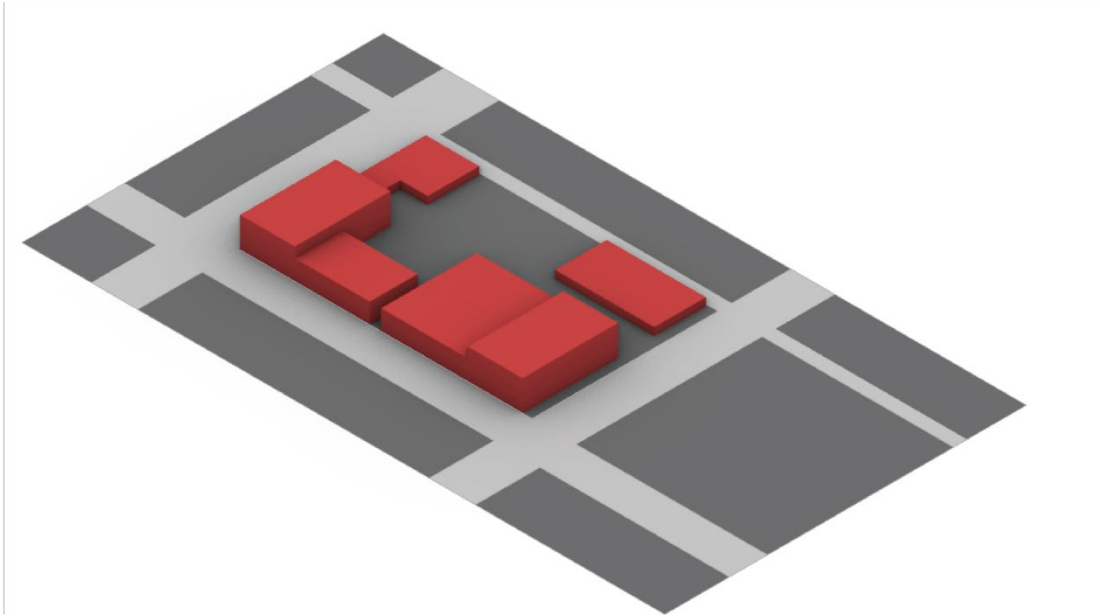


Figure 7.8 Design draft three axon (source: by the author)

Axon of the second conceptual draft by the author

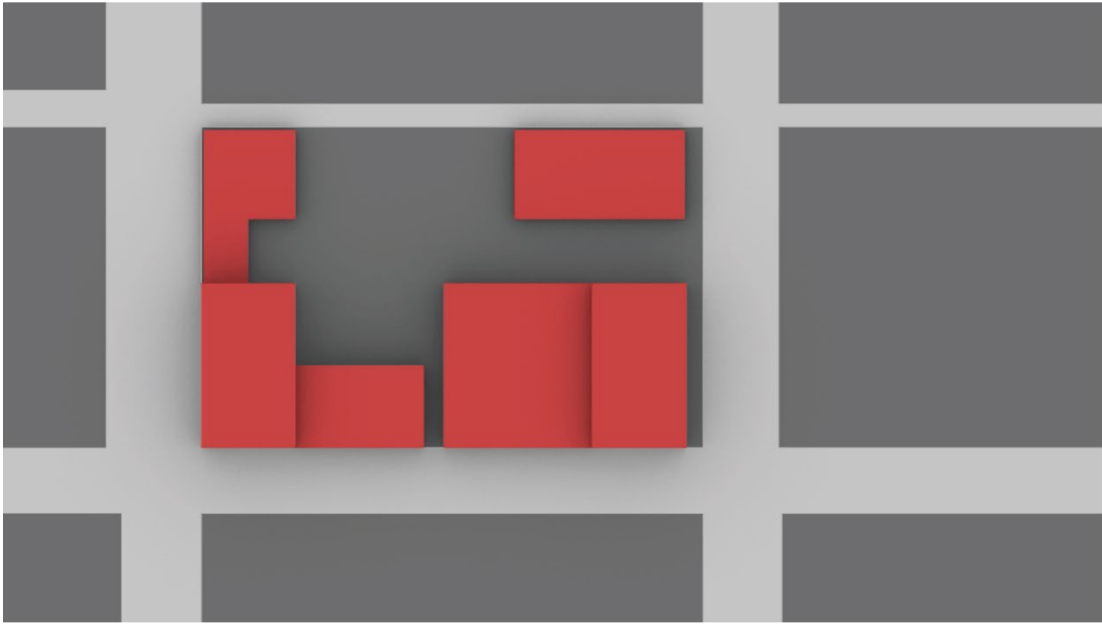


Figure 7.9 Design draft three plan (source: by the author)

Plan of the second conceptual draft by the author

Test 3

The third thesis test refers to the courtyard cluster setup from the precedent study.

This scheme builds on the research presented in Chapter Two, focusing on how people inhabit space, and applies that understanding to a massing strategy. The cluster layout places high-density buildings at the left and right corners, mid-density units in the center, moon housing units on the left corner (on V street end), and service and communal spaces at the back. All units are arranged around a shared courtyard. The layout supports mixed-use development, with the entire ground level functioning as a

Suk (convenient store market) and other commercial or retail spaces, while the upper levels are residential.

During the precedent analysis for the affordable condominium, one issue identified was limited accessibility; some buildings only had stair access, making them unusable for all users. This draft addresses this by exploring the inclusion of accessible units facing the courtyard. The detached service building is positioned at the right end near V Street. As mentioned earlier, a central axis cuts through the lot, creating a direct path from U Street to V Street.

When applied to the potential site in Addis Ababa, the vertical scale of the massing fits within the existing context, as the lot already contains a mix of housing types. The buildings are shifted to allow for natural ventilation, contributing to sustainable design goals. The mid-density housing includes a terrace and a roof garden to support self-sustained food production for residents. The green space includes a defined walking path, an outdoor exercise area, and a playground.

The site analysis informed the decision not to use a rigid block layout that would limit connections to only the corners. Another consideration was the placement of the high-density buildings. In all three drafts, high-density masses are placed in relation to existing adjacent or nearby buildings, with their heights responding to the surrounding context. Each massing strategy maintains a clear transition from private to public dwellings.

Across all three schemes, the massing is heavier on the U Street end to emphasize its role as the primary street. This supports the idea of placing gathering or green spaces

near the quieter V Street end, where community interaction is more likely when it's less busy. The program also influenced decisions about the height, spacing, and orientation of the buildings in relation to U Street. Finally, the commercial space placement is informed by the cultural relations diagram, which includes an Ethiopian store along the U Street side.

Chapter 8: Thesis Design Solution and Conclusion

Introduction

Upon studying and analyzing the site and exploring conceptual testing schemes, the final chosen location required significant changes in design and approach compared to the early design phase. The new site introduced unique challenges and opportunities that called for a more site-specific response. Adjustments were made to the site's massing, arrangement, and potential construction process to ensure that no residents would be displaced.

This thesis proposes a design solution that addresses the housing challenges faced by low-income communities while ensuring inclusivity and accessibility. The design builds upon the previously explored site but focuses on a different lot in Addis Ketema, Addis Ababa, Ethiopia, proposing new housing typologies that aim to provide equitable living conditions and long-term adaptability. The goal is to create a community model that accommodates current residents while introducing additional housing units to serve a wider group.

Site Plan



Fig. 8.1 Site plan of the proposed design to the site (source by author)

Existing Conditions

The selected site in Addis Ketema currently houses approximately 24 residential units and two cafés on the north end. The site is overcrowded with no designated green or recreational spaces. It is situated approximately six miles from the central business district, offering suitable proximity to employment and educational opportunities.

Transportation access is one of the site's main strengths. It is a four-minute walk from the railway, with a local bus stop adjacent to the site and a regional bus station across the street. There are four schools within walking distance that provide first and second-level education. The northern section of the site is commercially zoned, while the rest is residential. The site is surrounded by essential services, including markets, clinics, and schools, and lies on a major street leading to Merkato, one of Africa's largest open markets.

While the north end provides adequate pedestrian space, the eastern and western paths lack proper walkways, forcing pedestrians to share space with vehicles. Most surrounding residential buildings are one or two stories, while the north end has mid-rise and high-rise developments. These conditions informed the placement, height, and orientation of the proposed design.

Proposed Solution

The proposed site design introduces three new buildings: a multi-family mixed-use apartment, formalized moon housing, and a studio apartment building. Together, they create a diverse housing environment that responds to varying household needs while maintaining a shared architectural language.

Public spaces are incorporated throughout the site, including gardens, courtyards, shaded walkways, and a public green area along the western edge. All three building types will be oriented on the north-south axis of the site, with the north edge as the primary access point. The design ensures accessibility, community interaction, and environmental sustainability while reflecting local cultural and spatial practices.



Figure 8.2 First floor plan of the proposed design (source: by the author)

Multi-family Housing

Existing affordable housing in Addis Ababa often lacks cultural responsiveness, accessibility, and meaningful communal spaces. Most condominium-style developments offer minimal interaction zones and limited vertical circulation without elevators, making them inaccessible for many residents. The proposed multi-family mixed-use housing addresses these shortcomings.

Located on the north edge of the lot, this building combines residential and commercial functions (fig.8.2). The ground floor hosts Suks (neighborhood convenience stores) and two cafés that activate the street and support local businesses. These cafés currently exist on the site and will be reintroduced after

project completion. The five-story building includes four residential levels, with twelve units per floor offering one-, two-, and three-bedroom configurations. Units are arranged around a central courtyard, and each living room opens toward a shared veranda, encouraging interaction while maintaining privacy. Gathering areas for coffee ceremonies and social meetings are located on the north and south ends of each floor (fig.8.4), allowing residents to adapt to vertical living without losing the cultural rhythm of daily communal life. Units are placed as clusters of three, with each cluster comprising different unit types. Each of the residential floors contains four such clusters, separated by a common area and circulation space. The primary façade of the multi-family apartment is the north-facing façade, which is composed of three repeated bays. The central bay is porous and accommodates the common space. The openness of the common space on the plan is expressed on the façade by a central louver that breaks the rhythms of the concrete façade of the dwelling spaces. (Fig 8.3)



Figure. 8.3 Primary façade of the multi-family apartment (source: by the author)

Accessibility is prioritized through four entry points, two elevators, and two stairways. The ground floor includes a daycare, multipurpose hall, recreational space, edible garden, and proper waste and water management facilities (fig 8.2). A

rainwater collection system sustains the garden. The building consists of two volumes connected by a bridge, enabling phased construction and flexibility.

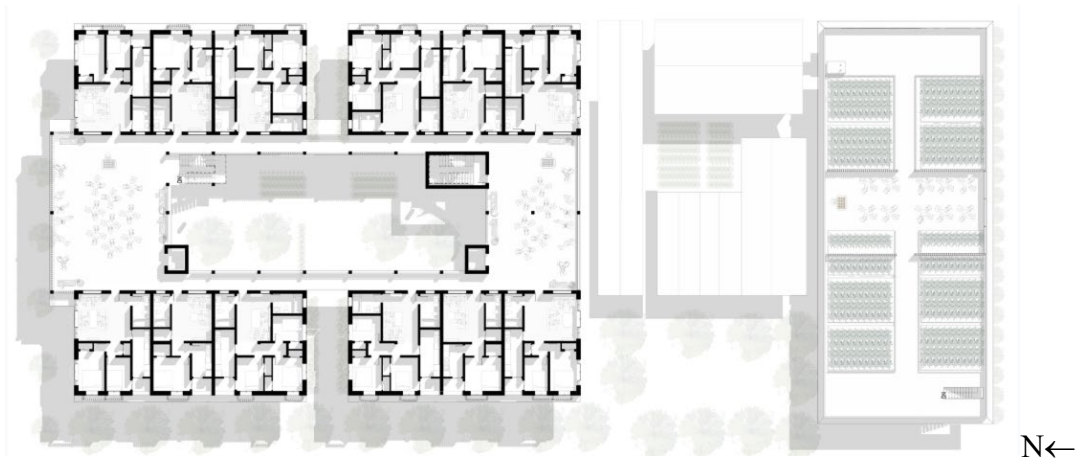


Figure 8.4 3rd Floor plan of the proposed design: multi-family apartment on the left and the rooftop garden of the studio apartment on the right (source: by the author)

Formalized Moon Housing

The formalized moon housing typology reflects a collaborative and adaptive housing approach similar to traditional Ethiopian practices, such as those seen among the Gurage people, as mentioned previously. Collaborative housing development has long been essential to traditional construction methods, though it has become less common in modern practices. The traditional Gurage housing system that was discussed in earlier chapters informed the development of the formalized moon housing typology. While the proposed moon housing is not directly based on this tradition, it reflects similar ideas of collective effort, shared resources, and incremental growth. These ideals align with the goals of the thesis, which aim to create a design that supports affordability, adaptability, and community engagement for low-income residents. The Gurage traditional housing model serves as a cultural

reference that demonstrates how collaboration and shared responsibility can be translated into an architectural approach that strengthens social connection and economic stability.

In this design, informal moon housing is formalized as a one-story incremental housing type organized around a shared compound. Each cluster consists of four units with three-unit types arranged around a central garden, along with communal kitchens and bathrooms. Construction begins with the shared kitchen and bathroom, allowing residents to move in once the essential spaces are complete. As residents' financial situation improves, they can add private kitchens or extend their homes, allowing the shared spaces to evolve into social gathering areas or even additional housing units. Each unit has a gable roof with a moderate pitch.

This approach mirrors the collaborative and adaptive nature found in traditional housing practices while formalizing it into a structured, sustainable, and affordable model for low-income residents. It provides flexibility, promotes community engagement, and supports gradual home ownership. The formalized moon housing typology ensures that housing remains an evolving process shaped by shared responsibility, affordability, and social connection.

Studio Housing

The studio housing typology addresses a segment of the population often overlooked in affordable housing, including students, recent graduates, and single tenants.

Affordable housing is typically programmed around families; as a result, single renters, though accommodated, are rarely treated as a distinct group and are often overlooked in planning and design discussions. This design addresses that gap by

introducing a dedicated studio apartment, ensuring this group is represented on the site and included in the planning process. The studio apartment is located on the southern end of the site. This two-story studio apartment building offers 20 private studio apartments, each with its own living spaces and bathrooms. Shared kitchens and dining areas are centrally located on each floor to reduce living costs while encouraging interaction and preventing social isolation. The second floor also includes laundry facilities. The flat roof features a shaded rooftop garden that provides residents with a place to relax, gather, and support a sense of community. The shaded walking trail on the west leads to the studio apartment entry on the first floor. The communal spaces of all three buildings are located in the center.

Phasing

Housing development is treated as a process rather than a product, evolving with residents' lives, incomes, and needs. The construction strategy is phased to prevent displacement and support a gradual transition.

Phase One: Construction of the first mass of the multi-family apartment building, providing 24 units and reintroducing the existing cafés and amenities on the north end. This phase accommodates all current residents. (fig 8.5 highlighted in red)

Phase 1.5: Completion of the second mass of the multi-family building connected by a bridge, which provides 24 units with more amenities (fig 8.5 highlighted in red)

Phase 2: The introduction of the formalized moon housing typology, allowing residents to transition into ownership. (fig 8.5 highlighted in yellow)

Phase 3: Development of the studio apartment building on the southern end, completing the three-housing mix. (fig 8.5 highlighted in green)

Each phase represents a scale of living from collective to individual while maintaining a consistent architectural language that is climate responsive, culturally grounded, and socially inclusive.

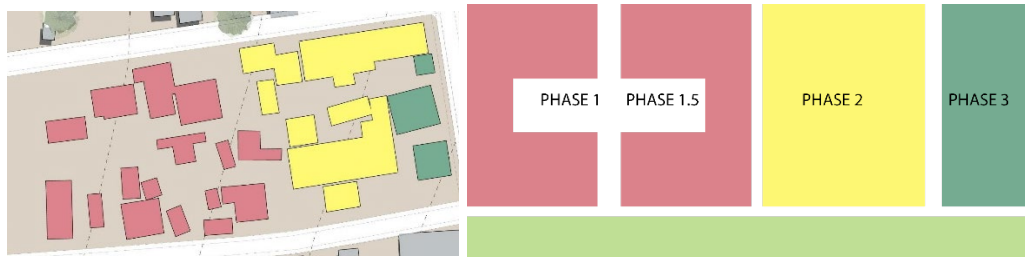


Figure 8.5 Phasing plan of the proposed design: phase 1-1.5 red, phase 2 yellow, phase 3 green (source: by the author)

Material and Environmental Strategy

Concrete is used across all three building types for both structural and finish applications, because it aligns with existing building skills and regulatory frameworks. Cement-stabilized rammed earth is used for the partition walls, due to its low embodied energy and reduced transport emissions. (Amede et al.)²⁸ Wooden louvers are incorporated in the multifamily and studio apartment building to enhance natural ventilation and provide shading, referencing the Addis Ababa regional typology, which is typically placed at the upper end of the façade. The louvers are utilized in the common gathering space of the multifamily apartment building to help with ventilation and provide shading. Horizontal louvers on the south of the studio and multifamily apartment building mitigate solar heat gain, while vertical louvers on the north, and adjustable east and west louvers on the multifamily apartment building,

²⁸ Amede et al., “Examining the Viability and Benefits of Cement-Stabilized Rammed Earth as an Affordable and Durable Walling Material in Addis Ababa, Ethiopia.”

optimize light and airflow. Each unit of the multifamily apartment features a recessed balcony to strengthen the connection between private dwellings and communal outdoor spaces. Ground-floor commercial spaces keep the street active throughout the day while shaded walkways lined with canopy trees create a comfortable pedestrian experience. A public garden along the western edge serves both residents and the surrounding neighborhood, addressing the local shortage of green and pedestrian spaces.

The raised lot creates a clear buffer between pedestrian and vehicular circulation, offering safe, shaded walkways that connect building entrances and public areas. As illustrated in the section (fig 8.7), the courtyard reveals layered social spaces (fig 8.6), edible gardens, and a shaded veranda that protects the residents from rain and sun, while also offering an outside seating area for daily interaction at multiple scales. In multifamily housing, the veranda supports social connections, as most of the daily activity is often spent outside due to the favorable climate. (The Addis Ababa House)²⁹. All three building types use corrugated metal sheets as a roofing material, allowing the buildings to blend in with the existing site contexts.



Figure 8.6 Common gathering spaces: Studio rooftop garden, moon house garden, multifamily courtyard garden (source: by the author)

²⁹ Nieder, *The Addis Ababa House*, 185.



Figure 8.7 North-South section showing the common gathering spaces (source: by the author)

Conclusion

This thesis proposes a culturally grounded, socially responsive, and environmentally conscious housing model for low-income communities in Addis Ababa. By integrating multi-family housing, formalized incremental homes, and studio units, the project accommodates diverse household needs while maintaining affordability and cultural familiarity. The phased construction approach ensures that no residents are displaced and that the development grows organically with its community. The result is a housing design that reflects the culture of Addis Ketema, while being adaptable, collective, and resilient, offering an approach that can inform future urban housing strategies in rapidly growing cities.

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