

**Aydelott Travel Award 2025**

**Caleb Asher McWhorter**, Student

**Duane McLemore**, Mentor

**Mississippi State University**

**School of Architecture,**

College of Art, Architecture, and Design

**Quinta da Malagueira**, by Alvaro Siza Vieira,  
Evora, Portugal

**In-Situ Slum Upgrade Yerwada**, by Prasanna Desai  
Architects, Pune, India

**Quinta Monroy**, by Elemental Arquitectos, Iquique,  
Chile

**Walter's Way and Segal Close**, by Walter Segal,  
London, United Kingdom

## **Caleb Asher McWhorter**

Mississippi State  
University  
S | ARC



Caleb McWhorter is currently a fourth year student at Mississippi State University from Dawsonville, Georgia. He is pursuing a bachelor's degree in Architecture with the goal of minoring in Art. Caleb is passionate about Architecture as an act of service. During his undergraduate studies he has had the opportunity to pursue what it means for Architecture to listen and respond to the needs of its users through participatory design methods. In design studios and through research he continues to develop his architectural philosophy. In the summer of 2025, he received the Aydelott Travel Award to study four affordable housing projects across the world and once again further his research knowledge and experience. He is a member of Tau Sigma Delta Honor Society, a society that recognizes academic excellence during a student's time at architecture school and a member of the School of Architecture Director's Council, a student government body that represents students' interests to the faculty. In his free time, Caleb enjoys reading, printmaking, and photography, all hobbies that he hopes he can use to further his studies in architecture and design. After graduation, Caleb hopes to continue to pursue his interests in design through field work overseas in the realm of affordable housing or disaster relief with the goal of graduate studies further down the road.

# **Towards a Democratic Architecture: Providing Personal Autonomy in Affordable Housing Through Participatory Design**

"It is the question of building which lies at the root of social unrest today: architecture or revolution?" -Le Corbusier<sup>1</sup>

This is still the foremost issue that vexes modern architecture: what is the role of architecture in a world where nearly three billion people are now living in densely populated cities?<sup>2</sup> With that number growing each day, how can architects design humane housing for every single one of them without compromising each one's individual needs, wants, and rights?

The modernist movement understood that the act of architecture is inherently a political and social act, and thus they attempted to solve this issue through the new liberating technologies made available through mass-production and the assembly line. Many millions of apartments were built and filled using cheap and efficient modern building techniques. Yet with the millions of apartments came millions of complaints. Efficiency alone was not sufficient in providing quality homes for the masses. A new architectural solution was needed; one that provided an affordable and efficient framework that could allow the people to live and grow as they saw fit.

The question of how architecture could provide a framework for individual flourishing through infrastructure and participatory design led to an investigation during the summer of 2025. Through first hand experiences, documentation, interviews, and other methods of architectural analysis, such as photography and sketching, the author sought to understand how architecture could provide basic needs that allowed people and communities to flourish. Through this research, four

case studies were selected:

1. **Quinta da Malagueira Housing Estate** in Evora, Portugal: an endeavor that sought to provide housing for 1200 families in a manner that was sensitive to the cultural needs of the region as well as to the families.

2. **In-Situ Slum Upgrade Yerwada** in Pune, India: a project that worked within the existing urban fabric of India's slums, taking advantage of their cultural and economic resources to preserve the families' way of life.

3. **Quinta Monroy Housing** in Iquique, Chile: a project that took a critical approach to government housing policy and reworked existing housing typologies to provide people with the best housing in the best location at a minimal cost.

4. **The Segal Method** in London, United Kingdom: not a specific housing project, but a kit-of-parts building system devised by an architect to empower every day people to create their own housing.

Visiting each of these projects provided deep insight into the role of architecture in providing people's basic needs. Analysis was undertaken into the design processes of each, determining the methods and ideas behind the projects, and then comparing them with results observed in the field. Each project exists in the present day with varying levels of completeness and success. All of them fall short in some way, and yet each one provides inspiration and useful lessons on how participatory design can further the ideal of affordable, humane housing for everyone.

## Endnotes

1 Le Corbusier, *Towards a New Architecture*, Frederick Etchells (trans.), London: Butterworth Architecture, 1989, p. 269.

2 Alejandro Aravena: My Architectural Philosophy? Bring the Community into the Process, directed by TED, 2014, 15:53 <https://www.youtube.com/watch?v=o0I0Poe3qlg>. 00:58

**Quinta da Malagueira: Architecture that Listens to its Context**



*Fig. 1. Alvaro Siza Vieira, Quinta da Malagueira, Evora, Portugal, 1975-1999. (Photo by Author)*

**The Problem: Mass Migration and Housing Shortages in Post-Revolution Portugal**

Portugal experienced widespread migration from rural areas into cities during the thirty year reign of Portuguese dictator Antonio Salazar. Salazar's policies, aimed at centralizing land ownership with the existing oligarchy, evicted many poor farmers, causing them to move to the cities to find jobs and homes.<sup>1</sup> Due to the shortages caused by the land seizures, informal settlements popped up throughout the country, often on privately owned farms near cities or in urban parks and gardens.<sup>2</sup> In April of 1974, Communist revolutionaries, in conjunction with the military, overthrew the dictatorship in what was known as the Carnation Revolution. They established a temporary government that oversaw the transition to democracy, and eventually, elections were held resulting in a new Communist government.<sup>3</sup> The new

government sought to address the country's housing needs and encouraged solutions that were consistent with their ideals. This meant that the solutions had to provide quality housing that took into account the recipient's needs and wants in a democratic way while still complying with the mandates of the central government.



Fig. 2. Alvaro Siza Vieira, Sao Victor Housing, Porto, Portugal, 1974. (Photo by Author)



Fig. 3. Alvaro Siza Vieira, Bouca Housing, Porto, Portugal, 1974. (Photo by Author)

### **An Architectural Solution: Sensitivity to Context**

“Cheerfulness is a matter of people, not facades” -Alvaro Siza<sup>4</sup>

During the country's transition to democracy, the new temporary regime established the cooperative housing organization SAAL (Servicio Ambulatorio de Apoio Local). It consisted of architects, engineers, and city planners in Portuguese urban centers who desired to contribute their expertise towards solving the housing crisis.<sup>5</sup> Although only operating until 1976, this organization held many meetings with the residents of informal neighborhoods which resulted in a few small but important public housing projects. The two most well known projects from this time were the Bouca and Sao Victor housing projects designed by Alvaro Siza in the city Porto (Fig. 2,3). These were important

because they represented a top-down public housing project that was sensitive to its cultural context and informed by social dialogue. This was because Siza conducted meetings with each resident to determine a design based on their needs. It was here that he was introduced to participatory design in large-scale projects. "I felt at ease in that situation of constant confrontation, since I had been trained in dialogues and debates by the experience of building single family bourgeois houses."<sup>6</sup> Siza believed that architecture necessarily involves people. Just like the single family homes he designed before, the large-scale social housing projects had clients, people who would be affected by the designs and who should then be able to contribute to how they are planned.

"My effort was aimed at creating a support for personal expression, a space for each family... I am not interested in imposing perfection or style, but in building a support for urban life in its transformations. We must not forget that the city is made not only of its reality but also of its memory."<sup>7</sup>

It was this spirit of participatory design that motivated the Evora City Council to contact Siza to plan a housing complex of 1,200 homes outside of their walled city.<sup>8</sup>

The old city of Evora is one of Europe's oldest known settlements, consisting of narrow winding medieval streets, ancient monasteries, and a 14th century aqueduct (Fig. 5,6). In the 1970s the city of Evora had grown to around 40,000 residents, two-thirds of which lived outside the city walls in illegal neighborhoods.<sup>9</sup> These neighborhoods not authorized by the zoning



Fig.4. Location of Evora, 2025, earth.google.com



*Fig. 5. The Old City Seen From The Cathedral Walls, Evora, Portugal, 2025. (Photo by Author)*



*Fig. 6. Ancient Infrastructure Becomes a Framework for Living, Evora, Portugal, 2025. (Photo by Author)*

board; however, they functioned as autonomous neighborhoods around the city, and thus were not often removed. The houses were poorly built out of cheap materials, mainly in the traditional style of the region, on land seized from plantations, or 'quintas' surrounding the old city (Fig. 7,8).<sup>10</sup> Their population consisted mostly of farmers and people from the countryside who were moving to Evora in search of work after the revolution.

Originally, the city planned to solve the issue with high rise apartments organized in a modernist cruciform plan (Fig.8). However, following the construction of several of these towers, there arose problems from both the city's and the residents' points of view. The residents, who came from mostly rural communities, did not like the isolated and cramped apartment block style of living. The city government felt that the towers interfered with the prominence of the old city. A new solution to Evora's housing crisis was needed that was more sensitive to the identity of the city and to the people's needs. The council approached Siza and tasked him with designing a housing estate with 1,200 units that integrated into the natural landscape between two illegal neighborhoods, Santa Maria and Nossa Senhora da Gloria, while simultaneously linking the new development with the urban fabric of the old city.<sup>11</sup>



Fig. 9. *Praca do Giraldo, Evora, Portugal, 2025. (Photo by Author)*

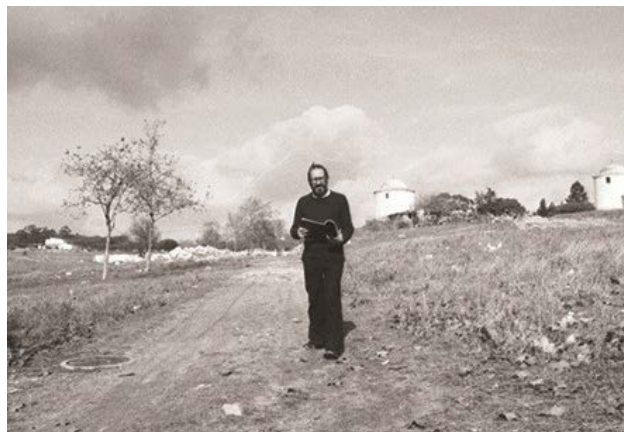


Fig. 10. *Photograph, Alvaro Siza Sketching on site, Evora, Portugal, 1977. Source: ArchDaily*

- [1] Nossa Senhora
- [2] Walled City
- [3] Santa Maria
- [4] Apartments
- [5] Malagueira
- Boundary
- [6] Fontanhas
- Neighborhood
- [7] Siza's Axes
- [8] Conduit/Street
- Layout

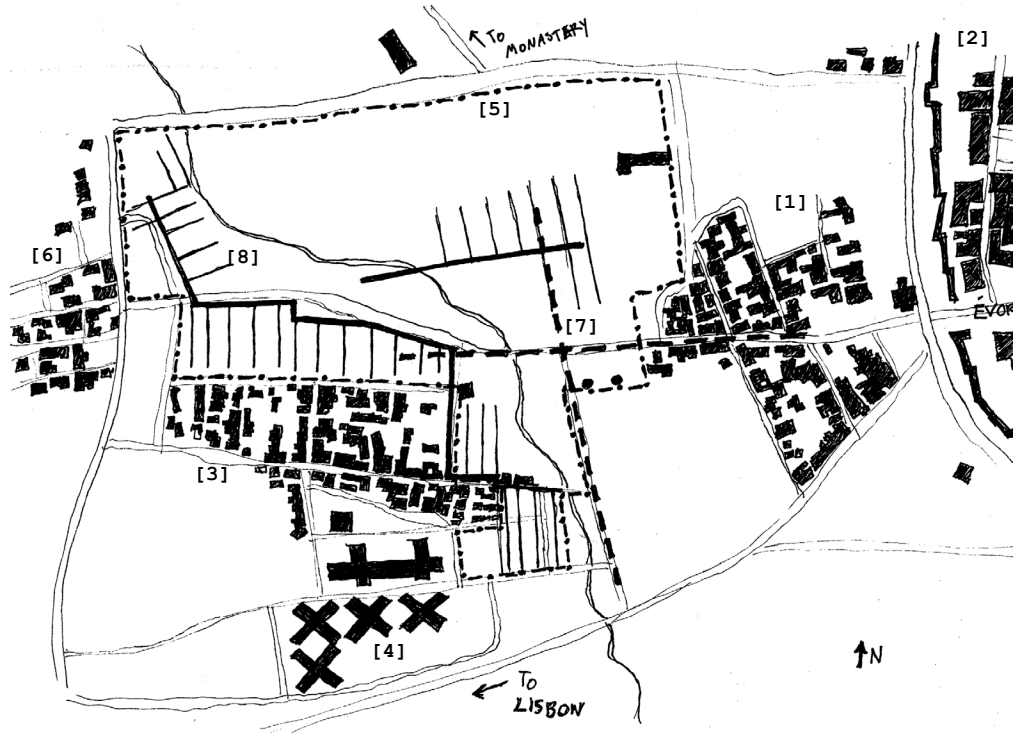


Fig.7. Sketched Map of Context Surrounding Malagueira, Evora, Portugal, 2025. Source: Author



Fig. 8. Santa Maria Illegal Settlement with Modernist Apartments Behind, Malagueira, Portugal, 2025. (Photo by Author)

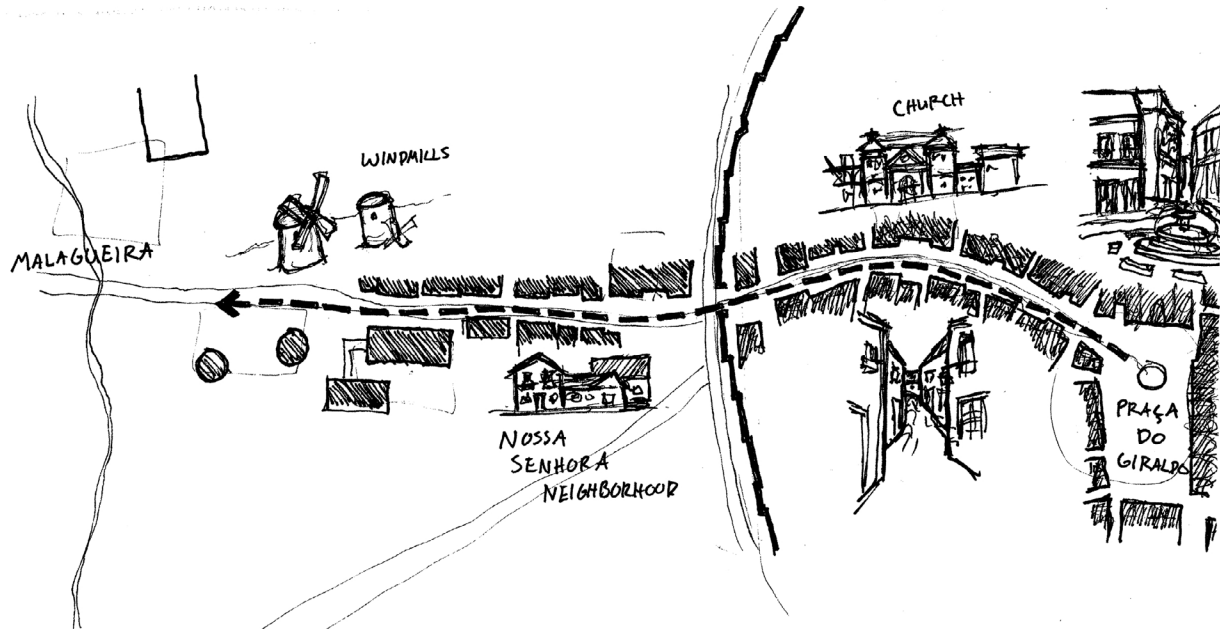


Fig. 11. Sketch, Siza's Path with Context, 2025. Source: Author

### Participatory Processes: Top-Down Design Sensitive to Cultural Context

"Let the beauty of the processes in and around the house take the place of the beauty of the house itself." -Bruno Taut, as quoted by Bridgette Fleck in *Alvaro Siza*<sup>12</sup>

Siza first visited the Malagueira site in 1977. When arriving in the old city, it was suggested that he drive from the main plaza, Praça do Giraldo (Fig.9), to see the site. Siza refused, choosing rather to walk from the old city to the new site. (Fig.11)<sup>13</sup> This seemingly small decision is indicative of Siza's larger goal of seamlessly linking the old and the new cities.

From the very start, Siza began drawing, sketching, and analyzing the atmosphere of the site. According to his sketchbooks, his attitude surrounding this activity was less about imposing his ideas onto the site and more about discovering the ideas implicitly contained there. He took note of the infrastructure and activities that had already been taking place there. Examples such as cafes, grocery stores,

footpaths, and water fountains demonstrated the habits and needs of the residents from the adjoining preexisting neighborhoods and how they addressed them.

"I began to study the great vitality of the Santa Maria neighborhood, stimulated by the presence of small commercial activities. People leave their homes to go and fetch water from the fountains, to go to school or to another neighborhood: so, with the passing of time, they left on the ground the traces of the path that was most convenient for them. These very clear traces also helped to explain behavior and topography and outlined the possibility of transformations and various kinds of connections."<sup>14</sup>

The activities of these two existing neighborhoods, as well as other preexisting features such as a pair of windmills, a creek, an old farmhouse with orange trees, and the already finished apartment blocks influenced the organization and layout of Siza's design.



*Fig. 12. New Malagueira Neighborhood (left) is Integrated Seamlessly with the preexisting Santa Maria neighborhood (right), Evora, Portugal, 2025. (Photo by Author)*

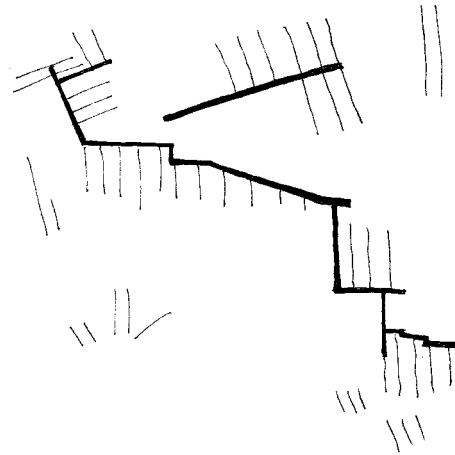
While keeping this context in mind, Siza began to organize the neighborhood around major axes: an east-west axis going from the main street of the walled city and cutting diagonally towards the Nossa Senhora neighborhood, and a north-south axis based on an existing footpath that follows the creek (Fig.7). The clusters of the housing units themselves are based on the existing street layouts of the previous neighborhoods or oriented around major landmarks like the farmhouse. By using the preexisting neighborhoods to inform the plan, he not only formally legitimizes these informal neighborhoods but provides them with access to the infrastructure and resources of the entire city, essentially integrating them into the city and recognizing them as official inhabitants and participants of its life (Fig. 12).<sup>15</sup>

Along the main east-west axis is a communal green space that functions as a multi-use park and a tool for transitioning between the old city and the new one. The houses are simple boxes organized into rows along the streets. This organization allows for cheap construction due to the repeated elements of each house. Although made up of a repetition of identical elements, the neighborhood does not appear monotonous because each house responds to the topography differently, creating a unique pattern of homes moving along the hillside.<sup>16</sup>

Siza employed a unique strategy in order to tie all of the areas of the plan together while also saving costs. "There was a very serious problem for anyone seeking to design a piece of town, it was all on the same scale."<sup>17</sup> He designed a large superstructure conduit that carried all of the necessary utilities for the homes above the streets and walls (Fig. 13). This structure, reminiscent of the aqueduct in the old city, provided an extra layer of context at a larger scale to tie all of the parts of the neighborhood into one urban identity. This solution not only solved the problem of scale but also provided a



*Fig. 13. Infrastructural Conduit Provides Necessary Urban Scale, Malagueira, Portugal, 2025. (Photo by Author)*



*Fig. 14. Diagram, Siza's Conduit Organized According to Axes, Paths, and existing streets, Malagueira, Portugal, 2025. Source: Author*

necessary infrastructure to the neighborhood at half the cost.

The design of the conduit as a unique solution to lack of funding was one of many aspects of this project that were topics of animated debate for the future residents. As an essential part of the design process, Siza conducted meetings with the housing cooperatives. These cooperatives were committees organized by the city government to represent the interests of all of the residents. According to Armando Silva, the president of the housing cooperative Boa Vontade, the cooperatives would call Siza every time there were questions, confusions, doubts, or opinions. A meeting would be held usually after working hours, sometimes lasting up to seven or eight hours at a time.<sup>18</sup> Siza continued this process for nearly ten years as the project developed and was built, traveling to Evora once a week during that time to check on the progress and address concerns with the residents.<sup>19</sup> He also appointed an architect from his office, Nuno Reiro Lopes, to temporarily live in Evora while the project developed. Although only intending to stay there a few months, he settled down and still lives there to this day.<sup>20</sup> This demonstrates the commitment necessary to achieve meaningful participatory design.

During these meetings, many issues were debated and discussed,

such as the height of garden walls, the location of the patios and chimneys, the finish material of the conduit, the shape of the roofs, and more. Each issue was debated and discussed with Siza vehemently defending the designs that he thought were the best solutions to the problems at an affordable cost. However, Siza was not so stubborn as to refuse all of the resident's requests. For example, the housing units themselves were initially designed with a patio on the front of the house facing the street with a high wall separating the two. The plans of the houses were organized around this patio. The plan was designed so that the families could sub-divide their houses up to five bedrooms if the need for more space arose (Fig. 15). This gave the residents greater freedom in their housing choices. When this design was proposed to the cooperatives, many objected to the patio design, believing that the patio should be moved to the back of the house. Others believed that the height of the walls would be too claustrophobic and requested shorter walls to allow a view into the street. Siza argued against

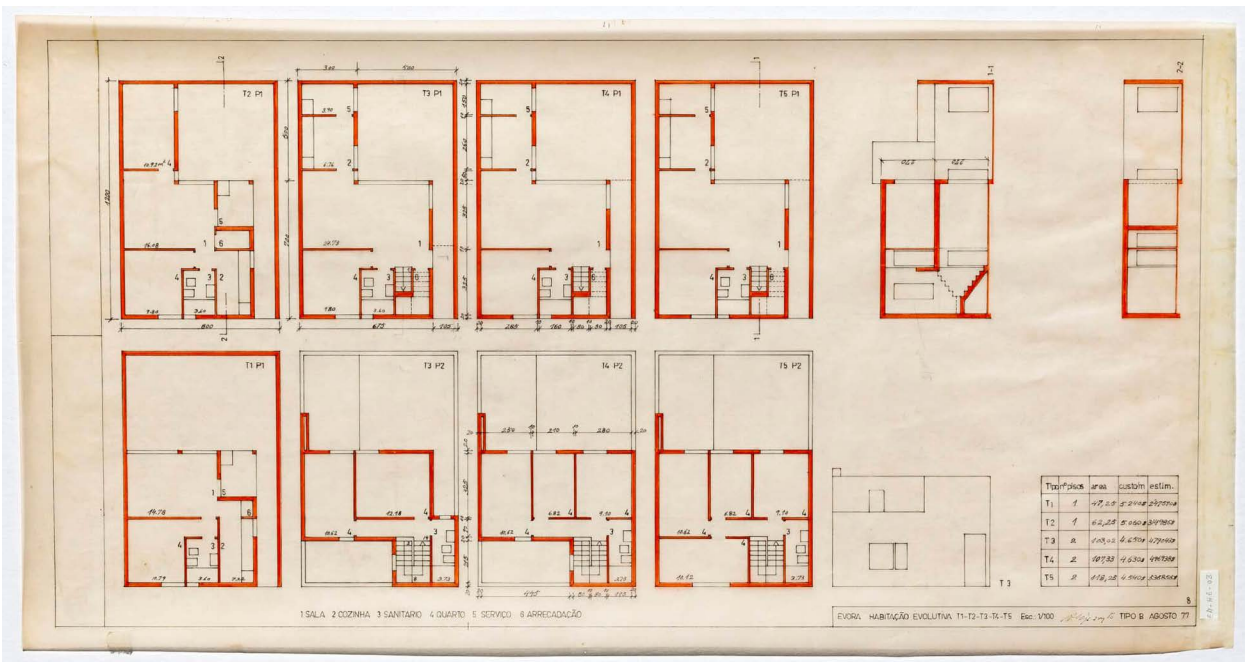


Fig. 15. Alvaro Siza Vieira, Plan Configurations T1-T5 with both patio layouts, Evora, 1977.  
Source: drawingmatter.org

both of these ideas. His reasoning for the patios originated in the traditions of the region. Evora is located in the Alentejo region of Portugal, known for being very hot and dry throughout the year. The density of the neighborhood, the white walls, and the patios were all designed in response to the harsh climate, attempting to make the houses more comfortable.<sup>21</sup> The patio walls, he argued, were so high to allow for privacy and security and to provide a transition between public and private space for the residents. Nevertheless, he allowed the residents to have the option to change the patios and the walls if they so desired.<sup>22</sup>

This shows that Siza was willing to sacrifice what he thought was best to "give the people what they want." At the end of the day, the architect's role was to communicate the limits that he had to work with and ensure that the people's additions to the project did not go beyond the framework and subsequently encroach on the neighborhood's public space.<sup>23</sup> Despite the obvious messiness that comes with public participation, Siza would not have it any other way.

"I have built houses for the higher classes and when I do that I have to talk to the property owner, his wife, his grown-up children, his neighbor, his mother-in-law; I need to discuss the project in detail. And it is intended that this desire-expressing as well as pedagogical personality can be achieved with affordable housing."<sup>24</sup>



*Fig. 15. Parked Cars Have Crowded the Narrow Streets, Malagueira, Portugal, 2025. (Photo by Author)*

### **Malagueira in its Current Context:**

"So you want to talk about Malagueira...It's a ruin!" -Siza<sup>25</sup>

Quinta da Malagueira was slowly constructed amidst setbacks, funding cuts, criticisms, and scarcity of construction materials over the course of more than 30 years. Many portions of the neighborhood have yet to be constructed, such as a large half dome pavilion, a restaurant, a hotel, and a school.<sup>26</sup> The communal spaces are often overgrown, and many residents spend their free time elsewhere in the old city rather than in their neighborhood. A few shops line the commercial arcade underneath the conduit across from the park, but most remain vacant and none serve lunch. With such a lack of resources, the residents are forced to commute to the inner city to get essentials, like meals and groceries. The streets are overcrowded with parked

cars, an oversight unforeseen in 1977 when a car in Portugal was a luxurious commodity rather than a household item (Fig. 15).<sup>27</sup> The homes themselves are generally very well cared for, but it is rare to find one that is not experiencing at least one problem with water leaks or flooding.<sup>28</sup> When first examined, Quinta da Malagueira appears to be only a decent dormitory, not a healthy city.

However, any consensus on the success of this project must consider the entire context in which it was built and in which it exists. The project was time and again sabotaged by the later-elected, more moderate socialist central government of Portugal, with budget cuts or outright refusals for funding. Hence, there was a lack of extra-infrastructural resources like restaurants or schools. This has left many spaces empty and vacant that should be filled and contributing to the neighborhood's urban life. The new government disagreed with the amount of spending needed to complete the project and did not have an understanding of the scale and effort necessary to



Fig. 16. Communal Green Spaces Remain Neglected, Malagueira, 2025. (Photo by Author)

successfully design a city.<sup>29</sup> The problem of parked cars in the streets was an unforeseen challenge, and yet the narrowness of the streets and the density of the buildings creates an environment where all of the cars drive slowly and carefully, resulting in no accidents in the neighborhood to this day.<sup>30</sup>

The disrepair of the infrastructure (Fig. 16) is again due to lack of funding coupled with the fact that this project was built and evolved during a tumultuous time for Portugal. At that time, there were no tiles for the roofs, resulting in a flat roof design. There were no cement blocks, so they quickly had to manufacture them on site. There were too few laborers, so the cooperatives often had to build their homes themselves.<sup>31</sup> The project was envisioned at a time when political instability, economic depression, and mass migration were high in Portugal. Yet the project also came at a time when people were hopeful about the future and willing to work together to achieve something better. Armando Silva, the cooperative president, has lived in Malagueira for forty years. When asked about these issues he responded:

"I'm proud of Malagueira, it's not the properties... it's a value that I give to the whole environment, the people, the people that worked here, that built it. The homeowners worked until four or five o'clock, then they came here to implement the houses, to build them, to paint them... everyone was engaged because finally they could have a house."

Silva urges people to first learn about the project and seek to understand Siza before being quick to criticize them.<sup>32</sup>

When viewed with an understanding of the scarcity of resources and lack of support during construction, Quinta da Malagueira becomes an impressive lesson in patience and perseverance. Although not built to the level of completeness originally planned, Quinta da Malagueira is a project that people can freely live in. It is a place where

people have grown up and made memories. It successfully integrated new neighborhoods into the urban fabric of a historic town while providing dignified housing at an affordable cost. It fairly and patiently considered the opinions of nearly 4000 people over thirty years. When one visits the streets of Malagueira, one still sees the unique personality in each house and notices the attention and care that the homeowners give to their dwellings. A lemon tree peeking over a garden wall, a colorful door, clothes hanging out to dry, a cat, a child running to his mother. Although never finished, Quinta da Malagueira is still a place that empowers people to have autonomy in their housing and a dignified relationship with their city. It is a sensitive and thoughtful place that still has the potential to grow and evolve as a design that demonstrates the humility, compromise, dedication, and communication necessary to design affordable, quality housing for everyone.



*Fig. 21. Alvaro Siza Vieira, The Neighborhood Takes on the Character of its Inhabitants, Malagueira, Portugal, 2025. (Photo by Author)*



*Fig. 18. Public Spaces Although Neglected Remain Beautiful, Malagueira, 2025. (Photo by Author)*



*Fig. 17. Pathway Created by Conduit Columns, Malagueira, 2025. (Photo by Author)*

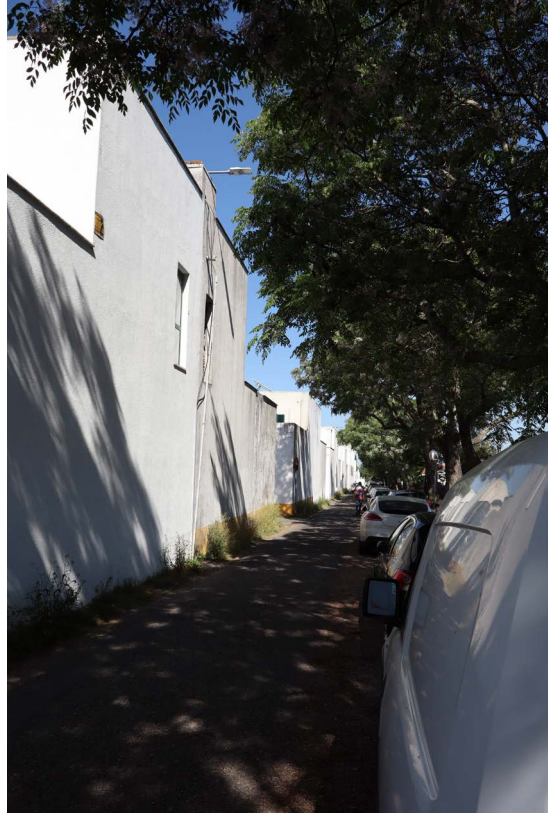


Fig. 19,20. Alvaro Siza Vieira, Malagueira Streets, Malagueira, Evora, Portugal, 2025. (Photos by Author)



Fig. 21. Alvaro Siza Vieira, Malagueira Streets, Malagueira, Evora, Portugal, 2025. (Photos by Author)

**Endnotes**

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2 Mario Jose Afonso Gomes, *Bairro da Malagueira de Siza Vieira, Factores de Apropriacao e Construcao Indentitaria em Torno da Casa* (Casal de Cambra, 2016), 30.

3 "Resources for The End of Salazar's Dictatorship in Portugal - Historical Events in the European Integration Process (1945-2009)," accessed December 8, 2025, <https://www.cvce.eu/en/education/unit-content/-/unit/02bb76df-d066-4c08-a58a-d4686a3e68ff/2739134e-5be5-484d-ac6c-e6360321cbbc/Resources#ea2b7b91-93d3-4a70-a897-832dfb6ccf70>.

4 Brigitte Fleck, *Alvaro Siza*, English language edition (Chapman & Hall, 1995), 62

5 Duarte Pardo, "Procesos Participativos," 38.

6 Kenneth Frampton, *Alvaro Siza Complete Works* (Phaidon Press Limited, 2000). 161.

7 Duarte Pardo, "Procesos Participativos," 75.

8 Duarte Pardo, "Procesos Participativos," 54.

9 Gomes, *Bairro da Malagueira*, 29.

10 Fleck, *Alvaro Siza*, 65.

11 Duarte Pardo, "Procesos Participativos," 67-68.

12 Fleck, *Alvaro Siza*, 64.

13 João Antonio Galhardo dos Santos, "A Malagueira Como Nunca O Foi" (Universidade de Évora, 2017), 16.

14 Frampton, *Alvaro Siza Complete Works*, 161.

15 Gomes, *Bairro da Malagueira*, 30.

16 #BEING Bairro Da Malagueira, directed by Évora 2027, 2022, 16:44, <https://www.youtube.com/watch?v=CM3MdPUEaUQ>. 4:06

17 #BEING, 3:22

18 Armando Silva, *Armando Silva Interview, Malagueira, Portugal, May 26, 2025, digital recording*, 45:53. 3:55

19 Alvaro Siza Vieira, *Alvaro Siza Interview, Porto, Portugal, May 29, 2025, digital recording*, 37:39. 1:05

- 20 Fleck, Alvaro Siza, 77
- 21 Duarte Pardo, "Procesos Participativos," 79.
- 22 Gomes, Bairro da Malagueira, 124.
- 23 Duarte Pardo, "Procesos Participativos," 81.
- 24 #BEING. 7:55
- 25 Alvaro Siza Vieira, Alvaro Siza Interview, 37:39.
- 26 Brito Francisco et al., "From Drawing to Space. The Void of the Places Imagined by Álvaro Siza for Malagueira," paper presented at Grand Projects, Lisbon, In Pinto, Paulo Tormenta; Brandão, Ana; Lopes, Sara Silva (Ed.) Grand Projects Conference Proceedings, DINAMIA'CET, 2021, <http://hdl.handle.net/10174/30581>.
- 27 Gomes, Bairro da Malagueira, 127.
- 28 Silva, Armando Silva Interview. 10:32
- 29 Gomes, Bairro da Malagueira, 122.
- 30 Gomes, Bairro da Malagueira, 127.
- 31 Galhardo dos Santos, "Nunca o Foi," 24.
- 32 Silva, Armando Silva Interview. 41:45

## In-Situ Slum Upgrade: Architecture that Listens to People



*Fig. 1. Deutsche Bank Headquarters Looms over a Slum in Yerwada, Pune, India. 2025. (Photo by Author)*

### **The Problem: Rapid Population Growth and Poor Living Conditions in India**

In the last fifty years, India has experienced rapid urbanization coupled with a housing supply shortage that has caused a sizable portion of its population to be living in informal settlements known as slums. India's slums are associated with unclean conditions such as lack of clean water, natural light, ventilation,



*Fig. 2. A Slum in Yerwada, Pune, Maharashtra, India, 2025. (Photo by Author)*

and amenities like toilets. One slum in Mumbai is said to have one toilet per every 1400 people<sup>1</sup>. The national government of India has implemented numerous strategies with varying levels of success to address these informal settlements. Many of the early strategies

included a top-down process of demolition and displacement where slum residents' homes would be cleared and they would be moved to mass-produced government housing on the peripheries of cities. These strategies were not only unwanted and inconvenient on the part of the residents, but often the new housing provided for the residents was poorly built, under serviced, or in even worse conditions than the slums it was built to replace.<sup>2</sup> Additionally, when forced to move to a multi-story apartment building the residents would lose all of their previous neighborhood connections, family networks, and even economic resources like access to jobs and informal marketplaces.

The government recognized that these strategies were unable to provide more resources than just basic dwelling structures. A new strategy that harnessed the power of the communities was needed. Consequently, in 2001, the Indian national housing authority devised a strategy called Basic Services for the Urban Poor (BSUP) under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) that attempted to solve this issue by 'upgrading' the slums through partnerships with local NGOs in a bottom up grassroots approach. Rather than the top down government demolish and displace model, this model would take into consideration the needs of the people involved and attempt to preserve the valuable social resources found in their neighborhoods while still providing the basic structures they needed to survive.<sup>3</sup>



Fig. 3. A Kuchha (unsafe) House, Yerwada, Pune, India, 2025. (Photo by Author)

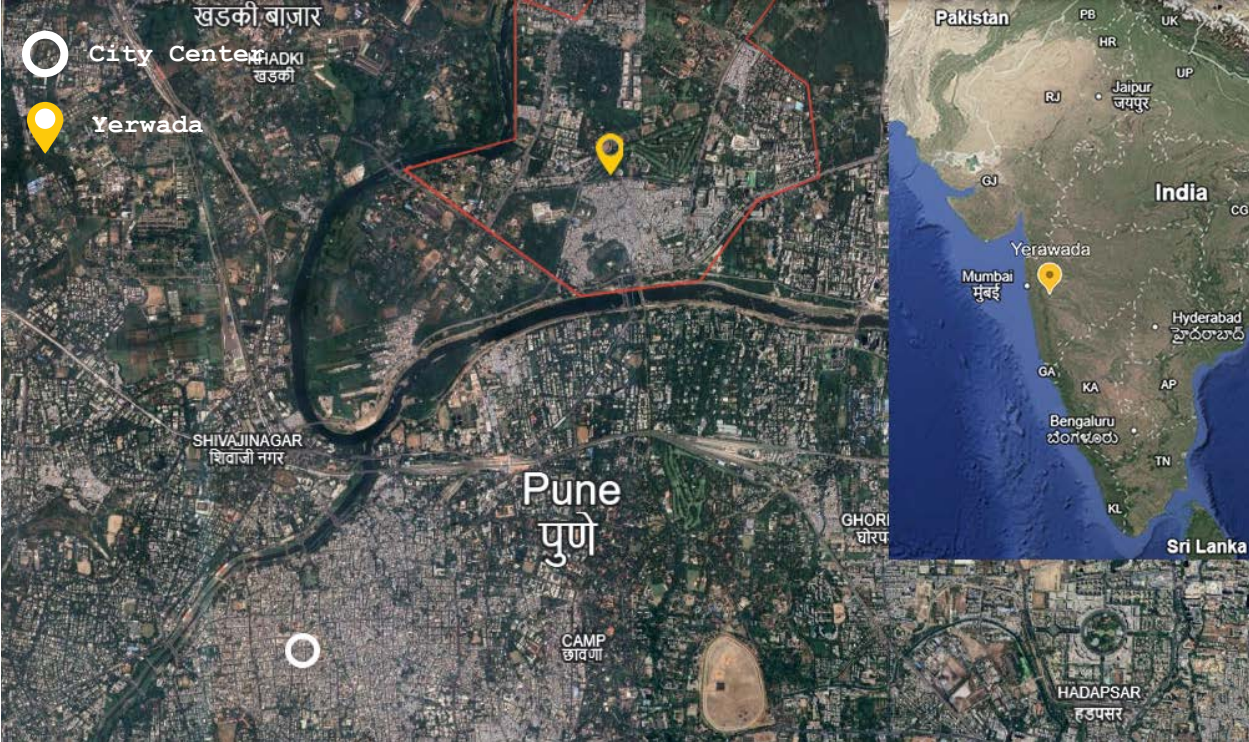


Fig. 4. Context Map, 2025. Source: earth.google.com



Fig. 5. Pune City After a Rain, Pune, Maharashtra, India, 2025. (Photo by Author)



Fig. 6. Typical Street in Yerwada, Pune, Maharashtra, India, 2025. (Photo by Author)

The city Pune (Fig. 5), India's eighth largest city, has seen a large amount of growth throughout the last few decades. A burgeoning IT and manufacturing hub, Pune draws many immigrants from rural areas and neighboring states seeking jobs and better opportunities. The rapid urbanization of this historic former capital of the Maratha Empire has led to just under half of the population living in slums. The largest and most significant of these slums are located within the neighborhood Yerwada which is north of Pune's city center on the Mula Mutha River. The neighborhood began as a large informal settlement consisting of poorly built, temporary houses. It was home to around 340,000 people in 2001, and consisted of winding narrow streets, busy marketplaces, dark alleyways, and clusters of two-to-four story buildings built in any place they could fit. These buildings first began as informal structures made from temporary materials but now most of Yerwada has developed into a more permanent neighborhood with a hospital, schools, temples, and markets (Fig. 6)<sup>4</sup>.

## An Architectural Solution: Grassroots Research

“Locals remain local, neighbors remain neighbors”<sup>5</sup>

-Urban Nouveau Architects

Within the larger chaotic neighborhood of Yerwada, there are still a few neighborhoods classified as slums by the city of Pune Municipal Corporation. This is due either to unsafe construction of the houses or the general lack of ventilation and daylight in the streets. The city government was interested in upgrading seven of Yerwada’s neighborhoods (Fig. 8) as part of the BSUP plan: Netaji Nagar, Mother

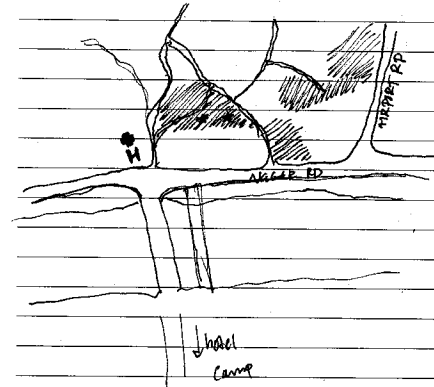


Fig. 7. Field Sketches Locating Neighborhoods, Pune, 2025.  
Source: Author



Fig. 8. Context Map of Neighborhoods in Yerwada, India, 2025. Source: earth.google.com

Theresa Nagar, Wadarwasti, Bhatt Nagar, Yashwant Nagar, Chandrama Nagar, and Sheela Salve Nagar (Nagar meaning neighborhood).<sup>6</sup>

By giving the design authority to local NGOs and architects, the BSUP model sought to include the residents in the design process in order to better understand their needs and wants. These NGOs could become advocates for the residents on a personal level while communicating the residents' priorities to the design teams, ensuring that all of their needs were met in the construction of the project. The financial model of the program was designed so that every player would have a stake in the project. The national government paid 50% of the cost, with the state and local governments each paying 20% and the beneficiaries paying the remaining 10%. In Yerwada, two organizations took charge of organizing and advocating for the neighborhoods chosen by the city for upgrade: the Society for the Promotion of Area Resource Centers (SPARC), a non-profit dedicated to providing housing to people in slums, and Mahila Milan, a local community organization focused on providing resources to women in slums.<sup>7</sup>

The Swedish architecture firm Urban Nouveau was invited by these NGOs to examine the Netaji Nagar neighborhood and devise a system that would preserve the resident's way of life, consulting them on their needs and wants regarding the process. The first thing the architects noticed was the vibrant quality of the streets of Yerwada, "...it was very active with commercial activity and informal marketplaces...people would gather in the narrow lanes between houses to do their laundry, to wash dishes, or just to talk to their neighbors."<sup>8</sup> In fact, all of the streets of Yerwada were full of cultural and economic activity. One researcher who has studied housing in Yerwada observed that during weddings the streets are covered by a large cloth called a mandap, creating a temporary covered space which symbolizes the unity and community of the area (Figure 9).<sup>9</sup> The cultural and economic resources

were, in part, a product of the urban density and low-rise structure of the area. These valuable resources could be taken advantage of to strengthen any infrastructure or basic housing that the architects designed. All of these aspects are lost in a traditional government demolish and displace strategy.

Therefore, rather than demolish and re-design the slum, the architects endeavored to work within its existing urban fabric, taking advantage of its cultural

and economic resources to strengthen their project. They pursued their designs with the mantra: "locals remain local, neighbors remain neighbors," and began studying the neighborhood and formulating their designs.<sup>10</sup>



*Fig. 9. A Wedding Mandap in Yerwada, Pune, India, 2023. Source: Participatory In-Situ Slum Upgrading in Yerwada, Pune*

### **Participatory Processes: Bottom-Up Design Strategy**

The architects carefully surveyed the neighborhoods identifying every resource and mapping out all of the houses in the areas. Identifying them as kuchha (unsafe and temporary construction) or pukka (safe permanent construction) in order to identify which houses needed the upgrade (Fig.10). After surveying, Urban Nouveau designed a row house typology that would interlock with the existing fabric, giving the residents two floors and a mezzanine to expand.

The early designs by Urban Nouveau convinced the city government



Fig. 10. Sketch, Map of Netaji Nagar Showing Safe and Unsafe Construction, Yerwada, Pune, India, 2025. Source: Author

to move forward with construction. 300,000 rupees (\$4800 USD) was allotted for each of the 1200 homes in the seven neighborhoods in Yerwada. Local architect, Prasanna Desai, was hired by the NGOs to implement Urban Nouveau's design guidelines due to his strong reputation as an architect that works well with communities in Pune.<sup>11</sup>

Desai's team held neighborhood-wide meetings with each group to introduce the designs and get feedback on how to ensure that the beneficiaries' needs were met (Fig. 11). They introduced them to the designs, and at the behest of the local Corporator (a city administrator for the neighborhood) they also included designs for an alternative apartment building configuration on site as well. In their first set of meetings, they discussed the general needs of the community as well as optimal house layouts and logistics. The architect communicated the restrictions, limits, and responsibilities of the



Fig. 11. Community Meetings Held by Prasanna Desai, Yerwada, Pune, India, 2009. Source: [architectureindevelopment.org](http://architectureindevelopment.org)

clients such as the limited budget, the square footage restrictions, and the necessity for the residents to work together.<sup>12</sup> Desai described these first meetings as moments of excitement for the residents, and they were held wherever there was space, from the courtyards in between houses outside to a marriage hall.<sup>13</sup>

The row house and apartment typologies were designed and developed in conjunction with these weekly community meetings, taking feedback from the residents and demonstrating to them the scale and volume of the house they would receive through a full scale mock-up model made from bamboo and textiles.<sup>14</sup>

After two months of deliberation and designs, the row house and apartment typologies that they had designed were voted on by the people, and the individual homes won by nearly 90%. Very few people wanted to leave their plots of land and move into a larger building.<sup>15</sup> The reasons for this are twofold: first, a high rise apartment building, although efficient in land area, results in places like elevator cores,

stairs, and corridors that become neglected and dangerous. This has historically been a major problem throughout India where large concrete shells of high-rise buildings are constructed without electricity, water, or ventilation resulting in what are known as “vertical



Fig. 12. Photograph, Ciara Leeming, Vertical Slums?, India, 2009. Source: ciaraleeming.co.uk

slums” (Fig. 12).<sup>16</sup> Second, the people would lose the cultural and economic resources that the low-rise structures provide them through direct connection to the streets. The streets are the neighborhood’s most valuable resource due to their importance as cultural meeting places, businesses, and communal areas for performing daily tasks.

Once the design was approved by the people, Desai began the tedious task of slowly and carefully demolishing the qualifying houses and replacing them with safer and healthier ones. In order to do this correctly, the architects set up a local office in Yerwada so they could have direct access to the people if they had any issues regarding the designs and construction. Every plot of land was different in size and shape due to the incremental and informal nature of the streets. In order to achieve the 27 square meters required by the program, many long meetings and deliberations were held between neighbors and architects to ensure that everyone was in agreement before construction could proceed. Projects that shared a wall or had uneven plot sizes required special attention, and each neighbor had to consent to the project before any work could begin. Once all of the neighbors on a shared plot had arrived at an agreement, the architects would work with each family to tailor-make their home to fit the plot and the specific needs of the family. In these one-on-one

meetings, the architects learned many useful design considerations from the residents, such as the need for an underground water tank, an outdoor toilet, and lower ceiling heights in the restroom to provide more storage above. They learned that what they assumed the residents wanted, and what they actually needed, were often different things, emphasizing the importance of communication between resident and designer.<sup>17</sup>

One of the things that the designs provided for was communal space. The initial plans for the project allocated an additional 2 to 3 meters of space from each lot for widening the streets, thereby providing healthier, more spacious communal areas. However, in the meetings, the beneficiaries were adamant about holding onto every square meter of their homes and could not be persuaded otherwise. The architects chose to respect the resident's wishes and abandoned that part of the project.<sup>18</sup>

Finally, once all of the families involved consented to the project, construction could begin. The people often participated themselves in the demolition of their old homes or the construction of their new ones in order to reduce the amount of money they would have to provide. During the process, they would stay in temporary shelters in the streets or with relatives nearby, or they would rent a space. Upon completion of the project, each family would receive the deed to their house and decorate it as they saw fit.<sup>19</sup>



Fig. 13. Sketch, Some Typical Plans, Yerwada, Pune, India, 2025. Source: Author



Fig. 14. Interior of House in Netaji Nagar, Yerwada, Pune, India, 2025. (Photo by Author)

### Yerwada in its Current Context:

Each home began to take on a unique character as the families decorated and added to them, resulting in the vibrant cultural life that the architects had hoped to preserve in the streets. Due to the fact that each home was tailor-made, every house turned out differently. However, on average they had a ground floor with a bathroom and kitchen and a second floor with sleeping spaces (Fig. 13). Some iterations of the houses also allowed for a terrace on top that could be expanded into additional storage, an extra bathroom, or an outdoor space. These homes provided a cleaner, more efficient, and many times more spacious house for many in Yerwada. In an interview featured on Prasanna Desai's blog, one woman expressed her joy and gratitude at receiving more privacy in her home with additional rooms and a private toilet. Others praised the project for giving them dignified spaces for living.<sup>20</sup> One woman interviewed by the author conveyed her feeling about the project:

"I feel very happy. Before, we lived with a lot of struggle. We never even dreamed of having a pukka house. Now we have our own space, our own house, that itself is a big thing... I stay [here] alone, but people around me always help. If someone falls sick, neighbors immediately support each other. There is a sense of community"<sup>21</sup>

Although widely regarded as a successful project, it is criticized for a few reasons. Chief among these is the issue of public space. This project did not allocate any money to community spaces, public infrastructure, or social resources due to budget constraints and a refusal on the part of the participants to give up their land. However, one success that should not be overlooked is that it did provide running water and electricity to the entire neighborhoods, and all of the roads were paved into the area, improving the health and safety for everyone related to the project regardless of participation in the project or not. This is significant when considering that only 57% of people living in urban slums have access to drinking water inside their homes, according to a 2015 report from the Indian Ministry of Housing and Urban Alleviation.<sup>22</sup>

Another common criticism that many of the residents themselves bring up is the poor construction quality. Many corners were cut in the construction process, sometimes compromising the quality of the finished work due to monetary restrictions and minor corruption on the level of the local government.<sup>23</sup> However, water leaks and poorly applied plaster are markedly better than the conditions found in most Indian slums.<sup>24</sup>

Land tenure was another success on the part of the project. At the beginning of the project, the Pune Municipal Corporation agreed to denote the areas upgraded as slums. This gave the residents security from the threat of eviction and legitimized the neighborhood as part of the greater city. This had numerous positive effects on the quality of the neighborhood. With a guaranteed ownership of their house, the

residents are investing more quality and long-lasting materials into additional construction on their homes, thereby making incremental housing safer and more permanent through land tenure.<sup>25</sup>

This project successfully included the residents of the housing in the design process while preserving their cultural, economic, and historic resources and ensuring that their quality of life is elevated. When one walks into Yerwada today, it is difficult to identify which houses are upgraded and which ones are not. A safer pattern of construction is beginning to emerge that imitates the means and methods used in the project.<sup>26</sup> By having the humility and making the commitment to understand the needs of the people, Prasanna Desai and Urban Nouveau successfully provided housing that not only provided shelter for thousands of people from the bottom-up, but also empowered entire neighborhoods with the tools for self-improvement and autonomy. This project demonstrates the importance of working directly with the people who are receiving housing, as well as taking advantage of using the resources that naturally form in neighborhoods and cities.



*Fig. 15. Prasanna Desai, Upgraded Street in Chandrama Nagar, Yerwada, Pune, India, 2025. (Photo by Author)*



Fig. 16. Prasanna Desai, Upgraded Street in Chandrama Nagar, In-Situ Slum Upgrade Yerwada, Pune, India, 2011. (Photo by Author)



Fig. 17,18. Prasanna Desai, Upgraded Homes and Streets, Yerwada, Pune, India, 2025. (Photos by Author)

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## Quinta Monroy: Architecture that Re-Designs Policy



*Fig. 1. Chile's Prosperous Economy Seen in its Financial District (left) is Challenged by the Living Conditions of the Middle Class (right), Santiago, Chile, 2025. (Photos by Author)*

### **The Problem: Income Inequality and Land Rights in Chile**

During the twenty year reign of Chilean dictator Augusto Pinochet, many oppressive and violent policies were enacted that sought to reverse and subvert left wing movements and ideas that the former socialist president Salvador Allende had put in place. Among these were policies against the urban poor of Chile, or pobladores, evicting them from previously occupied land in prime real-estate locations in Chile's cities. The government seized this land for private real estate developers, moving the pobladores from their settlements in the city to poorly built government housing blocks on the distant peripheries of the city. In order to protest these evictions and the poor standard of living they were receiving, the pobladores participated in organized land occupations throughout the regime to assert their rights to fair housing. These land occupations consisted of thousands of people informally occupying prime real estate simultaneously. The sheer number of people involved in these occupations, coupled with the fact that Pinochet was losing favor with the general populace, resulted in many of these settlements being granted the right to live

on the land they occupied.<sup>1</sup> In the aftermath of the dictatorship, the country continued to struggle with income inequality and a massive housing shortage. Many of the pobladores continued to live in informal settlements that had dangerous and unhealthy living conditions, such as a lack of ventilation and daylight. The new democracy was faced with the problem of how to provide adequate housing to all of these informal settlements, without once again compromising their right to choose where they live in the city.

Due to the tenacious advocacy of the pobladores, their right to housing was recognized through the remainder of Pinochet's dictatorship and into the more moderate democratically elected governments of the '90s. During this era, Chile was often lauded as the "Poster child of Neo-Liberal Economics" due to its unprecedented economic prosperity, yet it continued to struggle with income inequality left over from the former regime.<sup>2</sup> The new government set out to meet the housing needs of the pobladores through a hybrid public/private subsidy model which they viewed as a politically moderate solution to the problem. In this model, the residents of the new homes would pay a mortgage for their subsidized home with the intent to own. Under this system, the state managed to provide an enormous four million homes to people in need. Yet after only a few years, up to 70% of mortgages were going unpaid and subsidized homes were being abandoned in large quantities. This was largely due to two main issues: one, the new subsidized housing was largely located in inaccessible, underdeveloped, far outer reaches of cities away from the people's jobs, families, and schools; and two, the quality of these houses was poor and unsatisfactory.<sup>3</sup>

A new policy was created by the national government in 2001 called Dynamic Debt-Free Social Housing (or its Spanish acronym VSDsD), which sought to eliminate the mortgage system and reduce the amount of money the families had to provide while increasing the subsidy for

the construction and doubling the federal subsidy. However, this left a considerable limitation on the budget of these projects because it reduced the standard size of the houses that could be afforded to 40m<sup>2</sup> (430ft<sup>2</sup>). This required the residents to expand on their own in order to achieve the standard 80m<sup>2</sup> (860ft<sup>2</sup>) of Chilean middle class houses.<sup>4</sup> A new solution was needed in order to solve the issue of both the affordability and quality of homes in Chile, one that Chilean architect Alejandro Aravena suggested, “may come from the slums and favelas themselves”<sup>5</sup>



*Fig. 2. Typical Street in Iquique, Tarapaca, Chile, 2025. (Photo by Melody McWhorter)*

### **An Architectural Solution: Navigating Policy**

The architecture firm Elemental was founded by three Chilean architects/policymakers at Harvard University in the year 2000. Its founders, Alejandro Aravena, Andres Iacobelli, and Pablo Allard, realized that their architectural skills could be used to solve the political and social issues found in Chile’s housing. While at Harvard, they participated in and curated several exhibitions, design

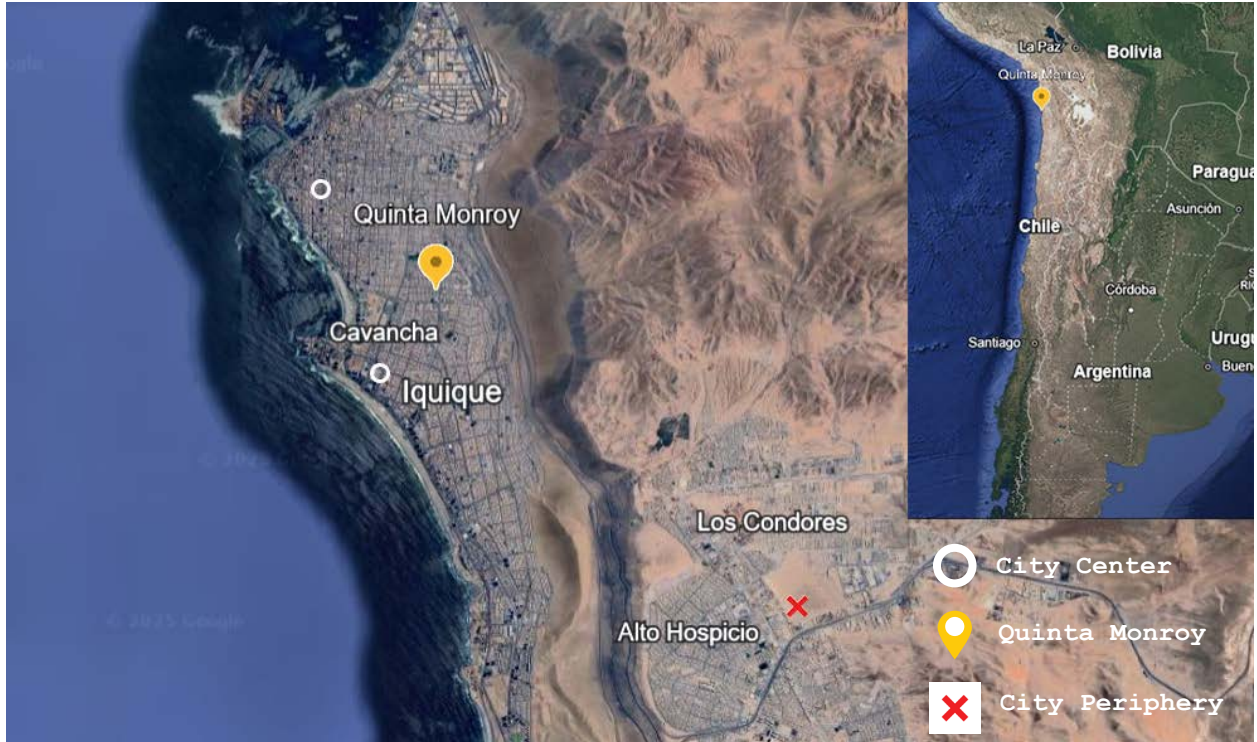


Fig. 3. Context Map, 2025. Source: earth.google.maps



Fig. 4. Iquique, Tarapaca, Chile, 2025. (Photo by Author)

studios, and workshops that sought to rethink Chile's policies and infrastructure through an architectural lens. These workshops included design studios where the students and professors experimented with unconventional ways of providing housing for large groups of people under Chile's limited resources for social housing.<sup>6</sup> In 2001, the firm was presented with their first opportunity to test their ideas when the central government invited them to Iquique, Chile discover how the ideas they developed in their studios would apply under the VSDsD program.

The informal settlement of Quinta Monroy (Monroy Farms) began in the late '70s when a large group of generationally diverse indigenous and immigrant families settled on .5 hectares (1.25 acres) of land near the center of the northern city of Iquique, Tarapaca, Chile (Fig. 2,4), a small coastal sea-port located in the Atacama desert in the north, known for its beaches, mountains, and duty-free shipping. The families of Quinta Monroy faced the threat of eviction following



*Fig. 5. Conditions in Quinta Monroy, Iquique, Chile, 2001. Source: Incremental Housing Design Manual*

the death of the owner of the land they were occupying and the neighbors complained about the unsafe and unhealthy living conditions found in the slum (Fig. 5).<sup>7</sup> Over the thirty years of the community's existence, the number of families living there had grown to nearly 100. The cramped hastily built labyrinth of alleys and streets became a den for drug trafficking and crime. Over 60% of the rooms found in the neighborhood had no light or ventilation at all. The average size of a house was about 30m<sup>2</sup> (320ft<sup>2</sup>), often shared between family members or sometimes even between multiple families. The neighborhood consisted of a diverse mix of ages and economic backgrounds, with single mothers making up a large part of the heads of households.<sup>8</sup>

The most important aspect of the neighborhood was its location. Quinta Monroy was only 10 minutes by car from the downtown of Iquique, and therefore close to jobs, daycares, schools, grocery stores, and every other resource that living in a city provides (Fig. 3). When the threat of eviction came down from the city government, the residents feared being relocated to the cheaper periphery of the city and thus losing all of these valuable resources.<sup>9</sup> Elemental would have to determine how to maintain the ownership of the land and provide quality homes with an extremely low budget.

### **Participatory Processes: Architect as Coordinator Between Policy and People**

During their workshops at Harvard, Elemental had formulated some very important philosophies to be considered during the design process. Their primary belief was that social housing should be treated as an investment. Rather than decrease in value over time like a car, a house is expected to increase in value. This overtime will provide social mobility and equity for the residents and ensure that public funds are benefiting society.<sup>10</sup>

Another key priority was that the housing should be located near the valuable social support systems that cities provide, such as jobs, schools, daycares, groceries, transportation and other vital infrastructure that guarantees a better quality of life. This is key to avoiding what Elemental calls the "reduce and displace" method of social housing where the size and quality of homes are reduced, and the residents are displaced from their normal social support to areas far away on the edges of cities.

One of the problems they recognized with conventional government housing was that the residents often felt ignored or overlooked in the bureaucratic process. Therefore they believe that the residents should be included during the design and construction process. Constantly keeping the residents informed and updated and allowing them to give their input is important for helping the residents feel acknowledged. This allows their needs to inform the design while the architect can communicate to them all of the restrictions and limitations of the design, such as budget and policy constraints, construction schedules, and design changes.<sup>11</sup>

Finally, the architects recognized the context in which they were designing. In Chile, adding informal self-built additions to one's house is very common. The architects acknowledged that the residents already had and would still participate in incremental additions to their houses in order to expand. By taking advantage of their proclivity to add expansions to their houses, the design could be accommodated for these additions, thereby channeling the creative energy of the people to provide a better and larger finished home that is adapted to the needs of each family.<sup>12</sup>

In their book titled *Incremental Housing and Participatory Design Manual*, Alejandro Aravena and Andres Iacobelli describe their outlook when it comes to informal housing and scarcity of resources:

"Favelas, slums, squats, and other informal settlements are normally seen as indicative of the incapacity of a population to access formal housing; but they could also be seen as the enormous capacity of the population to provide itself with the dwelling space despite lacking the tools to do so within the formal mechanisms of society... The real scarce resource then is not so much money, but coordination."<sup>13</sup>

Keeping these goals in mind, Elemental tested all of the housing typologies that the government allowed under the current VSDsD policy to see which house type would best pay for the high cost of land and allow all of the residents to live comfortably on the site with room to expand (Fig.6). The individual house typology consists of single family homes organized in rows across the site. This provided room for only thirty families. Subsequently there was not enough money to pay for the cost of the land nor adequate space for the families to expand. The two-story row house typology could fit sixty families, yet still not enough money would be available to pay for both the land and adequate homes. The final available typology, the multi-story apartment block, was rejected by the families before Elemental had the chance to interview them. In fact, despite being the most efficient use of the land, the families threatened a hunger strike if this typology was even suggested due to its long history of neglected communal spaces, abandoned and mismanaged service corridors like elevators and hallways, and its total lack of freedom to expand when needed.<sup>14</sup> Elemental would have to design a different housing typology than what was allowed under the current policy if they were

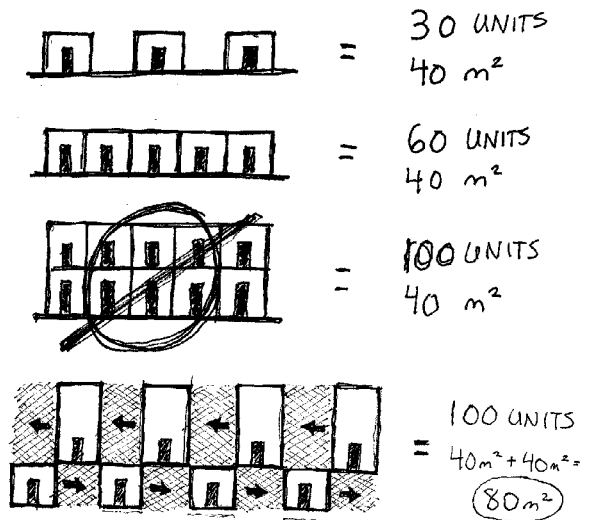


Fig. 6. Sketches, Diagrams of VSDsD Housing Types and Elemental's Half-A-House Type, 2025. Source: Author

to fit all of the residents on the site.

They devised the "Half-A-House" model (Fig. 6), inspired by a housing type they had worked with in a Harvard design studio. This housing type consists of apartment units staggered on top of each other with empty "porous" spaces between to allow for incremental expansion provided by the families. Instead of trying to provide the residents with an extremely small house with such limited resources, the architects could provide "half of a good house" that the residents could then expand into a middle-class sized house.<sup>15</sup>

After getting approval from the residents and the Housing Authority, Elemental proceeded to construct these staggered Half-Houses into four smaller courtyards organized by families. (Fig. 7) These provided more intimate communal spaces for clusters of the apartments. The portion of the houses to be built was determined to be the part of the house that the people would have the most difficulty building themselves. This included the kitchen, plumbing, and structural elements, leaving spaces for the residents to expand living spaces and bedrooms.<sup>16</sup>

Throughout the design and construction process, workshops were held with the residents to inform them of updates, setbacks, or design changes. The workshops prepared them to safely perform their expansions and demonstrated how to take care of communal courtyard spaces by providing them with technical knowledge and skills. These workshops covered a number of topics from design, decision-making, the bidding process, construction, structure, site visits during construction, and workshops for habitation and expansion.<sup>17</sup>

Nearly 60% of the expansions to the houses were completed only two months after construction ended, expanding the homes to a much more realistic and comfortable size. Some care was taken in workshops and inspections of expansions to ensure that they were safely built out



Fig. 7. Sketch, Layout of Quinta Monroy, Iquique, Chile, 2025. Source: Author

of appropriate materials near the beginning of the expansion period.<sup>18</sup> By allowing for and accommodating the resident's natural desire to informally expand, and attempting to provide a framework for this to be done safely, as well as including the residents into the design process, the Quinta Monroy project achieved a level of opportunity and autonomy for residents that they otherwise would not have received. This allowed them to gain a much larger quality space that fit each of their specific needs.



*Fig. 8. Alejandro Aravena, Quinta Monroy Before and After Expansions, Iquique, Chile, 2003.  
Source: Elemental Arquitectos*



*Fig. 9. Current Day Expansions, Quinta Monroy, Chile, 2025. (Photo by Author)*

### **Quinta Monroy in its Current Context**

In the twenty years since the start of the project, Quinta Monroy has grown to be an integrated part of the city's fabric. The new expansions in between the houses blend in with the other middle class homes of the area, and businesses and shops have sprung up around the settlement selling things like barbecue, empanadas, and other goods.

Every home except one has expanded to their full capacity and all display the signs of daily life and vitality that the architects hoped would add to the otherwise monotonous concrete frameworks.

Even as the project has grown and expanded, so have its criticisms. A study undertaken by professors Sandra Carrasca and David O'Brien at the University of Melbourne found that the average house has expanded 230% of its original size. They argue that the architects did not design the project to control or direct the informal expansions, and that the conditions in the houses are now reverting back to their former slum-like conditions.<sup>19</sup> This is most evident in the ground floor units which had 10 square meters less than the upstairs units to expand. Many of these units have expanded into their patios completely, blocking off all light and ventilation in the house. Other upstairs units have constructed illegal cantilevers over their



*Fig. 10. Illegal Expansions Such as Cantilevers or a Third Floor, Quinta Monroy, Chile, 2025. (Photos by Author)*



*Fig. 11. Middle Class Chilean Home Across from Quinta Monroy, Iquique, Chile, 2025. (Photo by Author)*

downstairs neighbor's patios or added a third floor to their units (Fig. 10). Although these criticisms have merit, they do fail to understand the project in its context.

Admittedly, the architects could and should have done more to instruct and assist the residents in making healthy and safe expansions aiming to avoid illegal or unsafe additions using poor quality materials. However, the current conditions of the neighborhood are comparable to the rest of the city and are not nearly as dangerous as they once were (Fig. 11). Overall, the idea that the residents are able to expand their homes as their families' needs grow is an important one in Chile. Almost every single home in Chile is expanded in some informal way. The architects were merely recognizing this trend and seeking to use it to the project's advantage.

Quinta Monroy, albeit far from perfect, represents an attempt to work within an existing flawed political and economic context to produce

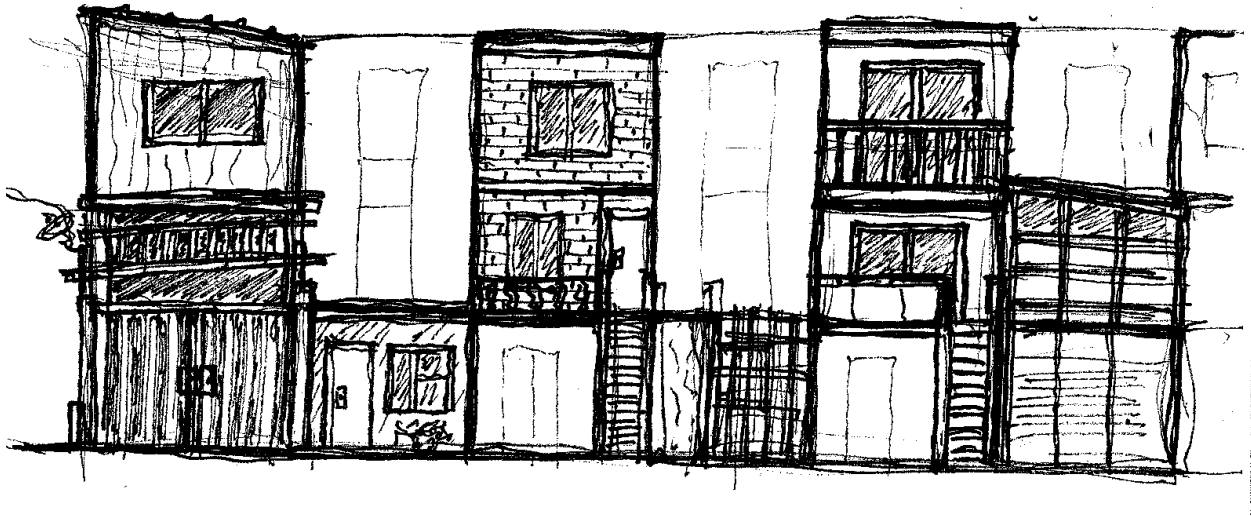


Fig. 12. Sketch, Room to Expand Empowers Residents, Quinta Monroy, Chile, 2025. Source: Author

the most quality home possible within its restrictions. It demonstrates the effectiveness of architectural criticism when challenging policy, rethinking concepts, and actively acknowledging recipients of public projects. The project has many flaws and drawbacks, the expansions have become unruly and many poorly built, and the communal spaces have been overrun with parked cars. From an outside perspective, the homes themselves may seem bare and low-quality. However, when one looks at the broader picture, the project stands out as an excellent attempt at changing social housing in Chile from the inside out. This is evident by the pride that people exhibit in their homes. One resident has expanded his home and helped neighbors with expanding theirs as well. He boasted to the author that his house is now larger than it used to be and that his neighborhood is the only one in the area that is earthquake proof. According to residents interviewed by the author, during the 8.1 magnitude earthquake in Iquique in 2014 not a single home in Quinta Monroy was damaged due to the designs of the architect's framework.<sup>20</sup> Another resident described his expansions of his house as milestones in his family's life. They expanded to

make room for their growing children, then his daughter moved into the house next door. Now he and his wife are getting ready to become 'empty nesters' and they are looking forward to having a large house all to themselves.<sup>21</sup> One final indicator of the project's success is the increase in property value realized. The houses are now selling for around \$75,000 USD, a 900% increase from the original \$7500 USD spent, achieving what Elemental intended when designing the houses to be an investment.<sup>22</sup>

Overall, the Quinta Monroy project represents an architect's attempt to make the best of existing circumstances. Although imperfect, Quinta Monroy has successfully empowered people to have more autonomy in their own housing through participatory design. Elemental used their expertise to provide a basic framework of structure and utilities in which the people could build their own homes and enabled them to get the best investment out of a flawed and complicated public policy. By including the people in the design process, communicating restrictions and design decisions, and rethinking policy, Elemental successfully created a viable neighborhood and pushed the boundaries of what social housing can be.



Fig. 13. Alejandro Aravena, Quinta Monroy, Iquique, Chile, 2004. (Photo by Author)

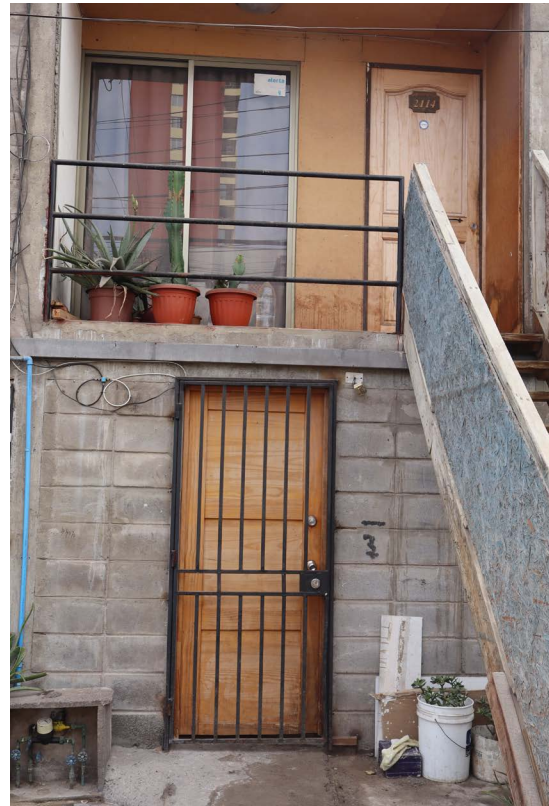


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**Walter's Way and Segal Close: Architecture by the people**



Fig. 1. Fredrick Gibberd, The Lawn Council Housing, London, UK, 1951. Source: versobooks.com

**The Problem: Poor Quality and Lack of Freedom in London Council Housing**

In the aftermath of World War Two, the United Kingdom found itself alarmingly behind other countries in its housing supply. The traditional English cottage house urbanism was no longer adequate for the large numbers of working class citizens in need of housing after much of London was destroyed in the bombings. From the end of the war to the 1970s, the local London Town Councils, the government bodies in charge of London's borough neighborhoods, attempted to solve this housing shortage through a top-down governmental distribution of homes known as council housing. They experimented with several

different typologies including row houses and large apartment high-rises. Although providing temporary relief to the issue, these houses rarely satisfied the residents who were forced to live in them because they were often poorly built or inadequate for growing families.<sup>1</sup> The policies necessary to provide shelter for thousands of people clashed with the preferences of those who were receiving the housing because they could not sufficiently meet the needs and wants of such a diverse group of people.

Located in southeast London is the borough Lewisham. A typical London suburb, Lewisham is dominated by 19th century Victorian row houses and small town centers with shops and schools. In 1975, the Lewisham Council's housing authority was experiencing a massive housing shortage. In the decades prior, the Lewisham Borough Council

had bought every piece of land available on the market with the hopes of providing more housing to the people. This unfortunately did not pay off because most of the land they acquired was small with uneven topography and poor soil conditions. These sites were not feasible for large-scale projects that used mass production and economies of scale to be affordable. This resulted in many vacant, unused sites. At the same time, the waiting list for

public housing was growing longer, and the cost of land was growing higher. Even the people who received public housing from the council were often dissatisfied. The housing officer for Lewisham was constantly



*Fig. 2. A Street in Lewisham, London, UK, 2025.  
Source: Author*

## Walter's Way and Segal Close

inundated with complaints about maintenance issues, and tenants rarely stayed in the housing they received due to its poor quality.<sup>2</sup>

The municipality tried numerous housing schemes, including apartment blocks, crowded row houses with terraces, and smaller low-rise tenement style apartments. Many of these configurations were not popular with Londoners for several reasons: they did not allow adequate space for growing families, they did not adapt to a diverse range of needs among residents, and they did not conform to the typical style of home in England, which is the detached home with a garden. Ownership of a detached home is a valuable social and cultural, as well as economic resource because it allows a family to grow financial equity and provides room for them to expand as their family grows and evolves.<sup>3</sup>

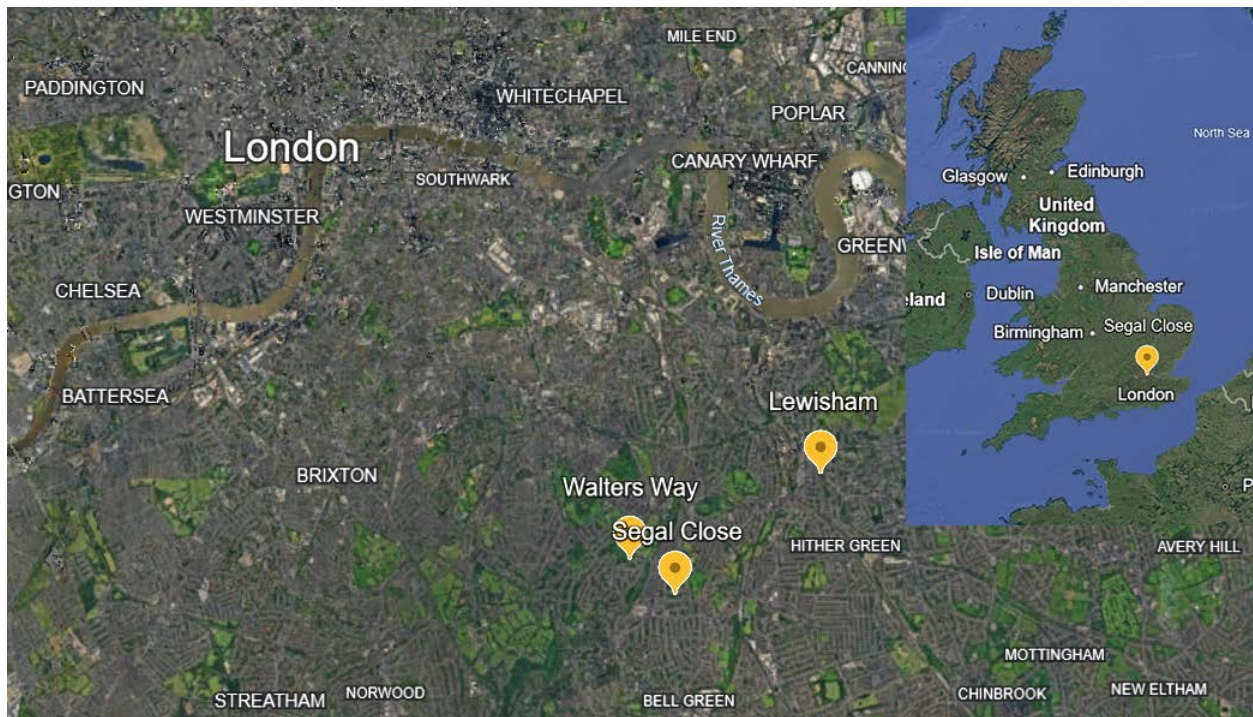
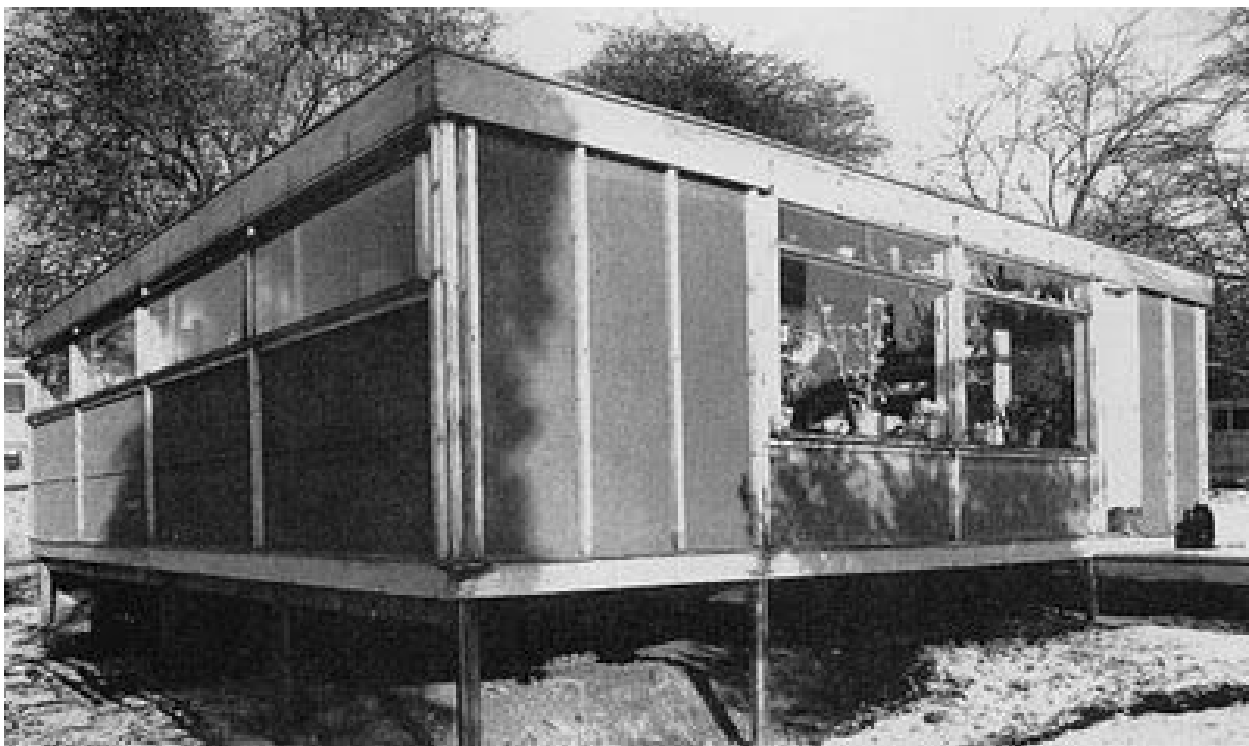


Fig. 3. Context Map, 2025. Source: earth.google.maps

**An Architectural Solution: Enabling People to Build for Themselves**

"I want to use my building method in connection with making a community." -Walter Segal<sup>4</sup>

The German-born British architect, Walter Segal, was obsessed with solving the problem of modern housing in London. Throughout much of his career Segal attempted to find the answer to efficient yet humane housing. He was convinced that the mass-produced high-rise housing schemes of the early 20th century were not the answer but rather that it lay with a high density, low-rise configuration, designed beginning with the intimate human scale of a house and then expanded into a neighborhood arrangement. After designing a house for he and his family (Fig. 4) in 1963 out of timber that was both affordable and easy to build. He began experimenting with this construction technique as a



*Fig. 4. Walter Segal, The Garden House, London, UK, 1963. Source: Walter Segal Self-Built Architect*

method of providing affordable housing efficiently.<sup>5</sup>

He devised a system that configured standardized mass-produced materials on a grid informed by their default factory sizes. These parts could all be bolted together into a timber frame to create largely efficient and free open plans that could then be subdivided into rooms as the user saw fit. The system, known as the Segal Method, was easily understood and built since it did not require much cutting and avoided the use of 'wet' trades like concrete and masonry that require expertise to execute. Its structural efficiency allowed for customization as well as adaptability to any site. Most importantly, this model would allow people to have choices in their dwelling needs.<sup>6</sup>

Segal spent several years working on his method with private clients but was always interested in applying it at a larger scale. Finally he was introduced to Jon Broome and Brian Richardson at a party. Richardson and Broome were both architects employed by Lewisham to design Council Housing. They were interested in alternative building styles like Segal's Self-Build method as a solution to the city's housing needs.

Richardson and Broome were both inspired by Segal's method. Not only did it provide quality affordable housing, but because it was easily understood by people not trained in construction it also gave those in public housing a level of unprecedented autonomy and control in their housing decisions. They saw this as a key to empowering and helping people so they convinced the council to invite Segal to present his ideas. The Segal method was attractive to the council because it saved money on labor and was able to take advantage of much of the council's land that was considered unusable. The most appealing factor was that the council would not have to put any work into maintaining the projects after they were completed, reducing the burden on public resources while also lessening the strain on the housing waiting list.

The council agreed to propose a solution that provided municipality land and materials to the builders in exchange for the builders paying a small mortgage on the homes with the goal that they would eventually take full responsibility of their homes.

Although harboring some doubts about the commitment of the potential builders, the council put out ads to the whole borough and set up an interest meeting. The people interested organized themselves into a self-build association, and the council approved Walter Segal as the architect in charge of organizing and coordinating this scheme. In a following meeting, fourteen people out of seventy-eight interested were selected by ballot for a trial project using the method. The others were put on a waiting list.<sup>7</sup>

### **Participatory Processes: Architect as a Guide to Help the People Build Themselves**

"It was the involvement of the occupant in the design and construction which was fundamental to Segal's intentions -- the technical method was important but secondary." -Walter Segal Self-Build Trust Magazine<sup>8</sup>

The early days of the project were marked with a general attitude of excitement as the participants looked forward to the opportunity of taking their housing into their own hands. This optimism was challenged by the slow moving and complicated bureaucracy that did not understand or trust the new idea. The project had to seek approvals from a litany of bureaucrats ranging from the fire safety inspector to the insurance auditor, all who questioned the unconventional design. They demanded plan layouts, material schedules, and square footage details that were impossible to provide at the outset because each home would be done by different builders at different paces. Segal and Broome, who was hired

on as his assistant, worked many hours responding to these requests on behalf of the residents. In the meantime, they held workshops which taught the builders the basic principles of carpentry, electrical work, plumbing, and power tools.<sup>9</sup>

After nearly three years of sluggish progress on approvals, permits, and permissions, work finally began on the site. Each builder planned out the layout of their homes and began assembling and raising each part. Segal and Broome spent time making sure that all of the drawings were accurate and the structure of each house was adequate and safe to build. Broome himself had been on the waiting list for a self-build house. When one of the original builders was forced to drop out due to a health issue, he found himself at the top of the list and he resumed that builder's work as his own house.<sup>10</sup>

The construction phase was one marked with extreme optimism and excitement, especially following the long and painful waiting period. Accounts of this time describe the builders as one big family: helping each other with their projects and spending a lot of quality time with one another. In his book on self-build, Jon Broome describes the experience of building his own home during this time:

"The actual building seemed endless. We would go home after a hard weekend's work and nothing looked as if it had changed.. I do remember a few evenings in the pub after a hard day's work, so tired that a silence would fall and glazed looks came into our eyes. This would be followed by collapsing into a hot bath, exhausted but satisfied."<sup>11</sup>

Broome goes on to describe the building parties they would have, where family and friends would be invited to help build in exchange for food, music, and drinks. The days when the wall frames were raised up and attached to the roof became an important milestone resembling a classic barn raising. In the evening after work and on weekends, the architects would travel to the site to advise and assist the builders.

First, the house would be laid out on Segal's 600mm (~24 inches) x 600 mm grid according to the builder's wishes. Segal would then determine the forces on the structural members and determine the location of the columns. This phase of the process was the area that the architect influenced the most, ensuring that the construction was structurally sound and that it complied with code and safety standards. It embodies Segal's idea that the architect merely provides the guidelines for the individual to flourish.



*Fig. 5. Segal Climbs Ladder at Segal Close, London, UK, 1979. Source: drawingmatter.org*

After the plan was organized and the structure was tested to be safe, the foundation was dug. The foundation consisted of four 900mm (~34 inches)-deep concrete piles covered in paving stones. The posts for the floor above would rest on top of these piles directly using the weight of the building to secure them. This foundation system was easy to build without skill and could be adapted to sloped sites with ease by cutting the posts to the desired length (Fig.7).

Next, the frames for the house would be assembled on the ground and raised up and attached to each other. This process was the most physically intense and required more hands to assist. After the frames were raised, the floor and roof joists could be assembled in between them and the roof finish material could be added. Segal intended for the roof to be completed first so that the builders would then have sufficient shelter to finish the remaining portion of the house regardless of the weather conditions. The floor material would be added, and then

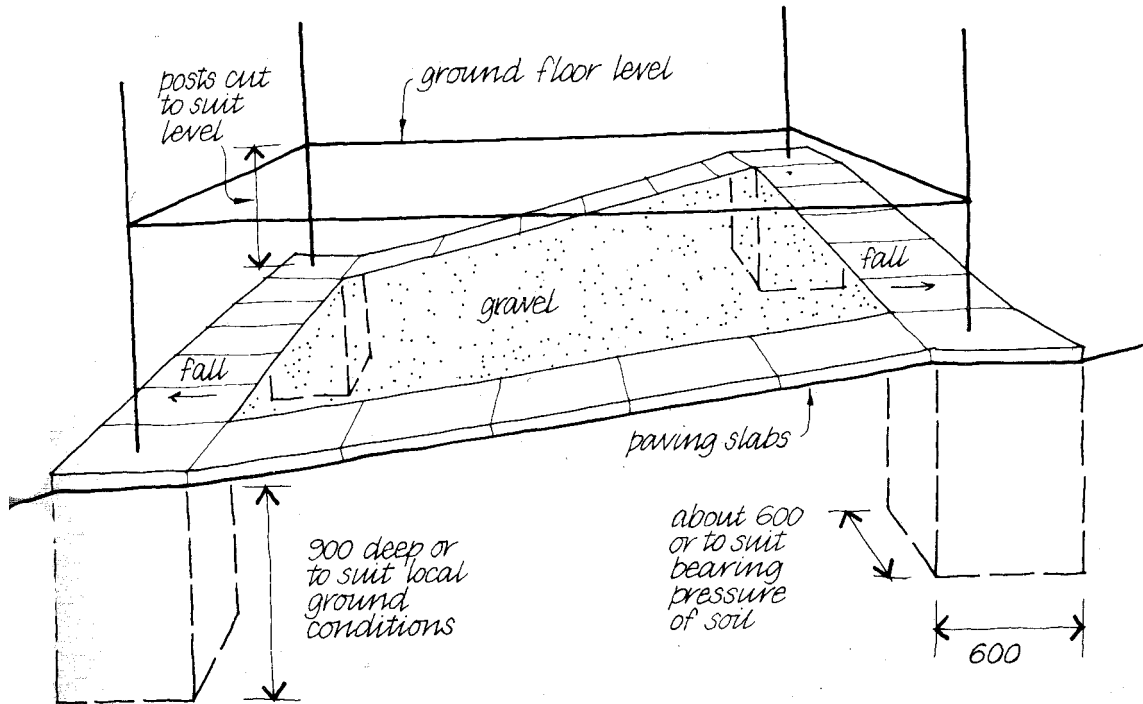


Fig. 7. Jon Broome, *Sketch of Segal Method Foundation*, UK, 1991. Source: *The Self-Build Book*

exterior wall panels, insulation, windows, and interior finishes could be secured in between the frames.

Because no interior walls were load bearing, there was a significant amount of flexibility with the arrangement of the rooms. The builders could even alter the layout as their families grew or their needs changed. There was



Fig. 6. Walter Segal, *Columns and Floors Erected*, London, UK, 1979. Source: [drawingmatter.org](http://drawingmatter.org)

also a large amount of flexibility with the placement and sizing of windows and the choice of interior finish material. Each builder slowly added to their home, piece by piece over a period of nearly fourteen months until every home on the site was completed.<sup>12</sup>

**The Segal Method in its Current Context:**

Following the success of the first scheme, later named Segal Close, several other projects were approved in Lewisham and neighboring Greenwich, including the famous Walter's Way neighborhood in Honor Oak Park (Fig. 12,15). Each project was completed at a different time with different results; however, all of the builders shared an increased level of confidence and satisfaction that they felt following the completion of their house.<sup>13</sup>



Fig. 8. Segal Method Home in Lewisham, London, UK. 2025. (Photo by Author)

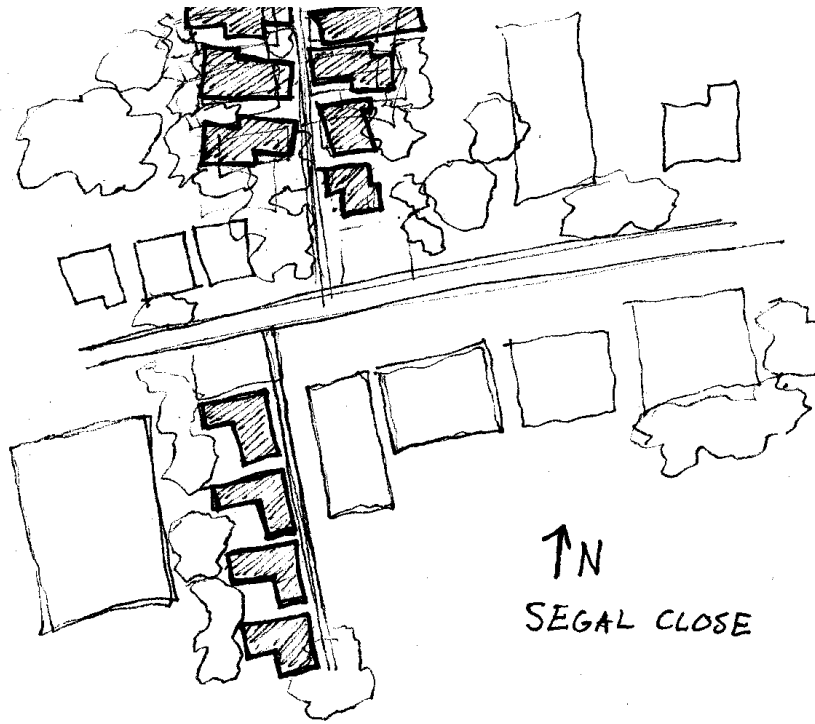


Fig. 9. Sketch, Plan of Segal Close, 1979, London, UK. Source: Author



Fig. 10. Interior at Segal Close, London, UK, 2017. Source: Walter's Way and Segal Close



Fig. 11. Interior at Segal Close, London, UK, 2017. Source: Walter's Way and Segal Close



*Fig. 12. Walter Segal, A House at Walter's Way, London, UK, 1981. (Photo by Author)*



*Fig. 13. Walter Segal, A House at Segal Close, London, UK, 1979. (Photo by Author)*

Many of the original builders from Segal Close and Walter's Way went on to become activists and community mobilizers encouraging more people to get involved in self-build and going on speaking tours to bring awareness to the opportunities it provides.<sup>14</sup>

Unfortunately, the Lewisham Council did not actively pursue the scheme at a larger scale. Only 200 or so houses were built as a part of their public housing plan. Although not applied at a large scale in Lewisham, the project made waves in the larger housing movement of the United Kingdom, inspiring self-build groups all over the country and the world to utilize the Segal Method or other types of cooperative housing models that provide more options and opportunities for people in need of housing.

Many of the criticisms surrounding the project arose from a stylistic point of view, complaining that the distinct structural frame of the houses was imposing and difficult to decorate. There are, however, many different styles of exterior finishes that have been applied to several Segal houses over the years very successfully. At the outset of the project, many people had doubts that timber would be a feasible building material due to England's wet and humid climate. However, these issues have largely been cleared due to the



Fig. 14. Walter Segal, House in Walter's Way, London, UK, 2025. (Photo by Author)



Fig. 15. Walter Segal, Walter's Way Neighborhood Street, London, UK, 2025. (Photo by Author)

carefully designed enclosure that has kept water out and away from the structural members.<sup>15</sup> Evidence of this is that all of the original houses are still in excellent condition nearly fifty years later.

The neighborhoods of Walter's Way and Segal Close today are quiet, peaceful neighborhoods tucked away in the busy Lewisham urban fabric. Little clusters of them peek out between overgrown English gardens and large trees. Neighbors help each other with their yard work, children play in the streets while parents watch from large generous windows letting in filtered morning light. Although a large physical impact on the housing issues of Lewisham was not made, the Segal Method managed to mobilize an entire generation of people to action, teaching them to help themselves and opening them to a whole world of possibility as long as they were willing to work hard to find it. Segal demonstrated the idea that an architect can help average people navigate the complicated bureaucracy of construction and enable

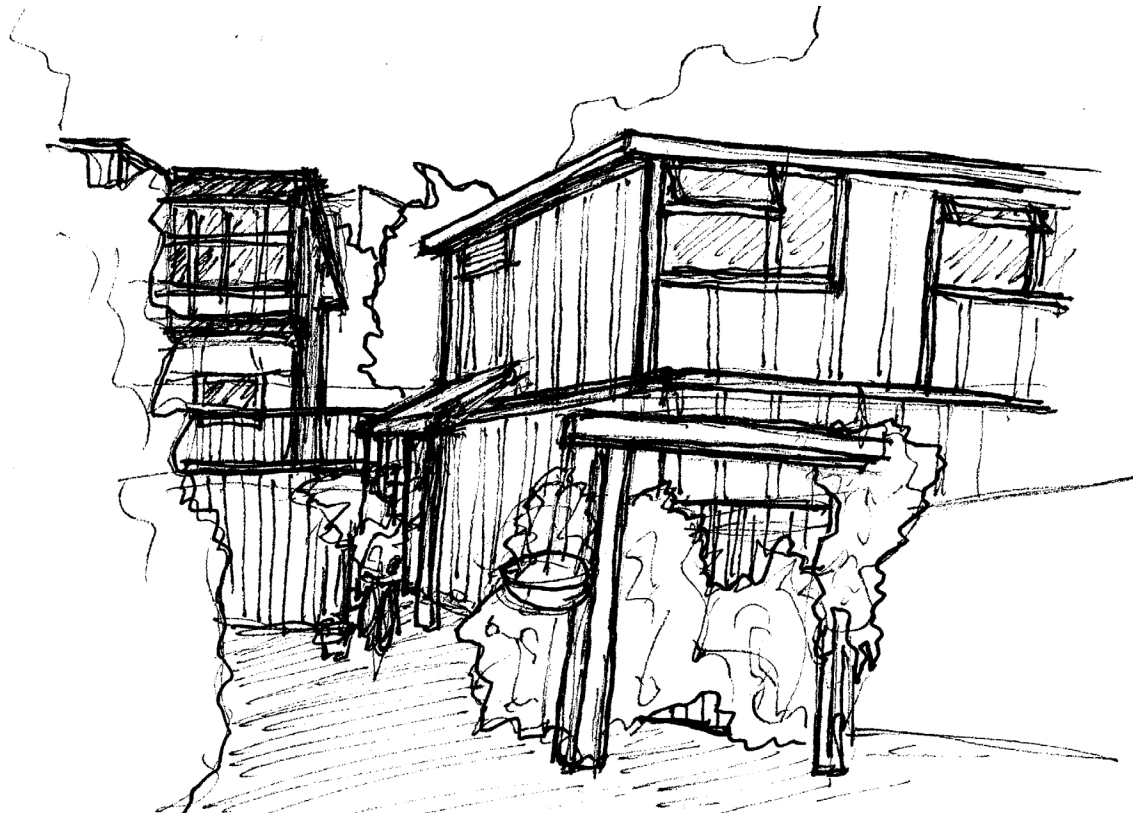


Fig. 16. Sketch, Walter's Way, London, UK, 2025. Source: Author

them to solve their own problems. The legacy of Walter Segal lives on as new housing developments begin to be built (Fig. 17,18,19) inspired by his principles keeping the idea of self-build housing alive and ensuring that everyone can gain access to a house that not only provides them shelter but empowers them to grow stronger and gain confidence in their roles as citizens and as humans.



Fig. 17. Architype, Some Segal Method Houses in Greenwich, London, UK, 2025. (Photo by Author)



Fig. 18. Jon Broome, The Rural Urban Synthesis Society, A New Take on Co-op Housing, London, UK, 2025. (Photo by Author)



Fig. 19. Another Self Build Project in Lewisham, London, UK, 2025. (Photo by Author)

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## **Towards a Democratic Architecture:**

### **Providing Personal Autonomy in Affordable Housing Through Participatory Design**

The summer's travels revealed many truths about participatory design and affordable housing. It is clear that architecture by itself is not enough to solve social problems. Architecture exists within a context of culture, economy, social values, and policies that shape the way it is developed and determine its results. The common thread that led to the successes of the case studies was that each one made room for the recipients of the housing to have input in the project. Examples of dialogue were found between client and architect that enabled the clients to navigate policy and receive what they needed. Whether it be designing a new urban framework for a community to grow in as seen in Portugal, using an existing urban fabric to support new housing inserts like in India, re-designing housing typologies to adapt to specific needs as in Chile, or creating a kit-of-parts system for a self-build project, each project used architectural ideas and methods to achieve a successful result.

The ideas demonstrated in this research have laid the foundation for future work. Each project is deeply rooted in its specific locale, and therefore should not be copied in other projects. Rather, the participatory design methods are the aspects which should be repeated. It is a practice that every architect can use to overcome design limitations and make the best project out of limited resources while ensuring that a client's needs are met. It is an attitude of problem solving that takes advantage of the inherent beauty of life that people bring to a design. If architecture is to contribute to the world's growing needs, this attitude is essential moving forward.

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