



POLITECNICO DI TORINO  
Department of Architecture and Design (DAD)

### **Hands and Hearts**

A Nurturing Young Lives Through Creativity and Sustainability

Master's degree program in  
ARCHITECTURE CONSTRUCTION CITY

### **Master's Degree Thesis**

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إلى اطفال سوريا .....

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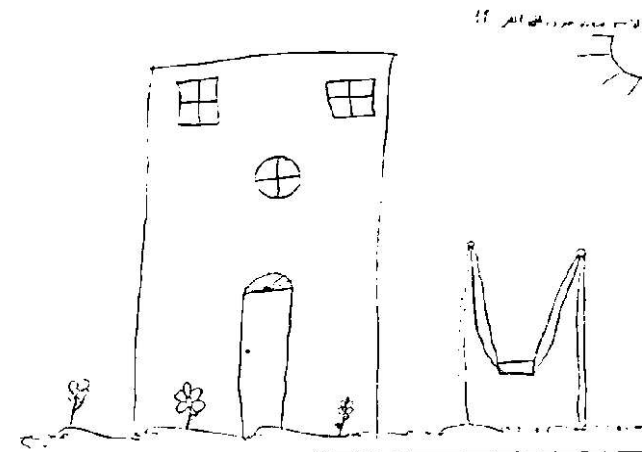


## Dedication

This work is dedicated to my family, who showed me the true meaning of love and unity. The strength of our bond is a constant presence in my life, guiding and supporting me through everything. Your support and sacrifices have made this journey possible. No matter how far apart we are, your love surrounds me, giving me the courage to keep moving forward. This achievement is as much yours as it is mine.

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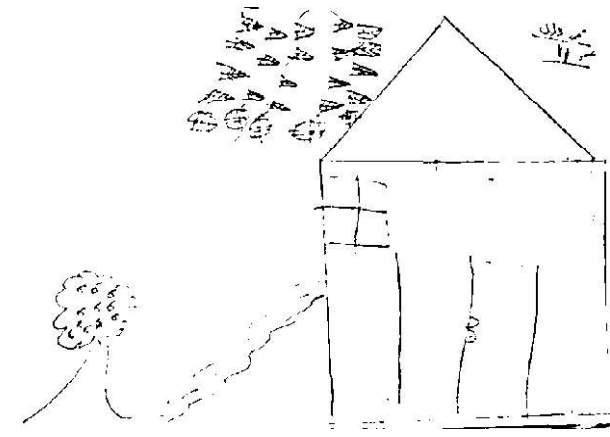


## Abstract

Amid the current situation in Syria, the plight of orphaned children remains a pressing humanitarian concern. This project proposes a multi-faceted architectural intervention that combines residential, communal, and agricultural elements to support the holistic development and well-being of orphaned children. Through a comprehensive exploration of architectural design principles, trauma-informed care practices, and community engagement strategies, this project aims to contribute to the reconstruction and revitalization of post-war communities by nurturing the resilience and agency of their youngest members. My Proposal Contains residential units for orphans, a community art gallery or exhibition space, a sustainable urban farm.

## Key Words

Children - Psychology - Trauma - Participatory Design – Orphanage - Security - Art - Farming



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## **INTRODUCTION**

In the heart of every society lies a duty to care for its most vulnerable members. In Syria, a nation torn apart by years of relentless conflict, this duty has never been more pressing. The war has left behind a tragic legacy of orphanhood, with countless children bearing the heavy burden of loss, trauma, and displacement. This thesis explores a crucial aspect of their plight—the architecture of orphanages—and proposes a design that not only shelters but heals, nurtures, and empowers these young souls.

Architecture, before anything else, is fundamentally a humanitarian discipline. It transcends mere construction and design, addressing the essential human need for shelter, community, and healing. As architects, we bear a profound responsibility not only to create spaces but to understand the people who will inhabit them. This responsibility goes beyond the technical knowledge of architecture and extends into fields such as medicine, psychology, and economics—each offering vital insights into the needs of those we design for. In the course of this thesis, I was drawn to the unique needs of children, particularly orphans, who face deep psychological and emotional scars from the hardships they have experienced.

The orphanhood crisis in Syria presents profound psychological, social, and contextual challenges. Each orphaned child faces emotional turmoil, identity crises, and social struggles. Addressing childhood trauma is paramount, as it impacts brain development and overall well-being. By understanding trauma and incorporating trauma-informed design principles, architects can create spaces that support healing and development.

Historically, orphanage design has evolved significantly. From austere institutions to modern approaches prioritizing emotional and psychological well-being, the architecture of orphanages has seen transformative changes. These insights are crucial for creating functional and compassionate environments that address the unique needs of orphaned children.

The centerpiece of this thesis is a design proposal for a mixed-use building centered around an orphanage. This innovative space envisions a haven where orphans can thrive, supported by an integrated exhibition area for artists and the public, and farming workshops promoting hands-on learning and community interaction. This holistic approach addresses the urgent need for such projects in Syria.

I hope this project can significantly contribute to a nation that has endured great hardship, providing a hopeful future for Syria's most vulnerable.

**Where should I begin, and who exactly are orphans?**

**"Design begins with understanding the user."**

CHAPTER



# 1. Understanding and Addressing the Orphanhood Crisis: Psychological, Social, and Contextual Perspectives

## 1.1 Addressing the Orphanhood Crisis: Challenges and Perspectives

### 1.1.1 The Global Orphanhood Crisis

The worldwide orphanage crisis is a complicated issue that has a big influence on social policy, public health, and child welfare. According to (Jaffer et al., 2023), there were around 140 million orphans globally in 2014, underscoring the severity of the problem. The distribution of these orphans, who have lost one or both of their parents, is unequal across continents. Most of these children are found in regions including Asia, Africa, Latin America and the Caribbean, Eastern Europe, and Central Asia (Jaffer et al., 2023). In 2016, there were more than 82 million orphans, mostly in South and Southeast Asia, suggesting a high concentration in this region.



Figure 1.1 kinshipunited.org

### 1.1.2 Definitions and Cultural Perspectives

varying cultures and religious beliefs have varying definitions of what an orphan is. A child under the age of 18 who has lost one or both of their parents is considered an orphan, according to (Jaffer et al., 2023). Islamic scholars emphasize the importance of the father in meeting the needs of the family by defining an orphan as a child who has lost their father before reaching adolescence (Jaffer et al., 2023).

### 1.1.3 Backgrounds of Children in Orphanages

Orphanage children come from a variety of backgrounds. Some come from divided or economically poor households, while others have lost one or both of their parents (Chik et al., 2021). Due to the lack of love and care from their families, these kids are much more likely to experience psychological anguish, which can seriously impair their emotional and social development. A child's psychological health can be impacted by the difficulties of parental loss and being placed in an orphanage in both positive and negative ways. Childhood parent loss can result in a number of mental health issues, including trouble getting basic requirements, a drop in academic achievement, and heightened susceptibility to dangerous behaviors (Jaffer et al., 2023; Johnson et al., 2019). Orphanages do not always have a bad effect, though. The psychological wellness of orphans can be positively impacted by efficient management and the provision of basic necessities, highlighting the possible advantages of well-run orphanages (Jaffer et al., 2023).

### 1.1.4 Psychological and Social Implications of Orphanhood

Orphanhood has significant and varied psychological impacts. Social stigmatization and isolation are commonplace for orphans, which can exacerbate their depressing and lonely feelings. According to (Jaffer et al., 2023), the absence of parental figures might result in a loss of support and direction during crucial developmental periods, which can impair decision-making abilities, lower educational attainment, and diminish life chances. Furthermore, some orphans may exhibit signs of anxiety, withdrawal, or violence as a result of the tragedy of losing parents (Jaffer et al., 2023). The orphan issue has far-reaching effects for society. Orphans are more vulnerable to exploitation, such as child labor, human trafficking, and other types of maltreatment, particularly those living in environments with limited resources. Comprehensive child protection policies and interventions are necessary since

these children are exposed to external hazards due to the lack of protective familial structures (Jaffer et al., 2023).

## **1.2 The Complex Emotional and Social Challenges of Orphanhood**

### **1.2.1 The Psychological and Emotional Landscape of Orphanhood**

Being an orphan has deep and wide-ranging psychological effects that are as complicated as they are tragic. The journey of an orphan is one that many of us can hardly fathom, yet millions of children worldwide traverse on a daily basis: a childhood devastated by loss and an identity fashioned in the crucible of absence. As these kids try to make sense of a world that seems to have abandoned them, their path is full of emotional upheaval and difficulties.

The idea of "home" is as elusive as a mirage in the desert, and the reassuring embrace of a father is only a far-off fantasy in the world of orphanhood. A child under the age of eighteen who has lost one or both of their parents to any cause of death is considered an orphan, according to the United Nations Children's Fund (UNICEF). The emotional turmoil these kids go through is hardly captured by this harsh term. According to UNICEF, there are an estimated 140 million orphans in the world. The figures are astounding. For the benefit of these kids and our societies' future, we must pay attention to and comprehend this worldwide problem (Neurolaunch, 2024).

### **1.2.2 The Attachment Conundrum: When Trust Becomes a Tightrope**

The development of attachment and trust is one of the biggest obstacles orphans must overcome. For many orphans, building relationships is like attempting to construct a house on shifting sands. Disrupting early attachment styles can have long-lasting effects that affect them for the rest of their lives. Our bonds to our caregivers begin at birth and act as a model for all subsequent relationships. This template is frequently broken or nonexistent for orphans, which makes it extremely difficult for them to build stable connections in later life. Relationships with peers, authority figures, and even love partners provide this difficulty.

The potential for profound, enduring love might be overshadowed by the dread of being abandoned. However, many orphans can learn to develop healthy relationships and trust with the correct help and treatments. This path

of self-discovery and recovery calls for tolerance, comprehension, and frequently expert advice (Neurolaunch,2024).

### **1.2.3 The Orphaned Child's Identity Crisis**

For orphans, the process of forming their identities can be as difficult as attempting to put together a jigsaw puzzle with half of the pieces missing. A major element in the psychological landscape of orphanhood is the fight with the construction of one's own identity. Growing up without the background knowledge of family history or origin stories can cause a person to feel very disconnected from who they are.

Low self-esteem and problems with self-worth are common symptoms of this identity crisis. Many orphans struggle to see their own value and uniqueness without the family mirror to reflect it back to them. This difficulty can last well into adulthood. Identity formation can be further complicated by the sentiments of rejection and abandonment that come with being an orphan, which can result in a chronic sensation of being "unwanted" or "unlovable." But many orphans also become remarkably resilient and independent, constructing their identities from their own talents and experiences (Neurolaunch, 2024).

### **1.2.4 Navigating the Emotional Rollercoaster**

An orphan's emotional terrain is frequently as turbulent as a stormy sea. Parental loss, whether due to death, abandonment, or other causes, can have a domino effect on behavior and emotions. Orphans' lives are often plagued by depression and anxiety, which make even basic chores feel draining. Another frequent companion is post-traumatic stress disorder (PTSD), which is particularly prevalent in people who have gone through catastrophic losses or insecure living circumstances. For kids, PTSD symptoms including nightmares, flashbacks, and strong emotional reactions can be especially difficult to comprehend and control.

As a natural reaction to the unfairness of their circumstances, anger frequently rises to the surface. This anger can cause behavioral problems and social challenges if it is not properly expressed and managed. For orphans, emotional regulation—the capacity to control and react to emotional experiences—can be a major obstacle. Many people find it difficult to manage their emotions in a healthy way if they are not regularly shown how to express themselves emotionally and how to cope. These difficulties are not insurmountable,

though. Orphans can acquire coping mechanisms, emotional processing skills, and emotional resilience with the right help and intervention (Neurolaunch, 2024).

### **1.2.5 Social Struggles and Academic Hurdles**

Orphanhood frequently has repercussions in the social and intellectual spheres, posing particular difficulties for young kids as they negotiate peer and school connections. Attempting to join a dance without ever hearing the music can be akin to social integration. Many orphans find it difficult to blend in with their peers and feel like outsiders all the time. This is frequently made worse by possible delays in the development of social skills.

Academic performance may be significantly impacted. Like trying to study a book in the middle of a storm, the emotional upheaval and instability that come with being an orphan might make it hard to concentrate on your academics. Orphans are also more likely to experience social isolation and bullying. Peers who might not comprehend their particular difficulties may target them because of their perceived differences. The harsh irony is that people who are most in need of assistance and connection are frequently marginalized within social groupings.

In spite of these obstacles, a lot of orphans grow incredibly resilient and determined. They can overcome these obstacles and succeed academically and socially if the proper support networks are in place (Neurolaunch, 2024).

## **1.3 Addressing and Mitigating Childhood Trauma in Orphans**

### **1.3.1 Understanding and Addressing Childhood Trauma in Orphans**

Kinship homes frequently get children who are troubled by their background. Since they haven't encountered a safe atmosphere in a long time, if at all, many people are so overcome with dread that they lose all ability to respond and are unable to understand what it means. Healing these kids is a very difficult and complicated process (Kinship United, 2021).

### **1.3.2 Adverse Childhood Experiences (ACEs)**

The Adverse Childhood Experiences (ACE) Study, a groundbreaking study conducted by Kaiser Permanente and the CDC in 1998, completely changed our knowledge of childhood trauma. (CDC and Kaiser Permanente, 1998) This study identified Ten categories of negative experiences that happened before the age of 17 were found by this study, including domestic substance misuse, violence, and neglect. The results were startling: these early traumas were associated with a wide range of physical health conditions, including diabetes, cancer, heart disease, and Alzheimer's, as well as effects on income and educational attainment, in addition to psychological disorders including anxiety, despair, and PTSD.

### **1.3.3 Long-Lasting Effects of Childhood Trauma**

One could wonder why the impacts of these traumatic events are so widespread and long-lasting. In her book "The Deepest Well," California Surgeon General Nadine Burke Harris explains how childhood adversity changes cell replication and hormone synthesis, which has a profound impact on physical health (Harris, 2018). She compares a child's daily encounter with a bear to the ongoing activation of their fight-or-flight response in a 2014 TED Talk. Even in situations where there is no immediate threat, this chronic stress response—which is fueled by continuous releases of cortisol and adrenaline—disturbs normal brain growth and function, making it harder to regulate oneself (Harris, 2014).

### **1.3.4 Impact on Brain Development**

Different parts of the brain are affected by chronic stress in different ways. The hippocampus, which is essential for memory and mood regulation, the prefrontal cortex, which is in charge of executive processes like focus and memory, and the amygdala, which can exacerbate anxiety and fearfulness, can all be negatively impacted. According to Dr. Roy Lubit, these physiological alterations result in significant psychological symptoms such ongoing nightmares, difficulty focusing, emotional instability, and social disengagement (Lubit, n.d.).

### **1.3.5 Treating Trauma in Kinship Projects**

Adverse childhood experiences (ACEs) are common in the United States; according to the ACE Study, more than 60% of adults had at least one ACE

during their childhood. However, these experiences are almost ubiquitous for kids in Kinship Projects. Many of these kids, who are frequently orphans, have experienced significant traumas like abuse, exposure to conflict, and the death of parents. A protracted process of repairing their emotional and mental wounds begins when they enter a Kinship Home. In order to effectively treat PTSD, Dr. Lubit highlights the importance of a secure setting, emotional support, and reassurance (Lubit, n.d.; Kinship United, 2021).

### 1.3.6 The Role of Kinship Projects

Beyond providing for necessities like food, housing, and education, Kinship Projects often include therapeutic pursuits like theater and music. By offering stability and support, these programs hope to help children build connections with adults based on trust. Rebuilding trust gradually is crucial to lessening the impact of previous trauma. "The hurt happens in relationships, and it takes new relationships to promote healing," as trauma-informed care advocate Vicky Kelly states in her TED Talk (Kelly, 2014; Kinship United, 2021).

## 1.4 The Struggles of Orphans in War-Torn Syria

### 1.4.1 Orphans in Syria: The Impact of War and Their Struggle

People in Syria have endured unspeakable agony as a result of the ongoing violence, especially the children who have lost their parents. As Syrian orphans struggle with the duties that accompany losing their family's primary provider, their lives have become an unbearable burden. The Syrian Human Rights Network reports that between March 2011 and 2021, 227,413 civilians have died in the conflict, leaving a great number of children without parents. These orphans are struggling to find purpose in their changed life as they shoulder the burden of adult duties (Violet Organization, 2022).



Figure 1.2 violetsyria.org

### 1.4.2 The Dual Trauma: Loss and Displacement

These youngsters have experienced both the trauma of losing their parents and the atrocities of war as a result of the ongoing crisis in Syria. Many Syrian youngsters are uprooted and now live on the streets or in makeshift tents instead of being protected by the roofs of their homes. UNICEF projected that approximately one million Syrian children were orphaned in 2018, with 90% of them not having insurance. However, precise numbers on the number of orphans are difficult to come by.

Ten percent of Syrian youngsters had lost one or both of their parents to the conflict, the group added. These figures have increased as the conflict has continued into its tenth year, adding to the agony of the children as they deal with ongoing displacement, unstable finances, and health issues. There are currently about 680,000 children living in camps in northwest Syria, many of them are orphans dealing with serious financial, medical, and psychological issues, including interrupted schooling (Violet Organization, 2022).

### 1.4.3 Psychological Trauma and Mental Health Challenges

Syrian children's mental health has been significantly impacted by the ongoing conflict. The next generation will have severe psychological scars, which will show themselves as tension and aggressive conduct, according to Save the Children. One of the most devastating events for a youngster is losing one or both parents, which leaves them feeling exposed and uneasy. The absence of primary caregivers has a profound impact on younger children in particular. These orphans need a lot of physiological, psychological, educational, and social support, which puts a big strain on foster families, communities, and the government to give them the resources and care they need to deal with their trauma. (Violet Organization, 2022).

### 1.4.4 Socioeconomic Hardships and Child Labor

In addition to negatively impacting the psychological health of orphaned children, the war has compelled many of them to engage in child labor. These children have been forced into the workforce to support their families due to financial difficulties and a lack of family support. Many of these adolescents labor in dangerous and demanding occupations in factories and workshops in northwest Syria. UNICEF estimates that between 2019 and 2020, almost 2.5 million Syrian children were not attending school, and many of them were compelled to work as a result of the epidemic and economic issues. These children's struggles are made worse by the cycle of poverty and exploitation, which denies them access to an education and a secure upbringing. (Violet Organization, 2022).



Figure 1.3 globalcitizen.org

### 1.4.5 Insufficient Support for Orphans

Northern Syria's orphan assistance networks are very inadequate. According to a May 2021 report by the Turkish Orphanage Foundation, 1.2 million children in northwest Syria are orphans, many of whom live in orphanage and widow camps. The resources at hand are not enough to address the requirements of all of these youngsters, notwithstanding the efforts of humanitarian organizations. There are large gaps in the care of many orphans since they do not obtain the required sponsorship and support. These vulnerable children cannot receive proper shelter, schooling, or psychological assistance from the overburdened mechanisms now in place.

In conclusion, the number of orphans has grown dramatically as a result of the Syrian conflict, and they now have to deal with the added trauma of losing parents and experiencing war. Due to the severe psychological, social, and financial difficulties these kids face, it is imperative that local and global societies make thorough and ongoing efforts to aid in their rehabilitation and assimilation (Violet Organization, 2022).



**Can architecture heal children who have experienced  
trauma?**

CHAPTER



## 2. Trauma-Informed Design in Architecture

### 2.1. Trauma-Informed Design and the Built Environment

#### 2.1.1 The Big Idea

A complete framework that combines the ideas of trauma-informed treatment with architectural design procedures is called trauma-informed design. The goal of this strategy is to design architectural settings that facilitate therapeutic treatments and control physiological reactions. Designing environments that are naturally loving and helpful for trauma survivors is essential because trauma affects both the body and the mind, and our physical surroundings have a big impact on how trauma is experienced. Comfort, community, and choice should be given top priority during the design process. To make sure the spaces satisfy residents' and staff's individual needs, a participatory pre-design phase should be included (Grabowska, 2021).

#### 2.1.2 Understanding Trauma

When a major stressor overwhelms a person's coping skills and has long-lasting negative repercussions on their physical, social, emotional, event spiritual well-being, it is referred to as trauma. Personal (e.g., emotional abuse, accidents), systemic (e.g., racism, sexism), environmental (e.g., natural disasters), or historical and cultural (e.g., colonization, genocide) are some examples of these early traumatic events. Some people may bounce back from trauma quickly, while others may suffer from chronic conditions like post-traumatic stress disorder (PTSD). A person's vulnerability to chronic traumatic stress is influenced by a number of elements, such as the severity of the crisis, their level of resilience, and the availability of support networks (Grabowska, 2021).

#### 2.1.3 The Role of Space

Before any cognitive processing takes place, our initial encounters are with our physical surroundings, which can cause instantaneous physiological reactions. For trauma survivors, stress reactions like fight, flight, freeze, or fawn may be triggered by their body warning of danger before they are aware of it. Carefully considered architectural design can help control these reactions by establishing spaces that promote tranquility and safety. A well-designed area can promote recovery by offering comfortable, safe, and familiar settings. To encourage wellbeing and healing, physical environment design must take into

account and address the physiological repercussions of trauma (Grabowska, 2021).

#### 2.1.4 Physiology and Common Triggers

Trauma can interfere with the body's natural processes, causing incorrect memory processing, increased emotional reactions, and a loss of cognitive control over fear. Disturbing sounds (like footsteps or slamming doors), offensive smells (like mildew or cigarette smoke), a lack of security (like open windows or broken security cameras), visual noise (like confusing wayfinding or indistinguishable corridors), and uncomfortable sensations (like a narrow hallway or an unadjustable thermostat) are common environmental triggers that can intensify these reactions. It is crucial to create structures that reduce these triggers and offer a feeling of safety and comfort in order to prevent trauma from being repeated. By addressing these factors, the built environment's therapeutic potential can be greatly increased (Grabowska, 2021).

#### 2.1.5 Principles of Trauma-Informed Design

The significance of designing physical spaces that promote healing and recovery is emphasized by trauma-informed design. In order to promote therapeutic treatments and regulate the body, especially for those who have undergone trauma, architectural design is essential. Safety, reliability, peer support, and teamwork are important tenets (Committee on Temporary Shelter, 2018). People can feel more at ease and have less worry if areas are made to be safe and secure. A sense of safety can be increased by features like protected entrances, regulated access, and clear sightlines.

#### 2.1.6 Creating Intimate and Safe Relationships with Buildings

The healing process can be greatly aided by cultivating a close and secure relationship with a building. People suffering from trauma need a sense of stability and predictability, which can be found in buildings created using trauma-informed design principles. People can feel more at ease and foster a sense of belonging in intimate settings that provide privacy, warmth, and individuality. This method can be especially helpful in places like orphanages, where kids need to feel safe and nurtured in order to flourish. An environment that promotes emotional regulation and well-being can be created through

the use of biophilic design components, natural light, and soothing hues (Designing for Healing Dignity & Joy, 2020).

## 2.2 Approaches for Creating Therapeutic and Safe Environments for Traumatized Children

### 2.2.1 Personalized Design and Transition from Private to Public Spaces

- Personalization Through Design:

In order to create environments where people, particularly children in orphanages, can strongly develop a sense of ownership and identity, personalization in architectural design is essential. Designers can help kids feel more a part of their living space by including elements that promote individual expression. This can be accomplished in orphanages in a number of ways:

- Mural Walls: These walls provide a canvas for children to express their creativity through art, allowing them to leave a personal mark on their space. This can be an ongoing project, fostering a sense of pride and accomplishment.



Figure 2.1 freepik.com

- Ledges Outside Residential Unit Doors: Such ledges can be used to display personal items, artworks, or seasonal decorations. This not only personalizes the space but also creates a sense of community as children and staff can appreciate and comment on each other's displays.
- Bookshelves: Personalized bookshelves in living units or common areas allow children to display their favorite books, toys, or memorabilia. This not only reflects their interests and personalities but also encourages reading and sharing of stories.



Figure 2.2 pinterest.com

These design elements help combat feelings of isolation and marginalization, promoting a sense of belonging and inclusion. Personalization fosters emotional connections to the environment, making children feel valued and understood. It's an approach that ensures each child sees their unique identity reflected in their surroundings, which is crucial for their emotional well-being and development (Harte, 2019).

- Slow Shift from Private to Public Areas:

The idea of a slow shift from private to public areas is crucial in designing comfortable and secure environments for children in orphanages. This involves creating gentle transitions, or thresholds, that help children navigate their surroundings with ease, providing a sense of security while gradually exposing them to social interactions.

- Indoor/Outdoor Transitions: Designing seamless transitions between indoor and outdoor spaces can greatly enhance the comfort and usability of the orphanage. This can be achieved through features like large windows, sliding doors, and covered patios that blur the lines between inside and outside areas. Such transitions can encourage children to spend more time outdoors, benefiting from natural light and fresh air.



Figure 2.3 behance.net



Figure 2.4.clarknensen.com

- Public/Private Transitions: Within the building, transitioning between public and private areas should be smooth and intuitive. For example, communal areas like dining rooms and play areas should lead naturally into more private zones like bedrooms and study rooms. Using elements like partial walls, curtains, or changes in flooring can subtly guide children through these transitions.

- Compression/Expansion Spaces: Incorporating spaces that vary in size and openness can cater to different needs and moods. Smaller, cozier spaces can offer solitude and comfort, while larger, open spaces can encourage group activities and social interaction. This variation helps children find the balance between privacy and community engagement.
- Rooms Within Rooms: Creating smaller, defined spaces within larger rooms can provide children with safe zones where they can retreat when feeling overwhelmed. These can be reading nooks, small play areas, or quiet corners designed with comforting and familiar elements.



Figure 2.5 archdaily.com

Such thoughtful transitions help in providing a balanced environment where children can feel both secure and socially engaged. This gradual exposure helps reduce anxiety and fosters a sense of stability and predictability, which are essential for trauma recovery. By ensuring that these transitions are gentle and accommodating, designers can create spaces that support the psychological and emotional needs of children, helping them thrive in their new environment (Committee on Temporary Shelter, 2018; Grabowska, 2021).

### 2.2.2 Less-Industrial Materials and Integration with Nature

- Use of Less-Industrial Materials:

Incorporating less-industrial materials in orphanage design can create a more humanizing and comforting environment. Materials such as reclaimed wood, raw concrete, and natural fibers add warmth and texture to spaces, making them feel more welcoming and less institutional. This approach not only enhances the aesthetic appeal but also promotes a sense of continuity and connection to the natural world. Using humble materials with artistic precision can elevate the quality of the space, making it feel more personalized and unique (Kwant, 2019; Grabowska, 2021).



Figure 2.6 archdaily.com

- Inviting the Outdoors In:

Integrating elements of nature into the architectural design of orphanages can have profound therapeutic benefits. Features such as garage doors and large windows can invite the outdoors in, highlighting the changes in natural light throughout the day and the seasonal variations in flora. This connection to nature can help regulate the body's circadian rhythms and provide a calming and restorative environment for children. Designing gentle transitions between indoor and outdoor spaces, such as through the use of thresholds and biophilic elements, can further enhance this connection (Browning & Ryan, 2020).

### 2.2.3 Patterns, Variations, and Human Scale

-Designing with Patterns and Variations:

Using patterns and variations in architectural design can help create dynamic and engaging environments that support healing. Trauma often leads to black-and-white thinking, and incorporating patterns with variations can help individuals find the grey spaces between extremes. This approach encourages flexibility and adaptability in the use of spaces, providing options for both interaction and withdrawal. Designing multiple 'islands' of interaction or retreat within a space can cater to different needs and preferences, supporting both extroverted and introverted behaviors (Pallasmaa, 2014).

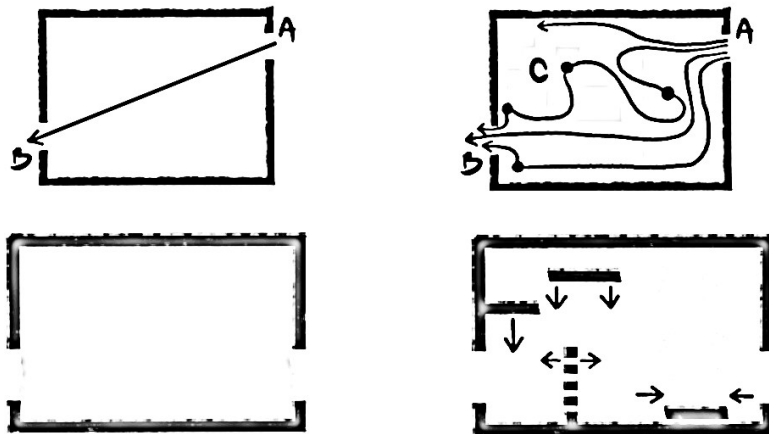


Figure 2.7 TRAUMA INFORMED DESIGN. (2021). Grabowska, Sam.

- Maintaining Human Scale:

Breaking up large spaces into smaller, more manageable units can enhance the sense of comfort and security in orphanages. Using dropped ceilings, perforated walls, or area rugs can create distinct zones within larger spaces, making them feel more intimate and approachable. Maintaining a human scale in design ensures that spaces are legible and easy to navigate, with clear lines of sight to see where one has come from and where they are going. This approach can help children feel more oriented and secure in their environment (Golembiewski, 2010).

### 2.2.4 Identity Anchors and Connection to Community

- Building Identity Anchors:

Identity anchors are design elements that help individuals see themselves reflected in their environment, fostering a sense of belonging and connection. In orphanages, creating a constellation of 'touch points' or 'anchors' for various identities can help children feel valued and included. This can involve incorporating cultural, historical, and personal symbols into the design, allowing children to see parts of themselves in the building and in each other. Space should be intentionally left for personalization and expression, promoting a sense of ownership and identity (Felitti et al., 1998).

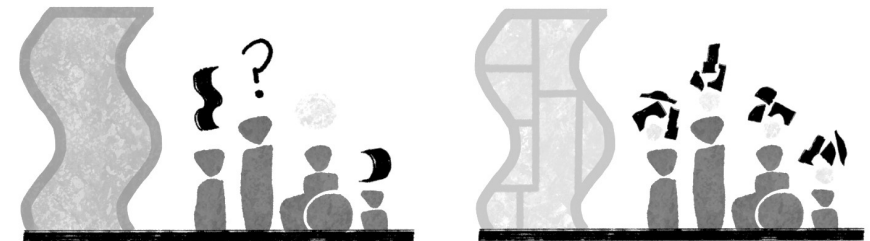


Figure 2.8 TRAUMA INFORMED DESIGN. (2021). Grabowska, Sam.

- Connection to Self, Community, and Landscape:

Designing orphanages that connect children to their self, community, and landscape can support their healing and development. Building a sense of self involves creating spaces that allow for personal expression and reflection. Connecting to the community can be achieved through intergenerational spaces and communal areas that encourage social interaction and community-building. Integrating the landscape into the design, such as through therapeutic gardens and outdoor play areas, can provide a connection to nature that supports emotional regulation and well-being (Marcus & Sachs, 2014).



Figure 2.9 vwartclub.com

### 2.2.5 Gradients of Security and Legibility

#### - Gradients of Security:

Creating gradients of security from the main entry to private residential units can help establish a sense of safety and trust over time. This approach involves designing spaces with varying levels of security and privacy, allowing children to gradually adapt to their environment and feel more secure. Features such as secure entries, clear sightlines, and controlled access can enhance safety, while flexible design elements can accommodate changing needs as trust is built (Richardson & Rosenberg, 2019).

#### - Enhancing Legibility:

Ensuring that spaces are legible and easy to navigate is crucial in supporting the well-being of children in orphanages. Clear lines of sight, intuitive wayfinding, and distinct spatial landmarks can help children orient themselves and feel more confident in their environment. Legibility in design reduces anxiety and supports a sense of control and predictability, which are essential for trauma recovery (Golembiewski, 2010).

### 2.2.6 Socio-Cultural Context and Design Values

#### - Socio-Cultural Context:

Understanding and incorporating the socio-cultural context in orphanage design is vital in creating spaces that are responsive to the needs of children. This involves acknowledging the unique identities, histories, and experiences of the community served. Partnering with community organizations and engaging with residents and staff can provide valuable insights into their lived experiences and preferences. This collaborative approach ensures that the design is culturally sensitive and inclusive (Korpela, 1989).

#### - Design Values and Approach:

Designing with trauma-informed principles involves recognizing the impermanence of buildings and the evolving nature of relationships between people, space, and objects. Architecture should be flexible and adaptable, capable of responding to changing needs and supporting the healing process over time. Emphasizing balance, choice, and consent in design can help create environments that are both secure and empowering. Building strong relationships with contractors, consultants, and clients, and incorporating feedback into the design process, can enhance the overall quality and effectiveness of the spaces created (Beatley, 2018; Grabowska, 2021).

### 2.2.7 Balancing Different Needs and Stimuli

#### - Balancing Privacy and Security:

Designing spaces that offer privacy without compromising security is essential in trauma-informed environments. This involves creating areas where children can retreat and feel safe while ensuring that these spaces are not isolating or overly restrictive. Flexible design elements that provide both private and communal spaces can support various needs and preferences, fostering a

balanced environment that promotes well-being (Felitti et al., 1998). Additionally, the design should reflect cultural concepts about proper childhood and the belief in adults' ability to shape childhood development. For instance, the design of schools constructs child-adult interactions in a teaching context, while playgrounds emphasize independence and creativity within a safe, supervised setting. Balancing these elements ensures that children can explore and develop while feeling protected and supported (Rasmussen, 2004).

- Offering Choice and Flexibility:

Providing choices within the built environment can empower children and support their recovery. This includes offering a variety of spaces that serve different purposes at different times, allowing children to choose how they engage with their environment. For example, designing spaces that can be used for both quiet reflection and active play can help cater to different needs and preferences. Ensuring that children have a say in how their environment is designed can promote a sense of agency and control (Menschner & Maul, 2016).

### 2.2.8 Connection to Natural Cycles and Rhythms

- Integrating Natural Elements:

Integrating natural elements into orphanage design can help children connect with the natural world and benefit from its restorative properties. This includes incorporating features such as daylighting, natural ventilation, and green spaces into the design. Connecting children to natural cycles and rhythms can support their emotional regulation and overall well-being (Browning & Ryan, 2020).

- Encouraging Outdoor Activities:

Encouraging outdoor activities is essential in trauma-informed orphanage design, as it provides children with opportunities to engage with nature and experience its healing effects. Outdoor play areas, gardens, and walking paths can be designed to promote physical activity and exploration, which are crucial for both physical and mental health. These spaces should be safe, accessible, and inviting, encouraging children to spend time outdoors.



Figure 2.10 archdaily.com

The integration of natural elements, such as plants, trees, and water features, can create an engaging and therapeutic environment. Seasonal changes in flora and natural light variations throughout the day can offer a dynamic and stimulating experience, helping children develop a connection to the natural world and a sense of stability through its predictable patterns. Large windows that open to outdoor areas can facilitate a seamless transition between indoor and outdoor spaces, enhancing this connection (Kaplan, 1995).

Designing outdoor spaces that cater to various activities can also support social interaction and community-building. Areas for team sports, gardening, and quiet reflection can provide diverse opportunities for children to engage with their peers and caregivers in meaningful ways. These activities can foster a sense of belonging and support the development of social skills, which are critical for trauma recovery.



Figure 2.11 archdaily.com



Incorporating sensory-rich environments, such as sensory gardens with a variety of textures, smells, and sounds, can further enhance the therapeutic benefits of outdoor spaces. These environments can help children regulate their emotions and reduce stress, providing a calming and grounding experience. Overall, encouraging outdoor activities through thoughtful design can significantly contribute to the holistic well-being of children in orphanages, supporting their physical, emotional, and social development (Ulrich, 2008).

### 2.2.9 Designing for Evolution and Time

- Recognizing Impermanence in Design:

Designing with an understanding of impermanence recognizes that buildings, materials, and relationships change over time. Architecture should be flexible and adaptable, capable of responding to the evolving needs of children and the community. Ensuring that spaces can be easily modified or reconfigured to meet changing requirements can enhance the long-term functionality and relevance of the orphanage (Beatley, 2018).

- Supporting Long-Term Relationships:

Creating environments that support long-term relationships is essential in trauma-informed design. Spaces that encourage continuity and provide stability can help children develop trust and form meaningful connections with caregivers and peers. Regular feedback from residents and staff can inform ongoing improvements and ensure that the design continues to meet the needs of its users (Korpela, 1989).

## 2.3 Community Engagement and Stakeholder Involvement

### 2.3.1 Participatory Design Process

Participatory design: is a critical approach that actively involves users, particularly children, in the design process to ensure that the final product genuinely reflects their needs and preferences. This method is especially significant in the context of orphanage design. (Sanoff, 2000) emphasizes that participatory design not only enhances the relevance and functionality of spaces but also fosters a sense of ownership and empowerment among users.

Enhancing Youth Participation: Involving young people in community activities is essential for their social development. Youths often wish to contribute to their communities and believe in their capacity to effect change. However, they

are frequently constrained by adult expectations, which limit their participation opportunities. This isolation deprives them of the chance to develop vital skills such as personal responsibility, tolerance, cooperation, and creativity (Kurth-Schai, 1988).

Methods of Participation:(Sanoff, 2000) outlines several methods to facilitate effective participation, including workshops, surveys, and interactive design sessions. These activities can be adapted to different age groups and abilities, ensuring meaningful contributions from all participants. For instance, during workshops, children can express their ideas through drawings or models, providing valuable insights into their preferences and needs.



Figure 2.12 futurearchitectureplatform.org

Listening as the First Step: An essential initial step in participatory design is listening to the community. For example, the planning team for a project discovered from local school officials that children in the area had underdeveloped gross motor skills due to inadequate playgrounds and open spaces. This insight led to the inclusion of natural areas in the master plan where children could explore, climb, and learn about animal habitats. Engaging over 400 citizens, including diverse interest groups, demonstrated the comprehensive nature of the participatory approach (Sanoff, 2000).

Workshop Example: A planning workshop with parents and teaching staff at the SUNY Stony Brook children's center focused on site development.

Participants used pre-assembled site planning kits and scaled wood blocks to explore alternative facility locations. This hands-on approach enabled participants to consider various design aspects, such as solar orientation and age group clustering, leading to a consensus on the appropriate solution. The workshop also improved communication and relations between the university administration, parents, and teachers (Sanoff, 2000).

**Activity Scenarios:** To encourage deeper engagement, participants can engage in activity scenarios. These exercises help in identifying the most important relationships between different activity centers. Drawings of various and unidentified centers are used to foster discussions about the appropriate characteristics and the image each center should evoke. This method raises participants' awareness of the "silent messages" conveyed by the physical environment (Sanoff, 2000).

**Role-Playing for Conflict Resolution:** Role-playing can be an effective method to prepare for potential conflicts during the design process. By simulating real-life scenarios, participants can explore various perspectives and learn to navigate conflicts. This approach is particularly useful in preparing design teams for community meetings, where unexpected conflicts might arise (Sanoff, 2000).

**Trauma-Informed Design:** Participatory design aligns with trauma-informed care principles, emphasizing the creation of environments that respond to the emotional and psychological needs of children. Harris and Falot (2001) highlight that involving children in the design process ensures that the spaces are both functional and supportive of their well-being, particularly for those who have experienced trauma.

**Building Community and Social Skills:** Collaborative design activities promote communication, teamwork, and mutual respect among children. (Sanoff, 2000) emphasizes that these skills are crucial for social development and help build a supportive community within the orphanage. This participatory approach encourages children to interact, share ideas, and work together, fostering social cohesion.

**Environmental and Perceptual Needs of Youth:** (Hart, 1979) investigates children's exploration and use of spaces, noting that understanding their activities and experiences in physical environments is crucial for effective design. Providing opportunities for youth to act on their conceptions in real-life situations empowers them to make creative contributions.

**International Examples:** In Norway, municipalities developed action plans for children and youth based on national goals, integrating young people into

society and giving them responsibilities. This approach ensures that young people have opportunities to influence their living conditions and contribute to community development (Moore, 1986).

**Consequences of Participation:** While citizen participation in design and planning has become more prevalent, it is not without challenges. Barriers include perceived technical complexity and diverse opinions. However, excluding users from the design process can lead to dissatisfaction and ineffective solutions (Forester, 1989).

**Cohousing Developments:** Participatory design is also evident in cohousing developments, where households live together and share facilities. (Fromm, 1991) notes that communal housing projects in Denmark, France, Germany, Sweden, and the United States have been successful due to resident participation in the development process. These projects foster a sense of community through shared activities and responsibilities, such as communal meals and childcare arrangements.

In conclusion, the participatory design process is a powerful tool for creating environments that are truly responsive to the needs and desires of their users. By actively involving children, designers can gain valuable insights, foster a sense of ownership and empowerment, and create supportive, nurturing spaces that promote the holistic development and well-being of the children. (Sanoff, 2000) emphasizes that the benefits of community participation in design and planning are manifold, making it an essential practice in creating child-centered environments.

### **2.3.2 Children's Participation in Design Process:**

Incorporating children at different stages of the design process is a concept that acknowledges them as stakeholders and experts of their own experiences. As co-designers, it is crucial to recognize their competencies and offer them tools for self-expression that foster both comfort and creativity. Monica Landoni, a specialist in children's education and engagement systems, mentions that although children are often involved during the ideation phase, they are seldom engaged in other phases of the design process. Typically, children are viewed as the end-users of a product or service.

There has been a growing need to establish a new methodology for co-design with children. The objective is to position them on an equal footing with designers and adults, and to address the specific needs that arise directly from these young users. Therefore, it is vital to determine the extent of their

involvement: are children viewed as users, partners, informants, or co-researchers? Treating children as active participants can encourage reflection and give them a significant voice throughout the design process (M. Landoni, E. Rubegni, E. Nicol, and J. Read, 2016)(A. Hansen).

Moreover, the aim is not merely to collaborate on a final product but to develop critical thinking and reflective skills, which help in understanding and empowering their actions. This approach ensures that architectural elements evolve from being mere "empty boxes" to becoming genuine educational spaces from the onset. As Seymour Papert, a prominent figure in learning research, suggested, rather than pushing children to think like adults, we might do better by recognizing their learning capabilities and striving to be more like them.

#### - Learning Methods in Co-Design Processes

One of the major challenges in defining a co-design process is the choice of learning methods. While discussing architectural concepts with children might be complex, it is possible to engage them with all necessary elements to develop a strong architectural idea. Issues such as understanding different climatic challenges, social contexts, or local materials are not easy to address with young children. Therefore, it is crucial to plan an appropriate method to convey this information effectively.

Recognizing that nothing is absolute and that the effects of planning can sometimes be inadequate to meet a child's learning ability or interest, the most effective approach to advancing complex issues is learning through play (The LEGO Foundation in support of UNICEF, 2018). Play is a fundamental way for young children to acquire essential knowledge and skills. Educational programs should strive to create environments that stimulate exploration, curiosity, and hands-on learning. It is essential to acknowledge children's actions and achievements within the context of their abilities.

#### - Adapting Learning Approaches

Cognitive development is especially sensitive between the ages of one and eight years. During this period, children absorb vast amounts of information from diverse thematic spheres. Ensuring that the information provided is correct is critical, as it will shape their thinking in adulthood. Educators and practitioners must understand the varied abilities and needs of children to develop a creative and educational path that enables self-expression( J. Shonkoff, D. Phillips, 2000).

When working with children in the early design phases, it is essential to help them turn moments of struggle into opportunities for creation and investigation. Avoiding time constraints can promote comprehensive and creative activities free from external pressure. Iterative and repeatable exercises can help refine ideas multiple times, leading to a well-developed concept. Engaging children in various exciting and stimulating activities encourages creativity. Current methods include using stories, poems, arts, crafts, physical games, workshops, and collaborative tasks with parents or older children (The Lego Foundation, 2017) (D. Kleine, G. Pearson, S. Holloway, 2016).

The flexibility of playful learning activities is noteworthy. Educational activities can occur in various settings, such as streets, classrooms, parks, or villages. The learning methods are not fixed and can be adapted to different contexts, provided the goals are clearly defined. A blend of traditional and playful approaches opens new possibilities for intervention and underscores the need for a structured yet adaptable system.

As a result, planning a co-design process involving children requires understanding the cultural background and adaptability to different contexts. Practical and concrete ideas should be introduced and modified based on different skills and learning methods. This structured, flexible system is essential for a successful co-design process with children (C. Drifte, 2013).

#### - Children's Participation in Case of Traumatic Conditions

When addressing the participatory design process with children who have experienced traumatic conditions, the aim is to create spaces that fulfill their educational and developmental needs, despite the challenging contexts. This involves engaging them in fundamental design phases to ensure that the environment is not only suitable but also nurturing. The design activity is particularly focused on areas marked by humanitarian crises. In these settings, children often face marginalization, living without proper education and learning from the hardships imposed by their circumstances (S. Nicolai & C. Triplehorn, 2003).

Design teams must be prepared to handle complex psychological issues, as these environments can profoundly influence individuals' mental states. Establishing a constructive dialogue with both children and adults is essential to build trust and ensure positive interactions. Often, trauma is unrecognized or dismissed within communities, making it crucial to understand the broader social and environmental issues while addressing the psychological needs of the children involved (C. Herbert & F. Didonna, 2016).

#### - Approach to Psychological Well-being in Design

The design process must ensure freedom of access and participation for all children. Imposing constraints at the outset can result in negative perceptions and experiences. Acknowledging the variety of events that can cause trauma—from wars and conflicts to natural disasters and abuse—is essential. While it is impossible to create a one-size-fits-all guideline for addressing trauma due to its subjective nature, understanding the specific needs of the affected individuals is critical (B. Young et al, 2002).

Establishing a sense of physical and psychological security is the first step towards recovery. This can be achieved by creating stable, potentially imaginary, scenarios that help children feel balanced and serene. Imaginary environments can be useful in both adult and child rehabilitation, provided they do not include real people or scenarios closely linked to the child's life, preventing potential disruptions (J. Binder, 2013.) (E. Giusti, C. Montanari, 2000).

#### - Ethical Considerations in Traumatic Contexts

Ethical considerations are paramount in any educational or participatory activity involving children. It is essential to thoroughly understand the population, resources, and potential conflicts. Failure to consider ethical dimensions can severely harm the community. Key aspects to focus on include participation, conflict resolution, and transparency. Ensuring that activities are in the best interest of the children and do not introduce new problems is crucial (P. White, 1994) ( J. Boyden, J. Ennew, 1997)( J. Wilkinson, 2000).

Children, like adults, do not form a homogenous group; their experiences and needs are shaped by their material, historical, and sociocultural circumstances, including factors such as gender, age, disability, ethnicity, and more. Recognizing this diversity is essential in developing effective and empathetic design processes (Faruqi, F., 1997)

In summary, engaging children in the design process within traumatic contexts requires a nuanced approach that considers their psychological well-being, ethical principles, and the complex realities of their environments. By doing so, we can create spaces that genuinely support their growth and learning, helping them overcome the challenges they face.

### **2.3.3 Practical Application of Participatory Design in Al Thana Institution, Syria**

To apply the principles of participatory design, I conducted a workshop at the Al Thana institution in Syria, which provides courses for both orphans and non- orphan children. The primary objective of this workshop was to engage the children in the design proposal for an orphanage in Syria, understanding their perspectives about their preferred building shape and the specific needs they would like to be included in their residence.

We began the workshop with an initial drawing session to capture the children's unfiltered imaginations and natural ways of thinking. This first session provided insights into their immediate needs and desires without any external influences. Following this, we discussed architectural concepts and showcased various examples to expand their imaginations and help them visualize different possibilities. This approach aimed to enhance their understanding and awareness of architectural principles, making them more expressive and imaginative.

During the discussions, I encouraged the children to express their thoughts and ideas freely. One child mentioned that "four walls are enough to feel happy," highlighting a minimalist view of what constitutes a home. This statement provided valuable insight into the basic need for security and shelter. I used this opportunity to explain that architecture goes beyond the concept of mere walls. We discussed how these four walls could be designed innovatively to create interesting and safe spaces that cater to their needs and imaginations.

Another child's drawing depicted a high wall separating a playground from the street outside. This visual representation indicated a perceived risk from the external environment, emphasizing the child's need for safety within their living space. This drawing underscored the importance of designing environments that not only foster creativity and play but also ensure security and protection from external threats.

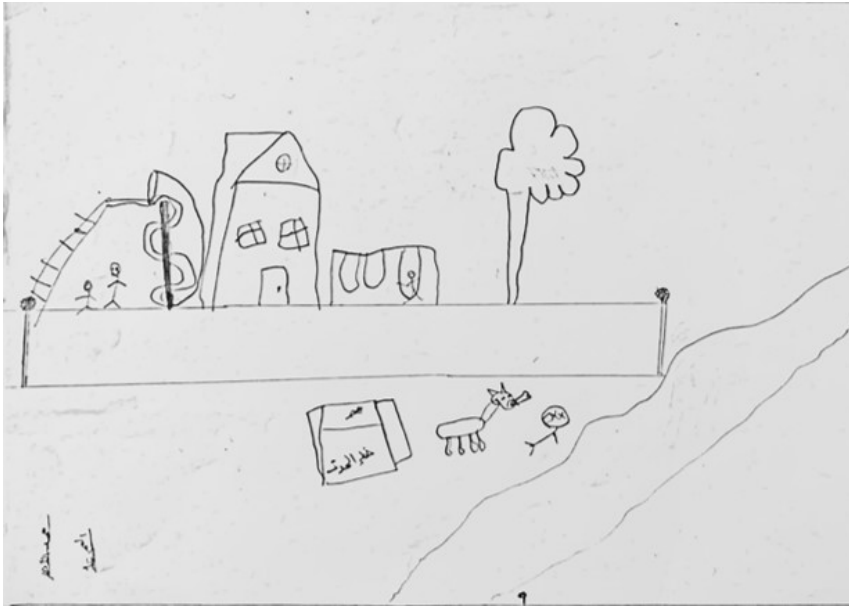


Figure 2.13 Al Thana Institution, Syria, workshop

The collaborative process of discussing, drawing, and reimagining spaces together provided me with valuable insights and inspiration for the design proposal. The children's active involvement ensured that the resulting design was truly aligned with their needs and desires.

The workshop at Al Thana institution demonstrated the practical application of participatory design in a real-world setting. Engaging children in the design process, educating them about architectural possibilities, and incorporating their feedback into design decisions can lead to more effective and responsive environments. This approach not only fosters a sense of ownership and empowerment among the children but also ensures that the spaces created are truly reflective of their needs and desires.

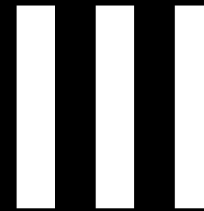
Following these discussions, the children participated in a second drawing session. This time, their drawings reflected a more informed and expansive view of what their ideal building shapes and interiors could look like. Comparing the two sets of drawings revealed a significant shift in their understanding and imagination. Initially, their ideas were straightforward and simplistic, but post-discussion, their concepts became more nuanced and sophisticated.

Analyzing these drawings and discussions, it was evident that participatory design in this context involved a mutual exchange of knowledge and ideas. The children learned more about the possibilities of architecture, expanding their thinking, and I, in turn, gained valuable insights from their drawings and their way of thinking. This reciprocal process highlighted the importance of education and participation in enhancing both the designer's and the users' perspectives.

Throughout the workshop, we influenced each other. The children became more aware of architectural possibilities and expressed their ideas more freely, while I was deeply inspired by their creativity and unique perspectives. This exchange allowed me to refine my design approach, ensuring it was truly responsive to the children's needs and aspirations.

**How have these types of buildings worked from the beginning until now?**

CHAPTER



### 3. Historical Context and Evolution of Orphanage Design

#### 3.1 Origins and Evolution

##### 3.1.1 Origins of Orphanages

The concept of orphanages dates back to ancient times, with one of the earliest known examples being the orphanage established by the Abbey of Saint Gall in 787 AD, Switzerland. These institutions were created to provide shelter, education, and care for children who had lost their parents. Early orphanages were often characterized by austere, institutional settings, reflecting societal attitudes of viewing orphans as objects of pity rather than individuals with unique needs. Orphanages in this era were typically run by religious organizations and often lacked the resources to provide more than basic care (Doppelt, n.d.).

Over time, the approach to orphanage care began to evolve, influenced by changing social attitudes and educational philosophies. The Victorian era saw the establishment of more formalized institutions, such as the ones initiated by Dr. Thomas Barnardo in the late 19th century, which focused not only on providing shelter but also on education and vocational training. These early efforts laid the foundation for modern orphanage care, emphasizing the need for nurturing environments that could foster the overall development of children (Doppelt, n.d.).

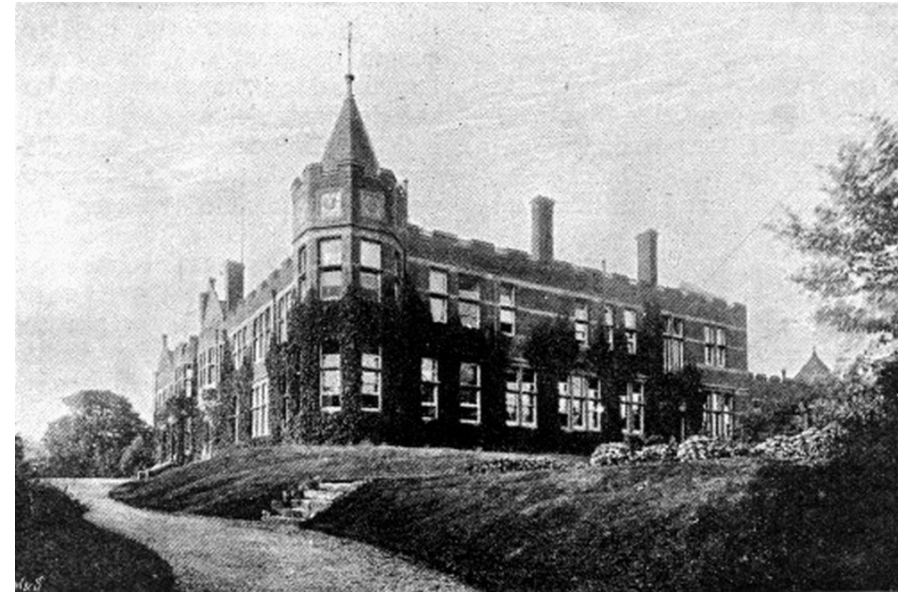


Figure 3.1 Barnardo Orphanage, Victorian - illustratedpast.com

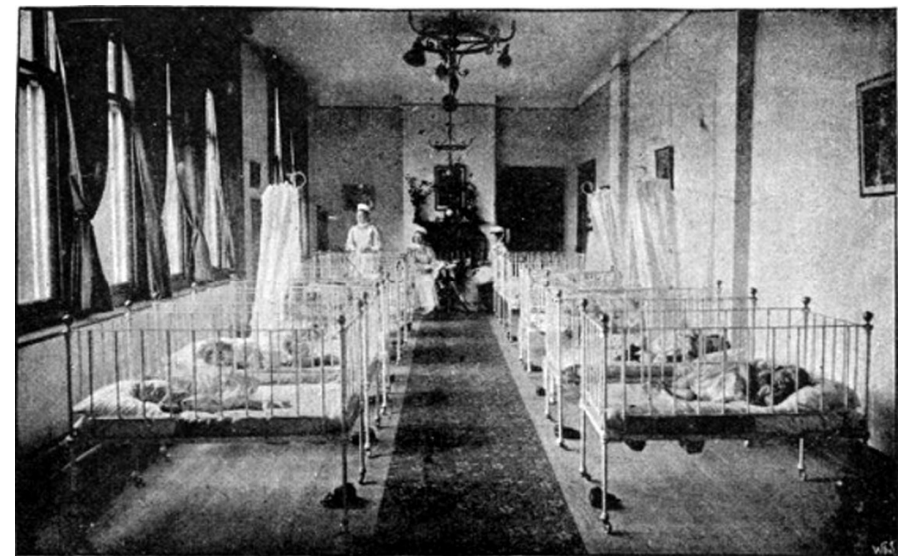


Figure 3.2 Barnardo Orphanage, Communal sleeping area - illustratedpast.com

### 3.1.2 Evolution of Orphanage Design

As society progressed, the design and management of orphanages continued to change. The 20th century marked significant advancements in the care provided to orphans. After World War II, there was an increased awareness of the psychological and emotional needs of children. This period saw the introduction of more child-centered approaches, with an emphasis on creating environments that could help children recover from trauma and develop healthily. Innovations in architecture began to reflect these new understandings, moving away from large, impersonal institutions to smaller, family-like settings (Floornature.com, n.d.).

By the late 20th and early 21st centuries, the design of orphanages had evolved to incorporate modern theories of child development and psychology. Contemporary orphanage designs often include features such as private sleeping areas, communal living spaces, and access to outdoor areas. These elements are intended to provide a sense of stability and normalcy, helping children feel more secure and less institutionalized. Additionally, there is a greater emphasis on integrating orphanages into the community, allowing children to maintain social connections and access external resources (Floornature.com, n.d.; ARQA, 2020).

Overall, the evolution of orphanage design reflects broader changes in societal attitudes towards children and their needs. From the early days of institutional care to the modern focus on creating nurturing, supportive environments, the architecture of orphanages has played a crucial role in shaping the experiences of the children who live in them.

### 3.1.3 Modern Architectural Approaches

- Emotional and Psychological Considerations:

In recent years, architects have significantly altered the design and function of orphanages, focusing on the emotional and psychological well-being of children. Contemporary designs aim to reduce feelings of loneliness and fear, creating spaces that foster a sense of community and belonging. Key design elements include communal living areas, open floor plans, and access to green spaces to promote social interaction and emotional healing. These modern spaces are designed to be nurturing and home-like, marking a departure from traditional institutional models ("Urko Sanchez: SOS Children's Village in Djibouti," n.d.; ARQA, 2020).

Understanding that children shape their environment and, in turn, are shaped by it (Striniste & Moore, 1989), is crucial in creating spaces that support their holistic development. Children's experiences of place and architecture are influenced by their physical movements, cognitive engagement, and social interactions within a space. These interactions involve complex sensory and motor activities, where perception and mobility are interdependent processes (Gibson, 1979; Kytta, 2003). By incorporating sensory-stimulating elements into the design, architects can create environments that nurture children's cognitive and emotional development.

Architects like Urko Sanchez have pioneered designs that prioritize the comfort and happiness of children. For example, the SOS Children's Village in Djibouti by Sanchez uses traditional, community-oriented layouts that create a sense of security and familiarity. This village integrates local architectural styles and materials to create a sustainable and culturally relevant environment for orphans ("Urko Sanchez: SOS Children's Village in Djibouti," n.d.). The integration of local architectural elements not only ensures sustainability but also fosters a deeper connection between the children and their cultural heritage, which is crucial for their identity development and emotional stability.



Figure 3.3 SOS Children Village Courtyard\_@Urbannext.net





Figure 3.4 SOS Children Village, Children in Courtyard\_@www.floornature.com

By integrating these design principles into orphanages, not only is the emotional and psychological well-being of children enhanced, but their overall development and growth are supported. Creating environments that are nurturing, stimulating, and culturally relevant helps foster a sense of security, belonging, and resilience in children who have experienced trauma.

- Educational and Recreational Facilities:

Today's architects also emphasize the importance of incorporating educational and recreational facilities within orphanage designs. These features are crucial for the holistic development of children, providing opportunities for learning, play, and personal growth. By integrating spaces that support educational activities, hobbies, and physical exercise, modern orphanages aim to create a balanced environment where children can thrive. This approach not only meets the immediate needs of orphans but also equips them with skills and experiences essential for adulthood (Anon, 2018; "Habitat for Orphan Girls, in Khvansar, Iran by ZAV ARCHITECTS," 2018).

The Habitat for Orphan Girls in Khvansar, Iran, designed by ZAV Architects, is a prime example of such an approach. The design includes covered balconies and communal spaces that encourage social interaction and provide safe, comfortable areas for study and recreation. These design elements ensure that the children have access to both private and communal areas, fostering a balanced and supportive environment ("Habitat for Orphan Girls, in Khvansar, Iran by ZAV ARCHITECTS," 2018).

Spaces that stimulate cognitive, affective, and evaluative experiences help children develop thinking skills, emotional capacities, and values (Kellert, 2002). Design strategies should include features that encourage active engagement and social interaction, fostering place attachment and identity. By creating environments that are both functional and stimulating, architects can ensure that orphanages provide not only for the basic needs of children but also for their emotional and psychological well-being. Integrating natural elements such as gardens and outdoor play areas can significantly enhance children's sensory experiences and cognitive growth, providing opportunities for exploration, discovery, and creativity.



Figure 3.5 SOS Children Village, "Medina" Floor Plan\_@www.floornature.com



Figure 3.6 Coverable Balconies\_@www.middleeastarchitect.com



Figure 3.7 Courtyard underneath Curved Overhang\_@arqa.com

## 3.2 Typologies of Orphanage Design and Their Evolution

### 3.2.1 Evolution of Typologies

**Deinstitutionalization Trends:** The extensive process of deinstitutionalization, which began in the West in the 1950s, has significantly changed orphanage design typologies. While solid block-like structures with a conservative approach remain prevalent, there has been a noticeable shift towards more innovative and flexible designs. Architects now prefer dynamic, asymmetric solutions that evoke emotional responses and create uniqueness. These designs consider human scale, avoid overwhelming monotonous rhythmicity, and reflect a close connection between deinstitutionalization methods and architectural techniques. The evolution of orphanage design typologies highlights a growing recognition of the importance of creating environments that support the holistic development and well-being of children. Modern designs increasingly emphasize personalization, community integration, and the emotional and psychological needs of children (Babych, 2023).

**Impact of Climate and Culture:** The climatic characteristics of southern areas, where concerns about heat loss are less significant, have influenced the

adoption of dispersed planning in developing countries. These designs align with local traditions and provide cost-effective solutions for alternative care facilities. Projects in these regions often incorporate sustainable practices and materials, reflecting a symbiosis with the environment and cultural context. This approach not only addresses the practical needs of shelter but also promotes a sense of cultural identity and continuity for the children.

**Integration of Technology and Innovation:** The integration of technology and innovative design principles has further transformed orphanage typologies. Projects now often include features such as renewable energy sources, smart building systems, and flexible spaces that can adapt to changing needs. These advancements enhance the functionality and sustainability of orphanage designs, providing better support for children's development. The use of technology and innovation in design helps to create environments that are not only functional but also stimulating and supportive, promoting the overall well-being and development of children.

### 3.2.2 Solid Type

**Institutional Characteristics:** The solid type of orphanage design is entrenched in traditional premises that emphasize system functionality over the individual needs and interests of children. These structures typically consist of a single, geometrically simple main building serving multiple purposes. Historically, this approach aimed to streamline operations and reduce costs, leading to a more austere and impersonal environment. Despite undergoing various stylistic and functional updates to align with neo-modernist aesthetics, these designs remain largely unsuitable for modern orphan care needs. The solid type is often found in older facilities and embodies a more conservative approach to architectural planning for orphanages, prioritizing order and efficiency over personalization and emotional well-being. This design approach often overlooks the importance of creating a nurturing and supportive environment for children, which is crucial for their development and well-being (Barber et al., 2004; Rosenfeld et al., 1997).

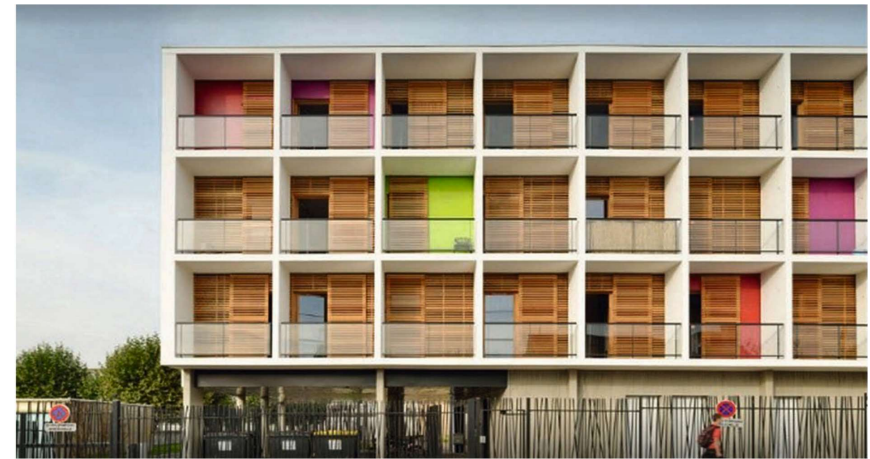


Figure 3.8 Internat in Montceau Les Mines (by arch. X'TO Architectes)

### 3.2.3 Branched Type

**Divided Structures:** The branched type signifies a substantial departure from the traditional institutional approach, aiming to create a more intimate and personalized environment for children by breaking down large institutional spaces into smaller, more manageable units. Despite being separated into functional and spatial components, these structures frequently maintain their overall volume. Since this kind of design is more in line with current ideas of child care and development, it is more frequently used in orphanage projects nowadays. The branched planning-spatial scheme is the most prevalent among examined projects, with sixty-nine out of one hundred and ten design solutions falling into this category. These buildings usually have a central hub that supports both group and private activities and acts as a focal point for the entire community. This approach not only fosters a sense of community but also allows for greater flexibility in accommodating the diverse needs of children (Babych, 2023).

**Modular Subtype:** The modular subtype exemplifies the repetition of standardized clusters that can be partially modified to meet specific needs. A notable example is the children's village project in Aqaba, Jordan, designed by Jafar Tukan & Partners (1991), which received the Aga Khan Award. This project uses repetitive modular units to create a family-oriented environment, with each module accommodating a small group of children. The design ensures a home-like atmosphere conducive to personal development while

also allowing for flexibility and adaptability to various needs. Modular structures often include shared spaces for administration and services, seamlessly blending with the overall character while differing primarily in size and volume. This subtype supports the principle of deinstitutionalization by creating smaller, family-like units within a larger community, thereby enhancing the children's sense of belonging and security (The AKDN, 1991).



Figure 3.9 SOS Children's Village, Aqaba, Jordan (by arch. Jafar Tukan & Partners). Archnet

Ensemble Subtype: The ensemble subtype is characterized by a greater unity of volume and the use of compositional accents to create a cohesive architectural narrative. This subtype maintains the unity of style and large-scale planning while allowing for some separation of buildings. An example is the orphanage in Los Angeles, designed by the architectural bureau Gensler in 2019. This design employs a unifying element such as a roof to maintain coherence across separated buildings, creating a visually harmonious and functional environment. The ensemble subtype supports the integration of communal and private spaces, fostering a balanced and supportive atmosphere for children. This design approach emphasizes the importance of

creating environments that are both functional and aesthetically pleasing, thereby promoting the well-being and development of children (Day, 2020).

Experimental Subtype: The experimental subtype includes innovative approaches to structural organization, often leveraging geometric or physical attributes to create dynamic compositions. An example is the orphanage facility constructed in New Jerusalem, South Africa, which uses container structures strategically arranged to form an extensive and flexible layout. This project, completed in 2000, offers a diverse program that emphasizes the adaptability of spaces to address the developmental challenges faced by children raised outside traditional family conditions. Projects like "Seeds of Life" in the Nile Delta, Egypt, designed by architect Najla Al-Sheikh in 2016, showcase expressive morphology and dynamic compositions with large cantilevers and contrasting colors to evoke emotional responses and support developmental needs. The experimental subtype highlights the potential of innovative design solutions to create stimulating and supportive environments for children, promoting their overall development (Holloway, 2013; Al-Sheikh, 2016).



Figure 3.10 Orphanage in New Jerusalem (by arch. 4D and A Architects).  
Inhabitat

Simplified Subtype: Predominantly employed in developing countries, the simplified subtype includes temporary structures designed to respond to emergencies such as natural disasters, military conflicts, and epidemics. These

buildings are often cost-effective and quick to construct, providing immediate shelter and basic amenities. While not high in environmental and foster indicators, simplified structures serve a critical role in addressing urgent needs and providing a safe haven for children in crisis situations. This subtype underscores the importance of flexibility and rapid response in the design of orphanages, ensuring that children have access to safe and supportive environments during times of crisis (Babych, 2023).

- Case Studies:

Kertminde Boarding Facility in Denmark: Designed by CEBRA studio in 2014, the Kertemind Boarding Facility in Denmark is a pioneering 24-hour care center for marginalized children and teenagers. Using a variety of compositional strategies, including scale and rotation, this creative capability provides an appropriate visual and functional foundation for modern fostering methods. The design is poly-metaphorical, enabling visual adaptation to different behavioral role models, thus creating a stimulating and supportive environment for children, promoting their overall development (CEBRA, 2014).

The tile and wood-clad building blends familiar elements and shapes to establish a homely environment within a modern setting, focusing on the residents' special needs. The Children's house of the Future is a facility that combines the secure setting of a conventional house with innovative educational concepts and thoughts about what a contemporary children's home should be and what requirements it must meet. The vision for the institution is to foster social relations and a sense of community, while also addressing individual needs, creating a place the children are proud to call home and preparing them for their future (CEBRA, 2014).

The architectural design supports a practice-oriented pedagogic approach, actively aiding the staff's daily work with children who face behavioural, social, and mental health challenges. Utilizing the recognizable shapes of the classic Danish home, like the pitched-roof house and dormer motif, the facility integrates seamlessly into the surrounding residential area. These elements form the project's architectural DNA, symbolizing inclusion, diversity, and safety. By growing into and out of the building volume, the dormer profiles give the interior space variation and functional flexibility, enabling occupants to customize these areas for a range of uses, from study nooks to gathering rooms (CEBRA, 2014).

The facility consists of four interconnected houses, with each age group having its own house connected to a central unit, aiming to provide a sense of belonging. The smaller children's units face the garden, offering direct access to the playground, while the teenagers' unit, oriented towards the street, encourages older residents to engage in social activities within the community. Typical institutional functions, such as administration and staff rooms, are located in less intrusive areas like the basement and first floor, minimizing their presence in the residents' daily life. This rational organization ensures proximity and short distances between units, allowing staff to be close to all residents, thus facilitating effective care and a homely atmosphere (CEBRA, 2014).



Figure 3.11 Children's Home / CEBRA" 25 Nov 2014. ArchDaily



Figure 3.12 Children's Home / CEBRA" 25 Nov 2014. ArchDaily



Figure 3.13 Children's Home / CEBRA" 25 Nov 2014. ArchDaily

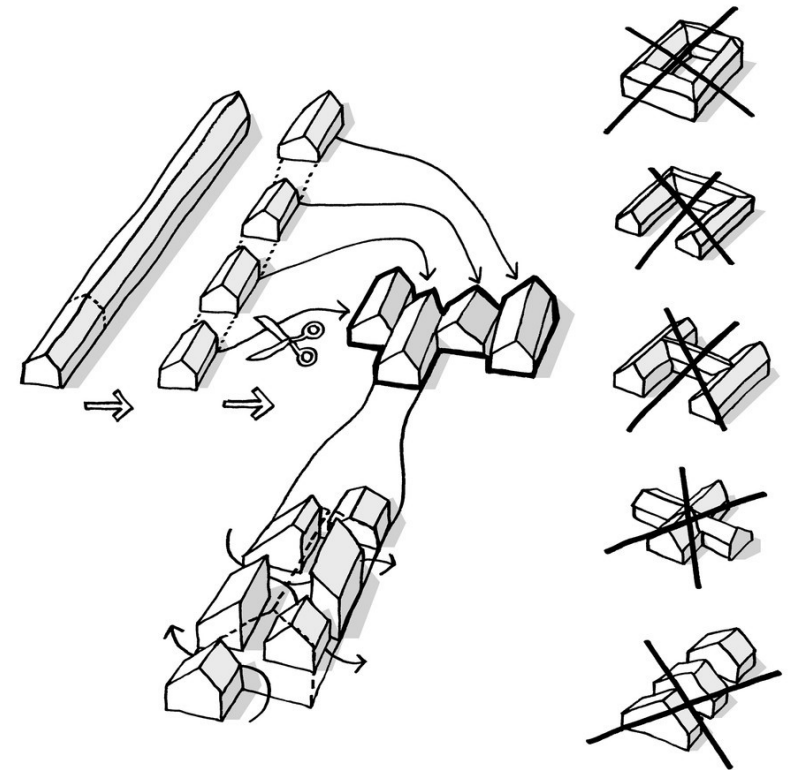


Figure 3.14 Children's Home / CEBRA" 25 Nov 2014. ArchDaily

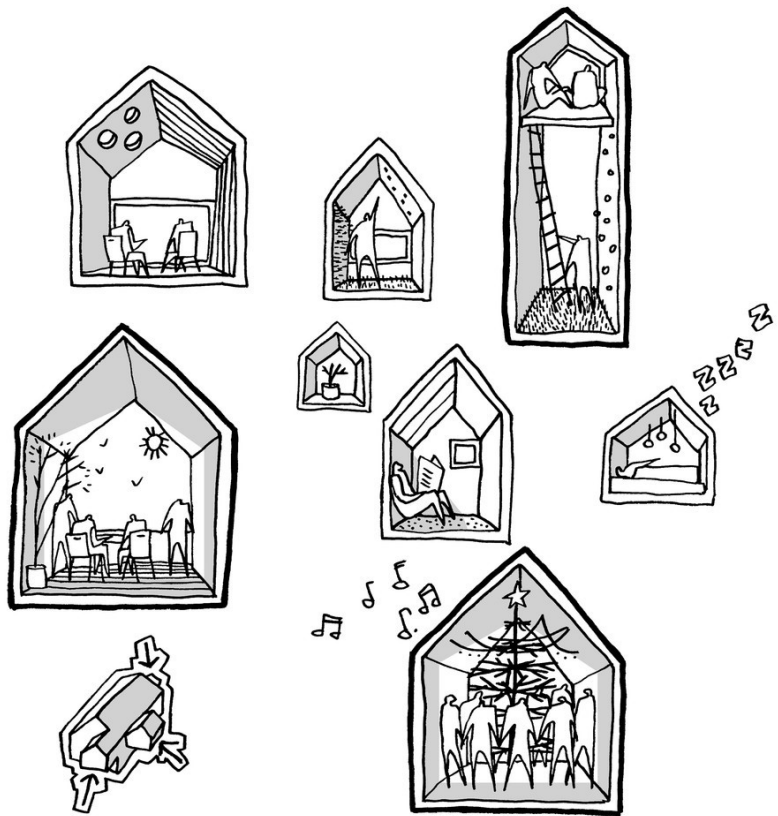


Figure 3.15 Children's Home / CEBRA" 25 Nov 2014. ArchDaily

Amsterdam Orphanage / Aldo van Eyck: In 1960, Dutch architect Aldo van Eyck completed the Amsterdam Orphanage, a pioneering project designed to create a harmonious balance between a home and a small city on the outskirts of Amsterdam. As a prominent member of the Congrès internationaux d'architecture moderne (CIAM) and a founding member of Team 10, van Eyck sought to incorporate his humanist theories into the design, addressing the lack of a human element in early post-war architecture. The Amsterdam Orphanage represented van Eyck's first large-scale built project, allowing him to put his innovative ideas into practice (Aldo van Eyck, 1960).

Van Eyck envisioned the orphanage as a decentralized urban node with numerous interaction points, thus fostering a sense of community and non-hierarchical space. His design aimed to break down the traditional hierarchy of spaces, creating many "in-between conditions" that encourage interaction and social connection. The building's modular design features residential and community spaces, constructed using two module sizes to accommodate different functions. Each module consists of four round columns at the corners, supporting a domed roof of pre-cast concrete, with floors also made of concrete. The building's facades are either glass walls or solid walls made with dark brown bricks, creating a visually cohesive yet functional structure (Aldo van Eyck, 1960).

Within the orphanage, program units are laid out on an orthogonal grid, with each unit projecting off two diagonal paths. This design ensures that each unit has multiple exterior facades and its own adjacent outdoor space, promoting a sense of openness and connectivity. Children of all ages can use the common amenities included in Van Eyck's design, which include sleeping spaces, a kitchen, a washing facility, a gymnasium, a library, and administrative areas. The entrance and administrative spaces are strategically connected to the street, the large courtyard, and the residential units, ensuring fluid connections and avoiding a central point within the orphanage (Aldo van Eyck, 1960).

Van Eyck's concept of a "small urban study" is evident in the arrangement of spaces, where each individual unit is neighbored by its own outdoor area, and a larger courtyard is offset diagonally from the residential spaces. This configuration allows for fluid connections between all spaces, reinforcing the sense of community and interaction. Van Eyck's approach to the design reflects his belief that a house should be like a small city, and a city like a large house, emphasizing the importance of creating balanced and inclusive environments (Aldo van Eyck, 1960).

The Amsterdam Orphanage stands as a testament to van Eyck's vision of a balanced community, earning him international recognition and establishing his humanist theories in a built project. His innovative design continues to inspire architects and urban planners, demonstrating the potential of architecture to create meaningful and supportive environments (Aldo van Eyck, 1960).

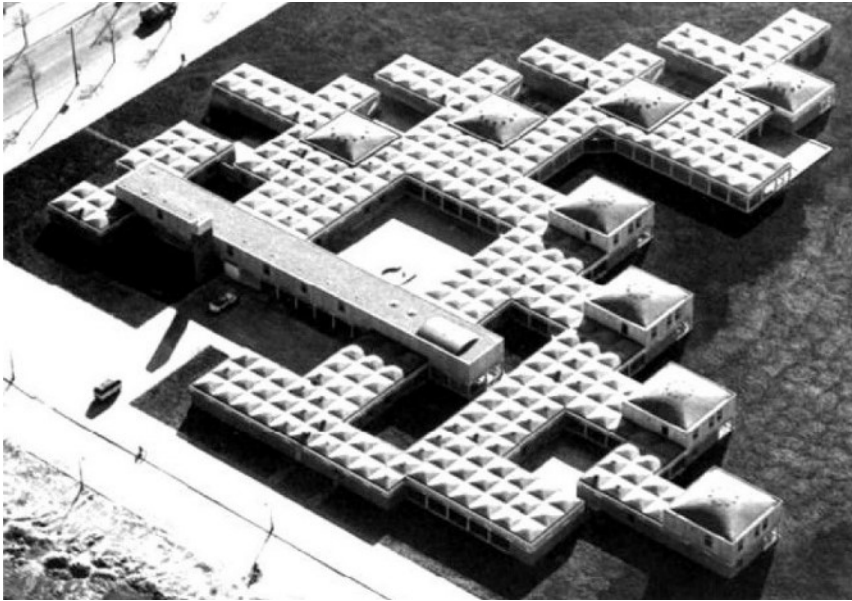


Figure 3.16 Amsterdam Orphanage (by Aldo van Eyck)



Figure 3.18 Amsterdam Orphanage (by Aldo van Eyck)

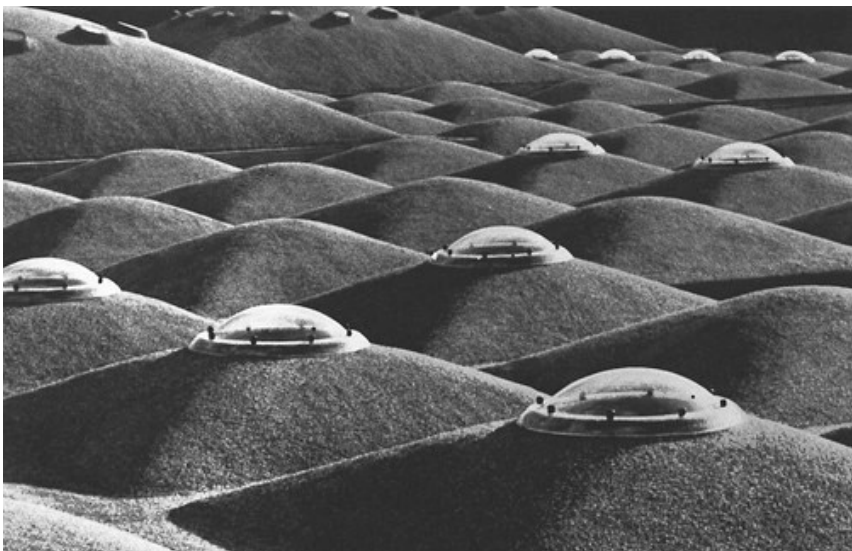


Figure 3.17 Amsterdam Orphanage (by Aldo van Eyck)



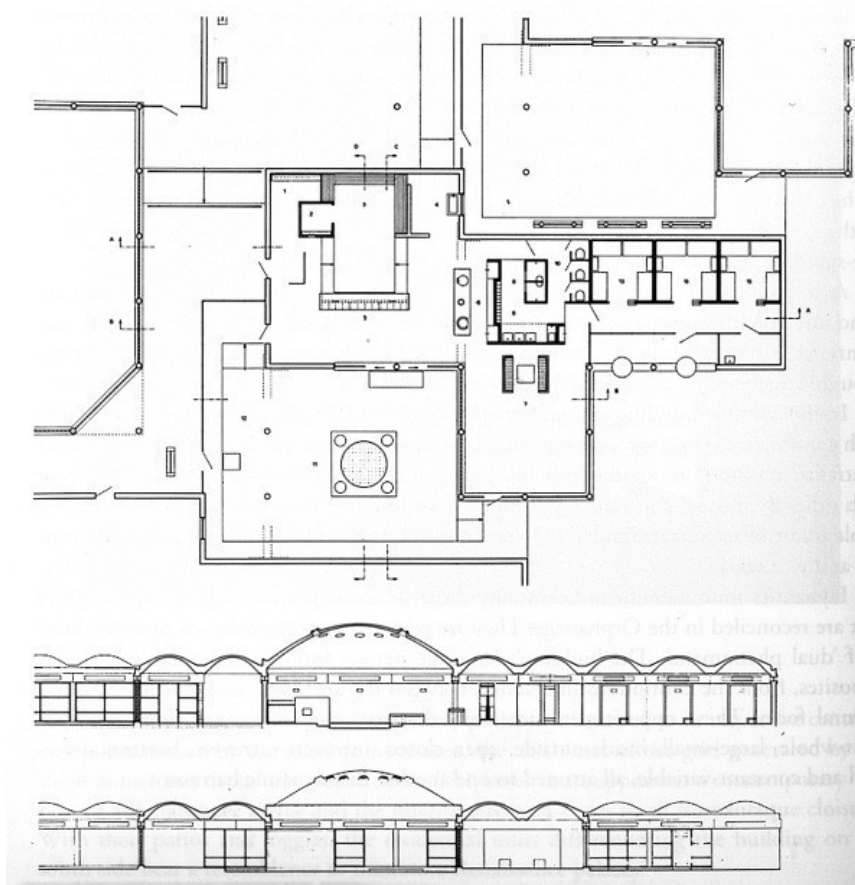


Figure 3.19 Amsterdam Orphanage (by Aldo van Eyck)

"Seeds of Life" in the Nile Delta, Egypt: Designed by architect Najla Al-Sheikh, this project emphasizes flexibility, self-sufficiency, and expressive morphology to support the developmental needs of children. The design integrates elements that evoke emotional responses and promote a sense of security and well-being. This project demonstrates the potential of innovative design solutions to create environments that are both functional and supportive, promoting the well-being and development of children (Al-Sheikh, 2016).



Figure 3.20 Seeds of Life in the Nile Delta (by arch. Naila Al-Sheikh)

### 3.2.4 Dispersed Type

**Scattered Structures:** The dispersed type features separate buildings spread throughout a site, aiming to enhance individualization and minimize institutional characteristics. This type of planning is commonly utilized for cost-effective and budget-friendly shelters in developing countries, aligning with both climatic conditions and local traditions. Notable examples include the proposed design of a shelter in Oliphantsfontein, South Africa, by architect Sans Frontier, and a children's "eco-shelter" in Soya, Kenya, by architects Suzy Syme and Andrew Costa. These projects create familial environments that avoid isolation and loneliness by fostering social interaction among multiple residential units. The dispersed type allows for a variety of spatial planning approaches, supporting a range of activities and promoting a sense of community. This design approach aligns with the principles of deinstitutionalization by creating environments that are more homelike and less institutional (Babych, 2023).

- Case studies:

**Shelter in Oliphantsfontein, South Africa:** Designed by architect Sans Frontier, this project exemplifies the dispersed type by scattering small residential units across a site to create a sense of community and individualization. The design promotes social interaction and provides a home-like environment for children. This approach helps to create a nurturing and supportive environment that fosters the children's social and emotional development.

Children's Eco-Shelter in Soya, Kenya: Architects Suzy Syme and Andrew Costa designed this eco-shelter, which integrates sustainable materials and local architectural styles. The project aims to provide a nurturing environment that supports both individual and communal activities. The use of local materials and traditional building techniques helps to create a sense of familiarity and cultural continuity for the children, promoting their sense of identity and belonging.



Figure 3.21 Niall Patrick Walsh. "An Eco-Village for Orphaned Kenyan Children - Competition Winners Announced " 11 Feb 2017. ArchDaily



Figure 3. 23 Niall Patrick Walsh. "An Eco-Village for Orphaned Kenyan Children - Competition Winners Announced " 11 Feb 2017. ArchDaily



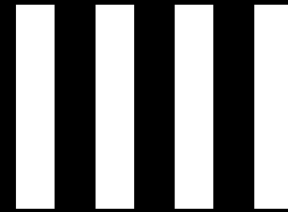
Figure 3. 22 Niall Patrick Walsh. "An Eco-Village for Orphaned Kenyan Children - Competition Winners Announced " 11 Feb 2017. ArchDaily



Figure 3.24 Niall Patrick Walsh. "An Eco-Village for Orphaned Kenyan Children - Competition Winners Announced " 11 Feb 2017. ArchDaily

How should I approach the design?

CHAPTER



## 4. The Design Project

### 4.1 Proposal Outline and Functional Elements

- My Proposal:

- residential unit for orphans
- a community art gallery or exhibition space. This space could showcase local artwork, host art classes and workshops, and provide a venue for community events such as art fairs or cultural performances.
- a sustainable farming. This space could be used for organic farming, growing fruits, and vegetables, as well as hosting educational workshops and community events focused on sustainable agriculture.

- Integrating an Art Gallery with an Orphanage for Holistic Development:

Combining a community art gallery or exhibition space with an orphanage creates a unique environment that benefits both the children and the community. Art plays a crucial role in healing and personal growth, especially for children who have experienced trauma. Through art, children can express their emotions in ways that words might not allow, helping them process and cope with their experiences (American Professional Guide, n.d.). This therapeutic aspect of art can significantly contribute to the emotional and psychological well-being of orphaned children (Mind Family, n.d.).

The integration of art into an orphanage's daily life also supports the development of essential skills. Art fosters creativity, critical thinking, and problem-solving abilities. It encourages children to explore their imagination and develop their artistic talents (Warner, 2022). Moreover, exposure to various forms of art can broaden their cultural understanding and appreciation, enriching their overall development.

Creating a community art gallery within the orphanage serves multiple purposes. It acts as a bridge between the orphanage and the local community, fostering a sense of connection and belonging. Through art classes, workshops, and exhibitions, children can interact with local artists and community members, building relationships and gaining valuable social skills. This interaction is crucial for their social integration and can help mitigate the feelings of isolation that many orphaned children experience (artQart, 2024).

The gallery space can also function as a venue for community events, such as art fairs and cultural performances, which can bring together people from various backgrounds. These events provide opportunities for the children to showcase their work, receive recognition, and gain confidence in their abilities. The sense of accomplishment and validation they receive from these experiences can be incredibly motivating and empowering (Padilla, n.d.).

From an economic perspective, the community art gallery can serve as a source of revenue for the orphanage. Renting out the gallery space for events can generate income that can be reinvested into the orphanage's programs and facilities. Additionally, workshops and art classes that include both the public and the children can foster collaboration and mutual learning. Artists can mentor the children, collaborate on projects, and even create art pieces together. These collaborative artworks can be sold, further contributing to the orphanage's financial stability.

Such initiatives not only provide financial support but also instill a sense of purpose and achievement in the children. Being involved in the creation and sale of art can boost their self-esteem and give them a sense of ownership and pride in their work. Moreover, it can inspire them to pursue careers in the arts, providing them with a potential pathway for their future.

In summary, integrating a community art gallery with an orphanage can significantly enhance the emotional, social, and economic well-being of the children. It offers a creative and therapeutic outlet for expression, fosters community engagement, and provides financial support. By nurturing their artistic talents and fostering connections with the community, this approach can contribute to the holistic development and empowerment of orphaned children.



Figure 4.1 [www.artbarblog.com](http://www.artbarblog.com)

-Integrating Sustainable Urban Farming with Orphanage Care for Holistic Development:

The concept of combining an orphanage with a sustainable urban farm offers myriad benefits, enhancing both child development and community engagement. This integrated approach not only provides orphaned children with a nurturing environment but also fosters their physical, emotional, and social well-being through direct interaction with nature (Aussie Childcare Network, 2022).

- Connecting with Nature and Learning to Care:

Firstly, engaging in organic farming allows children to connect with nature, a crucial element in their holistic growth. Planting, nurturing, and harvesting fruits, vegetables, and herbs provide children with tangible experiences in caring and responsibility. These activities are especially beneficial for orphans, as they cultivate a sense of purpose and belonging. The act of caring for plants can have therapeutic effects, particularly for children with emotional challenges (Aussie Childcare Network, 2022). Nurturing a plant from seed to harvest can help them build self-esteem and resilience, offering a natural form of therapy.

- Educational and Future Opportunities:

Moreover, the educational workshops and community events centered around sustainable agriculture and environmental conservation present valuable learning opportunities. These programs equip children with knowledge and skills in sustainable practices, potentially opening doors for future careers in agriculture or environmental science (Urban Farming Tips, 2024). By learning about sustainable farming methods, children not only gain practical skills but also develop a deeper understanding of ecological balance and the importance of environmental stewardship.

- Social Skill Development and Community Integration:

In addition to individual benefits, the integration of a sustainable urban farm within an orphanage promotes social skill development. The interaction with adults from the community during workshops and events fosters social connections and collaborative skills (Urban Farming Tips, 2024). These interactions are instrumental in helping children develop a sense of community and improve their social competence. Engaging with diverse groups of people allows children to build relationships, practice communication skills, and develop empathy, which are essential for their overall social development (Urban Farming Tips, 2024).

- Economic and Environmental Sustainability:

Economically, the sustainable urban farm contributes to the self-sufficiency of the orphanage by reducing food expenses. Growing their own fruits and vegetables not only ensures a steady supply of nutritious food but also alleviates financial pressures on the institution (Farms For Orphans, 2024). This self-sufficiency model demonstrates a practical application of sustainability, emphasizing the importance of resourcefulness and economic prudence.

Furthermore, the involvement in greenery maintenance reduces landscaping costs and enhances the environmental sustainability of the facility. This model of integrated care and sustainable living exemplifies a progressive approach to orphanage management, benefiting children and the broader community.

- Conclusion:

In conclusion, integrating a sustainable urban farm with an orphanage provides a multifaceted approach to child care, education, and community involvement. This innovative model not only addresses the immediate needs of orphans but also prepares them for future opportunities, fostering a sense of responsibility, community engagement, and economic self-reliance (NextGen Purpose, 2024). The combination of nature-based activities, educational programs, and community interactions creates a nurturing and sustainable environment conducive to the holistic development of children.



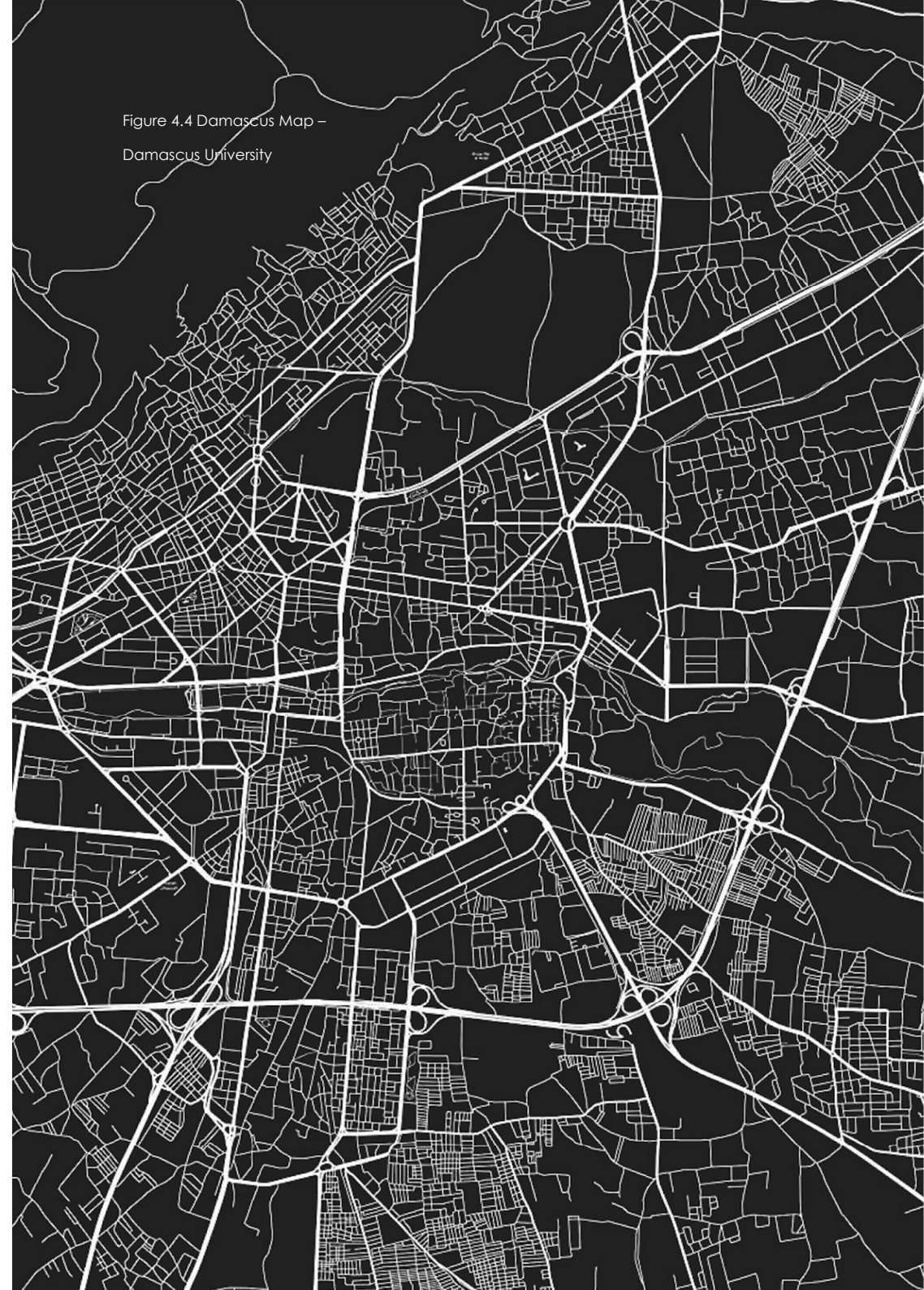
Figure 4.2 Natasha teaching Finn and little Max how to plant their seedlings! Photo - Brooke Holm. thedesignfiles.net

## 4.2 City-Context



Figure 4.3 newsinfo.ru

Figure 4.4 Damascus Map –  
Damascus University



### -Damascus City Appearance and Architectural Features:

Damascus, known as Dimashq in Arabic, is renowned as the oldest capital globally and holds the status of the fourth holiest city in Islam. This city, also referred to as Al-Sham, serves as a significant cultural hub within the Levant and the Arab world (Birke, 2020).

As one of the oldest continuously inhabited cities, Damascus has a history that dates back to the third millennium BCE. It was the capital of the Umayyad Caliphate from 661 to 750. Although its prominence waned during the Abbasid era, it later experienced a resurgence during the Ayyubid and Mamluk periods (Bowker, 2003).

Located 680 meters (2,230 feet) above sea level, Damascus is situated 80 kilometers inland from the Mediterranean. The city benefits from the natural protection of the Anti-Lebanon mountains and the water resources of the Barada River. It lies at the intersection of two historic trade routes: the north-south route linking Egypt with Asia Minor, and the east-west route connecting Lebanon with the Euphrates river valley. The Barada River, sustained by melting snow from the mountain streams, irrigates the Ghouta region surrounding Damascus, which has been a fertile agricultural area for growing vegetables, cereals, and fruits for centuries. The modern expanse of Damascus covers 105 km<sup>2</sup> (41 sq mi), with 77 km<sup>2</sup> (30 sq mi) being urban and the rest consisting of Jabal Qasioun. As of 2022, the city's population was estimated to be 2,503,000 (DMA-UPD Discussion Paper, 2009).

### Outstanding Universal Value

Damascus, which was founded in the third millennium BCE, served as a cultural and commercial hub, connecting Africa and Asia. Excavations at Tell Ramad indicate that Damascus was inhabited between 8,000 and 10,000 BCE, with the Aramaeans establishing it as a major metropolis.

During the Medieval period, Damascus was renowned for its craft industries, with different neighborhoods dedicated to various trades.

The city's heritage is enriched by Hellenistic, Roman, Byzantine, and Islamic influences. When Damascus became the capital of the Umayyad Caliphate, it laid the foundation for its continuous existence as a vibrant Muslim, Arab city, with each successive dynasty leaving its mark. Despite the dominance of Islam, Roman and Byzantine characteristics are still evident in the city's layout, which follows a Roman grid pattern with streets aligned north-south and east-west.

The earliest physical remnants of the city include the Temple of Jupiter, city gates, and significant portions of the Roman city walls. The Great Mosque, constructed atop a Roman temple and a Christian basilica, stands as the sole surviving monument from the Umayyad Caliphate's capital. Other than the city walls, Citadel, and a few mosques and tombs, most of the city's architectural heritage dates back to after the Ottoman conquest in the early 16th century



Figure 4.5 Map: Hogenberg, Frans, approximately 1539-1590 - (UNESCO, 2009)

### Modern and Historical Architecture

In the final three decades of the twentieth century, numerous buildings were constructed in Damascus, drawing inspiration from local traditional architectural concepts and decorations. Notable examples include the embassies of the United Arab Emirates and Qatar, the Umayyad Palace of Conferences, the Sheraton Hotel, the Assad House for Culture and Arts, and the new Palace of Justice.

With the emergence of numerous buildings featuring innovative contemporary designs, architectural development in Damascus took two distinct paths. One path upheld the traditions of mosque and church architecture, while the other embraced new concepts in building plans and decorative methods, as seen in the Al-Assad Library and the Syrian Real Estate Bank (Al-Kasem, 2011).



1. Sheraton Hotel and Resorts



Figure 4.6 Sheraton Hotel and Resorts by Pavol Floch - wikidata.org

2. Embassy of the United Arab Emirates



Figure 4.7 The embassy of the Arab Emirates, By SANA - arabnews.com

3. Syrian Real Estate Bank – Designed by Ahmad Abu Hadid, this is one of the most iconic buildings in Damascus, utilizing Muqarnas in its massing and composition



Figure 4.8 Syrian Real Estate Bank, Photographer: unknown - reb.sy

4. Al-Assad National Library – Designed by a Polish architect and resulting from an international competition



Figure 4.9 Al-Assad National Library - alkawthartv.ir

5. Hejaz Railway Station – A former main railway station in central Damascus, near Marjeh Square. The passenger building, designed by Spanish architect Fernando De Aranda, was commissioned in 1913. It later became a historical monument, with a Swiss-made locomotive exhibited in front of it



Figure 4.10 Hejaz Railway Station, By (BBC Arabic, 2006) - almashhadonline.com

6. The Umayyad Mosque – Also known as the Great Mosque of Damascus, it is one of the largest and oldest mosques in the world



Figure 4.11 The Umayyad Mosque photographer: Bernard Gagnon - en.wikipedia.org

7. The Temple of Jupiter – Constructed by the Romans, initiated during the reign of Augustus and completed during the reign of Constantius II



Figure 4.12 The Temple of Jupiter, photographer: Ai@ce, (Finegan, 1981) - flickr.com

## Location and Context

The plot is situated near Al Maysat Square, a well-served area known for its accessibility and diverse urban functions. Surrounded by residential neighborhoods, the location benefits from its proximity to schools and entertainment hubs, creating a lively and well-connected environment. The area is well-served by public transportation, offering easy access to various parts of the city.



Figure 4.13 The Project Area - ar.wikipedia.org

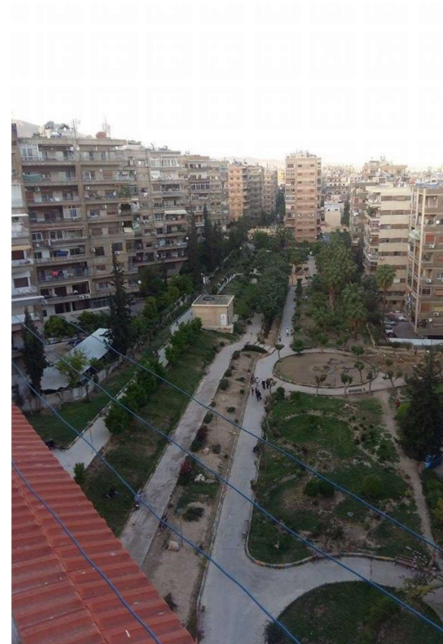


Figure 4.14 Residential Surroundings - wikimapia.org



Figure 4.15 Al Maysat Square - earth.google.com

### 4.3 Site Analysis

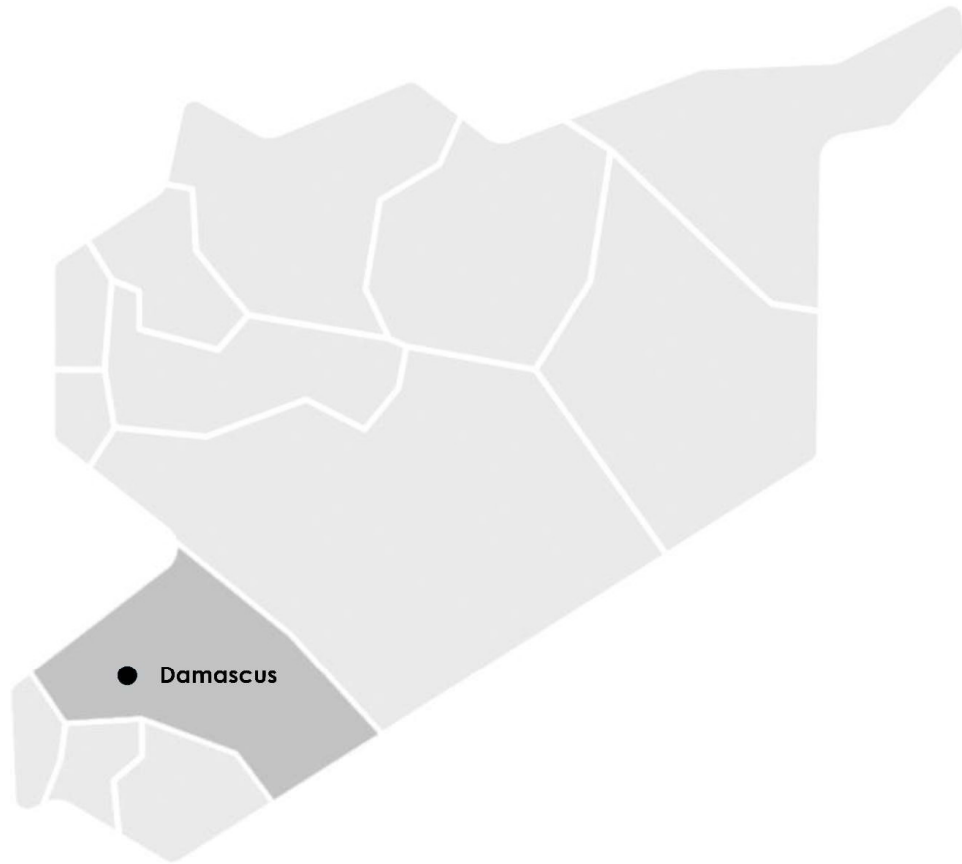


Figure 4.16 Syria Map (author)

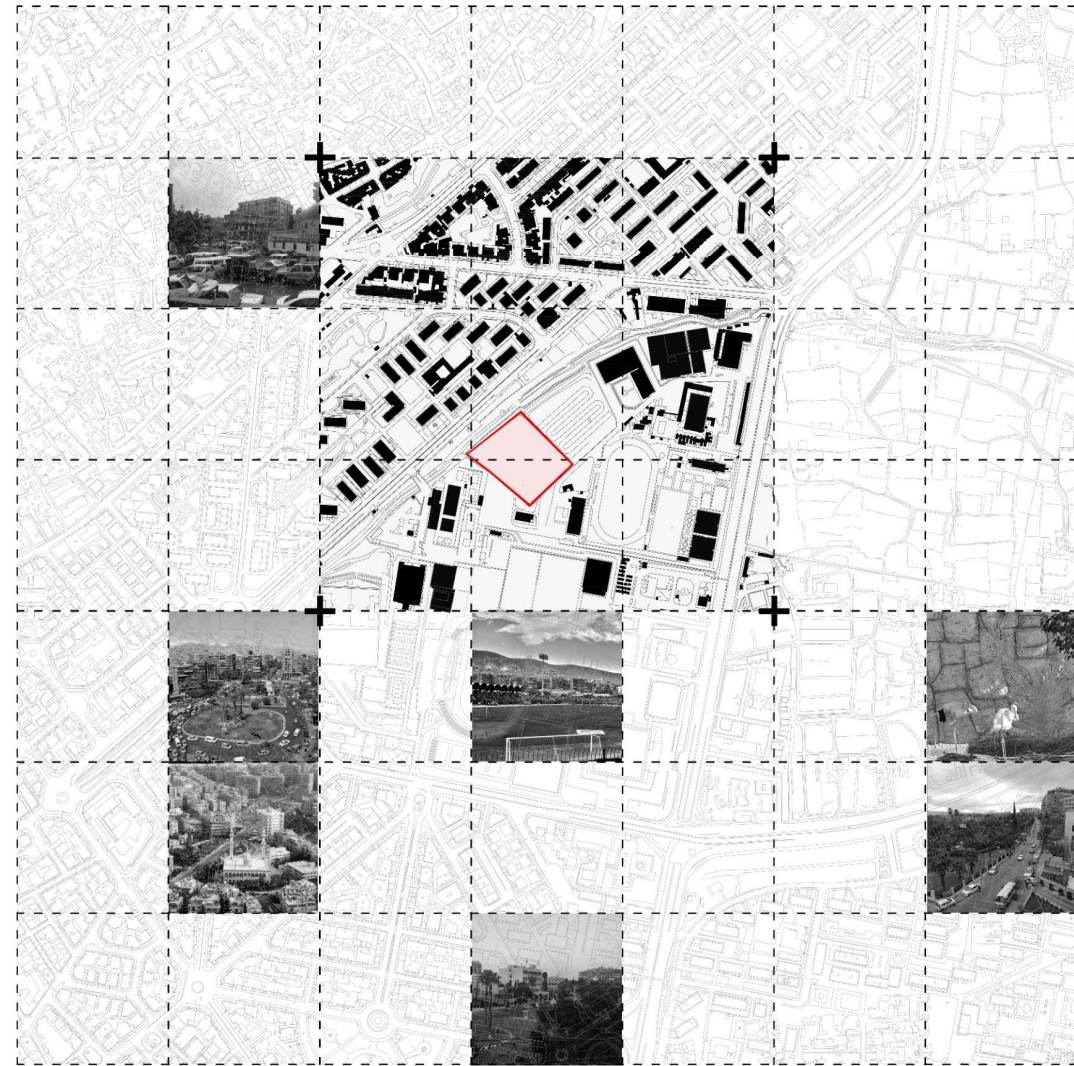


Figure 4.17 Location Map (author)

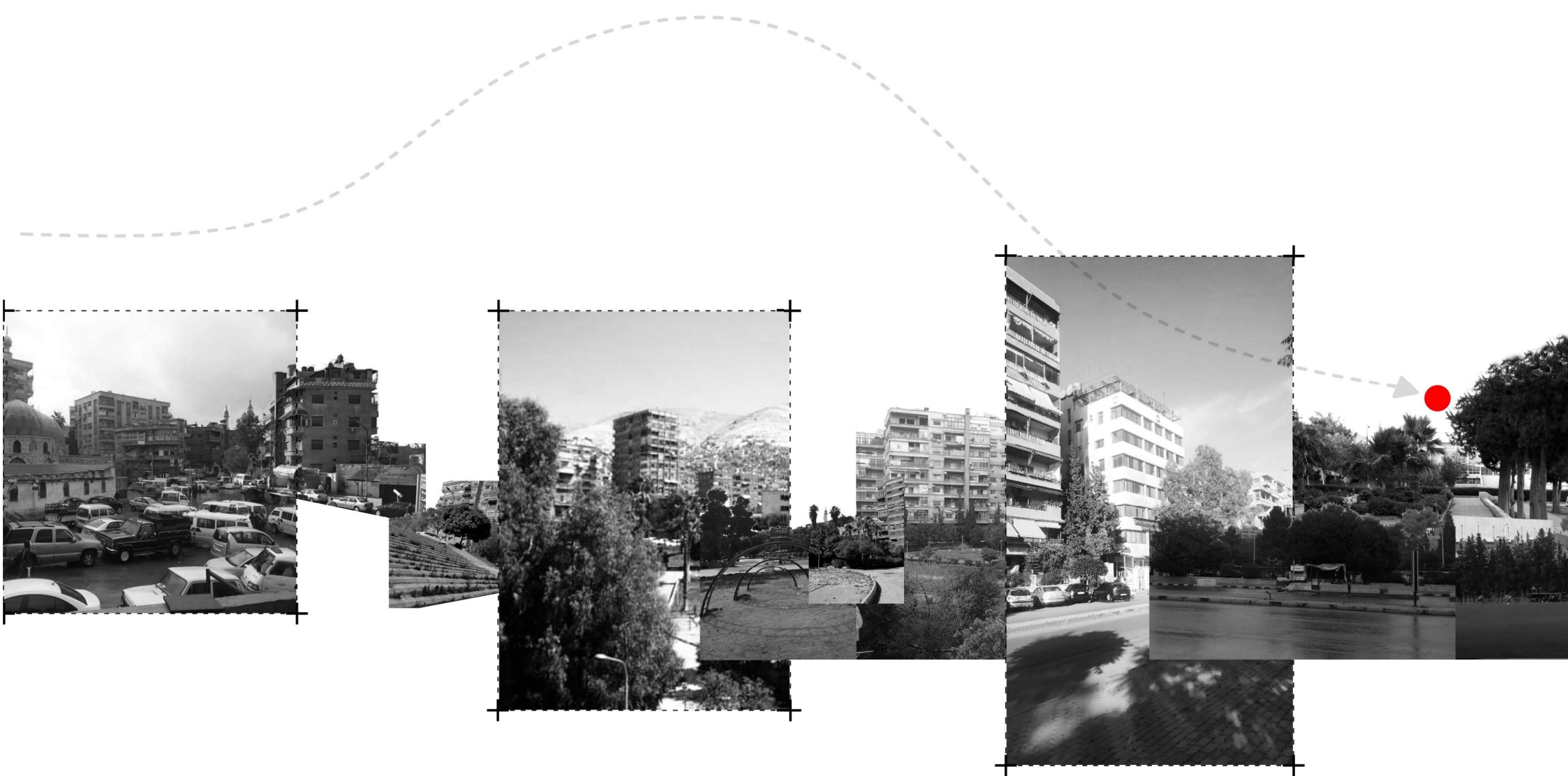


Figure 4.18 Location Analysis (author)

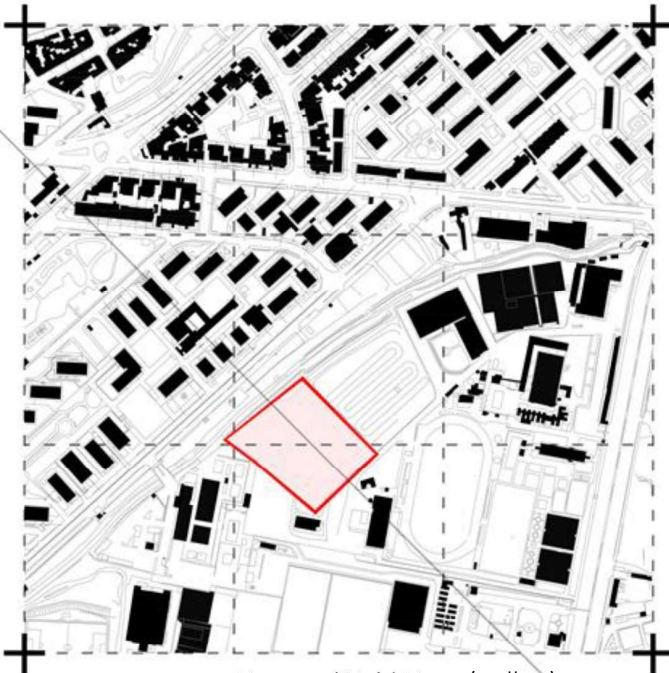


Figure 4.19 Mass and Void Map (author)



Figure 4.21 River Map (author)



Figure 4.23 Roads Map (author)

● Side Street ● Secondary Road ● Main Road

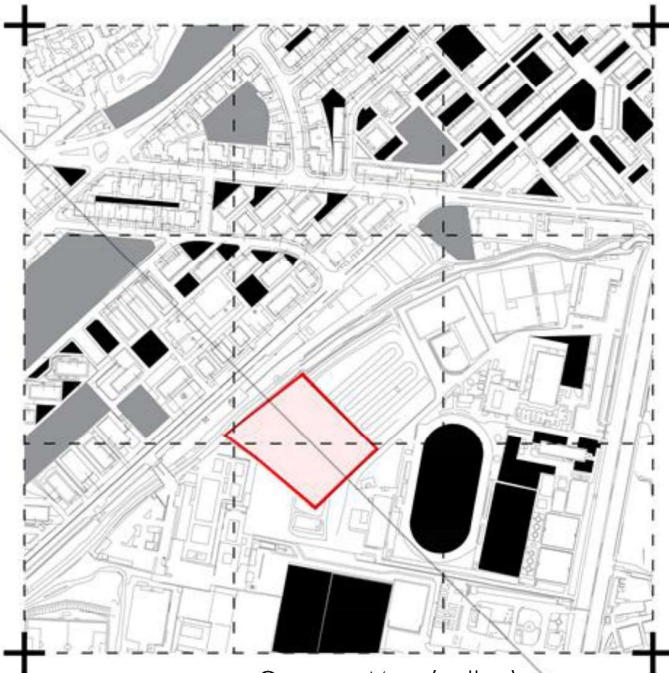


Figure 4.20 Greenery Map (author)

● Semi Public ● Public

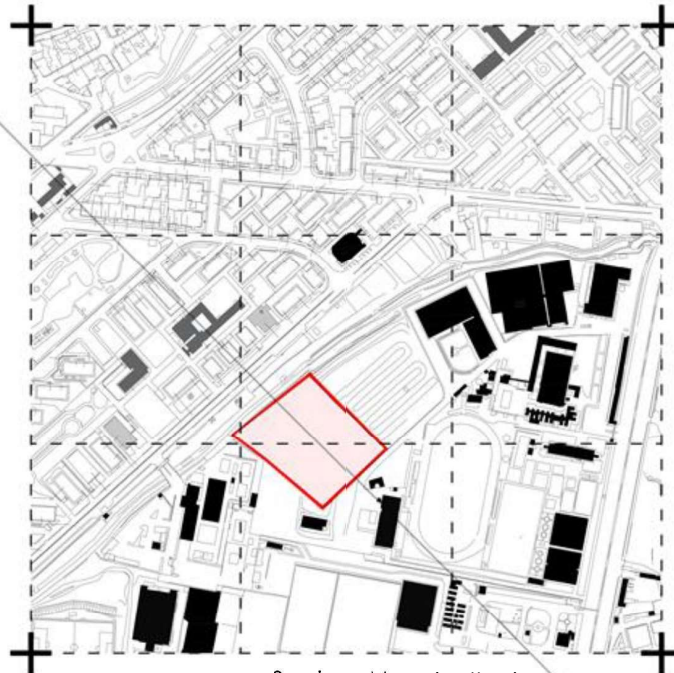


Figure 4.22 Services Map (author)

● Entertainment ● Educational ● Medical

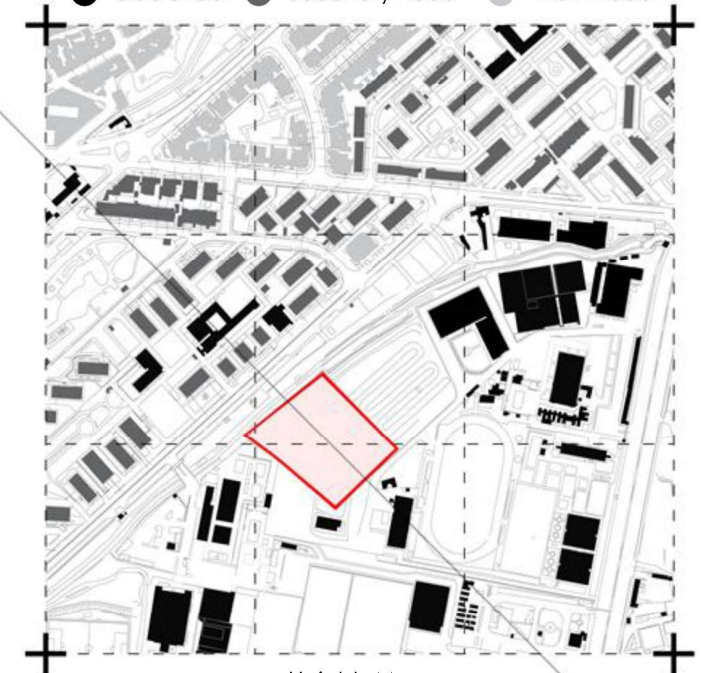
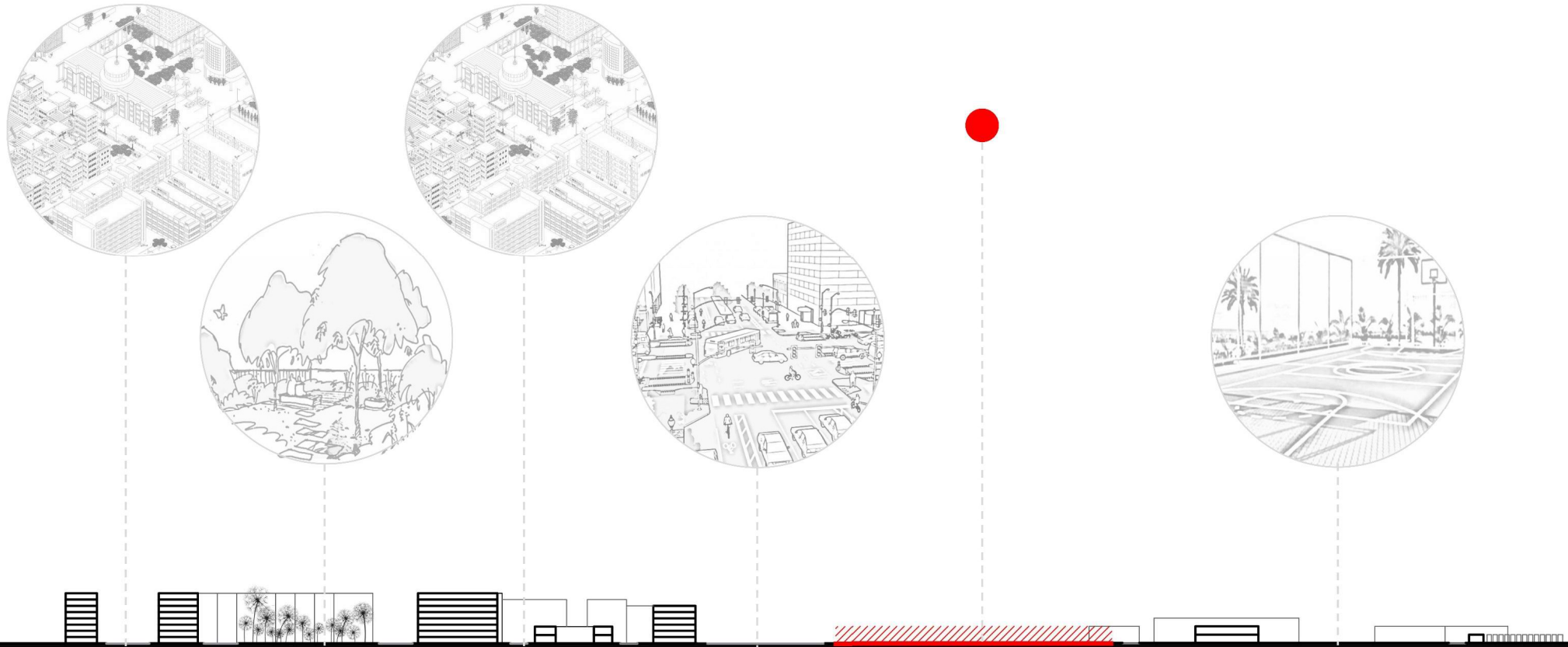


Figure 4.24 Heights Map (author)

● 1-3 Levels ● 6-8 Levels ● 4-5 Levels



**Section**

Figure 4.25 Section (author)

- **Area** : 14033 m<sup>2</sup>
- The plot has access from a main street where the entrance will take a place.
- The height of the design proposal should be between 1 to 3 levels according to the heights map.
- In Damascus, the wind direction is typically from the southwest.

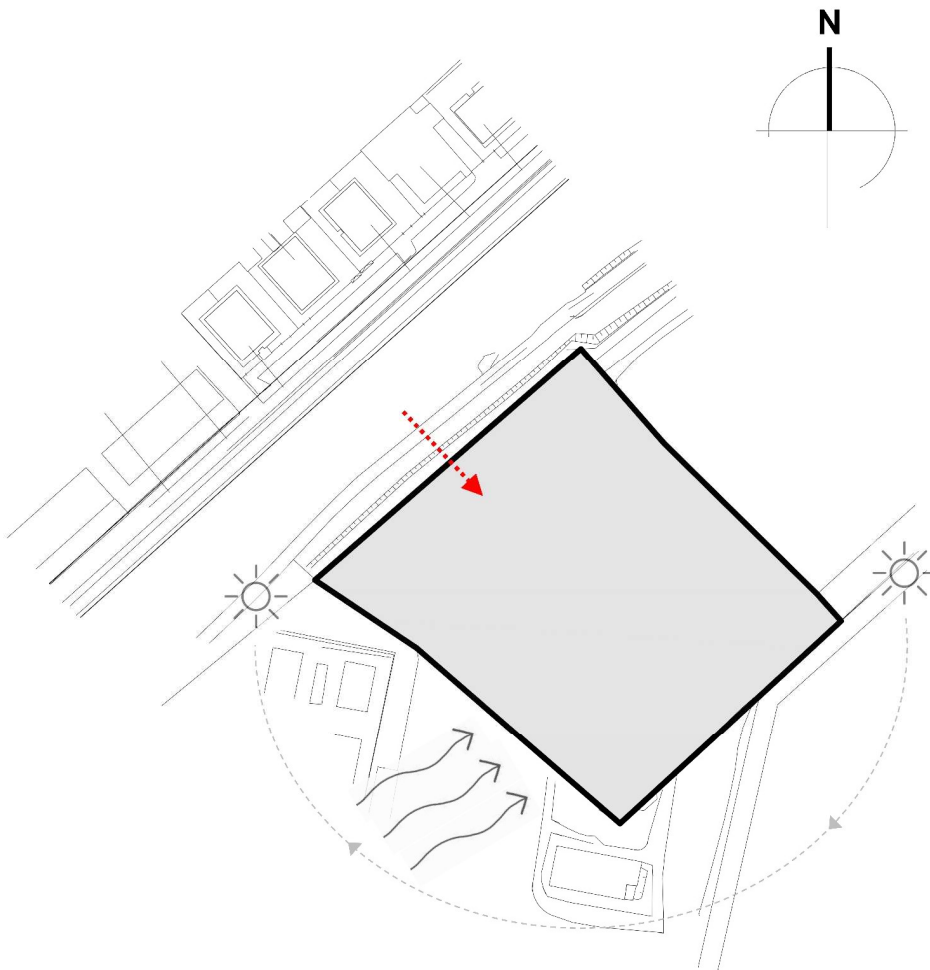


Figure 4.26 plot analysis (author)

## Functional program

- **Total Building Area:** 6600 sqm
- **Outdoor common space:** 1000 sqm
- **Three Residential units:** 4950 sqm, **each unit** : 1650 sqm
  - The first unit from 8 to 11 year

48 Residents (each room for 4 children)

Shared bathrooms

Interaction space

Cleaning service

Sport room

Library and Study space

Multi use room

- The second unit from 12 to 15 years

52 Residents (each room for 4 children)

Shared bathrooms

Interaction space

Cleaning service

Sport room

Library and Study Space

Multi use room

- The third unit from 16 to 18 years

52 Residents (each room for 2 children)

Private bathrooms

Interaction space

Cleaning service

Sport room

Library and Study Space



Multi use room

- **Entrance and Reception** 200 sqm
- **Canteen:** 350 sqm
- **Exhibition and Workshop Area:** 450 sqm
- **Farming and Workshop Area:** 200 sqm
- **Multi Use Space:** 250 sqm

#### 4.4 Conceptualization and Analysis

Children Drawings Categories Through the workshop

Surrounding Environment and Landscape

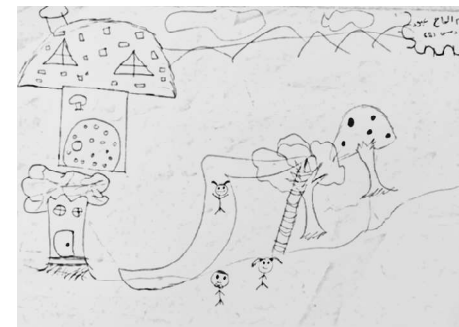
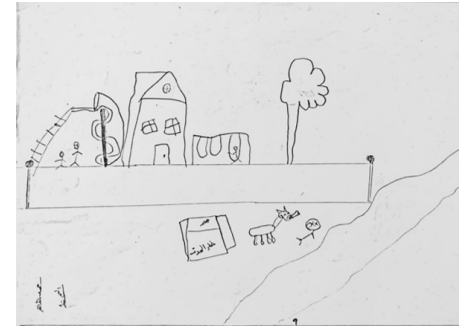
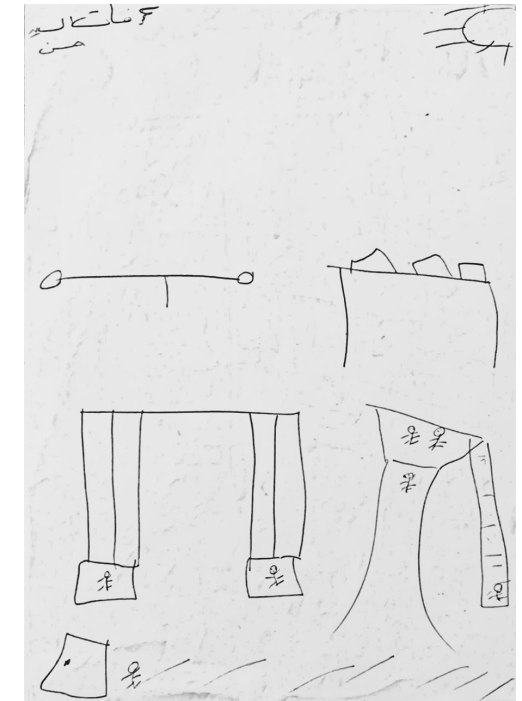


Figure 4.27 Children workshop (author)

Figure 4.28 Children workshop (author)

Figure 4.29 Children workshop (author)



Unusual shapes

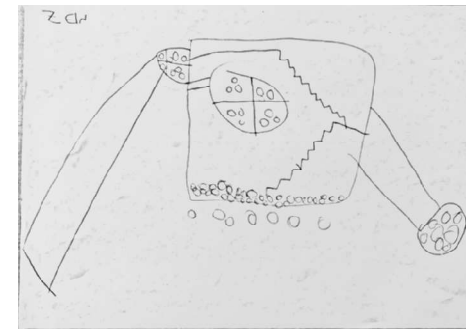
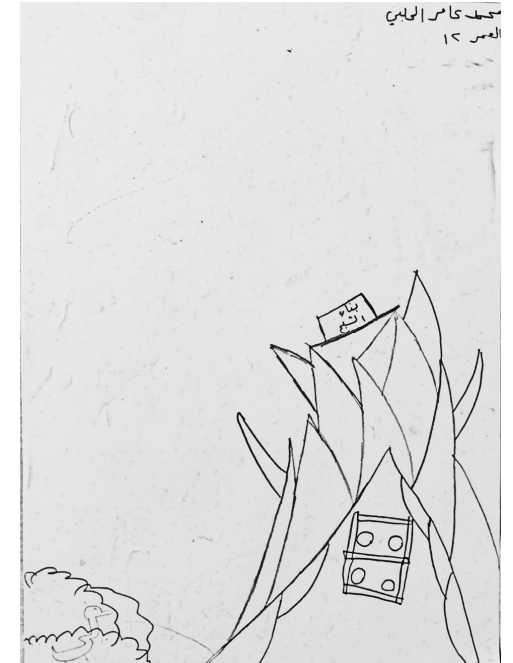
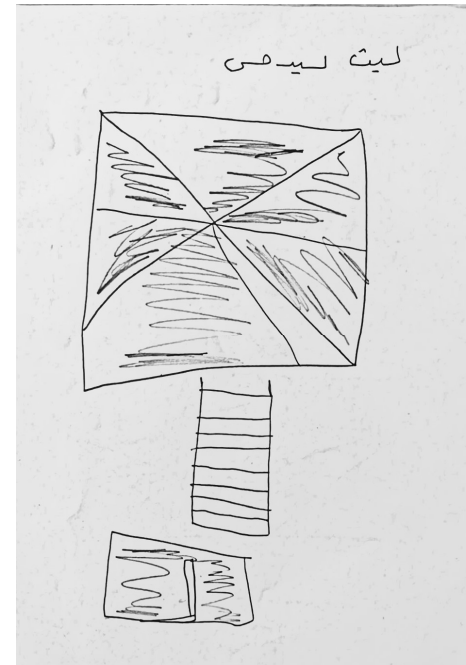
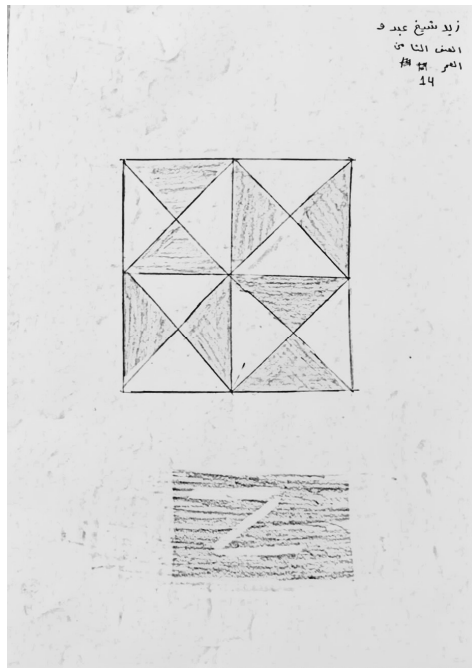


Figure 4.34 Children workshop (author)

Figure 4.35 Children workshop (author)

Figure 4.36 Children workshop (author)

Figure 4.30 Children workshop (author)

Figure 4.31 Children workshop (author)

Figure 4.32 Children workshop (author)

Figure 4.33 Children workshop (author)

**Conventional House Stereotype**

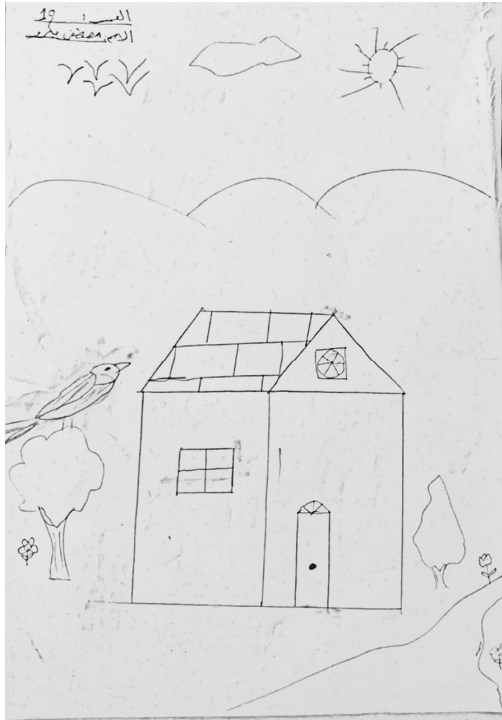


Figure 4.37 Children workshop (author)

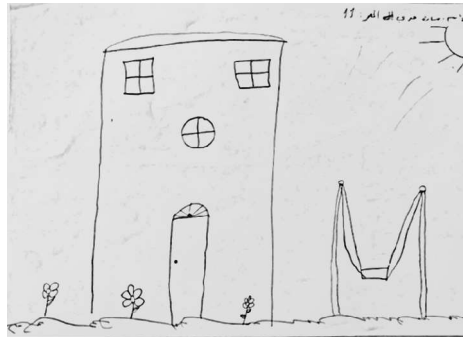


Figure 4.38 Children workshop (author)

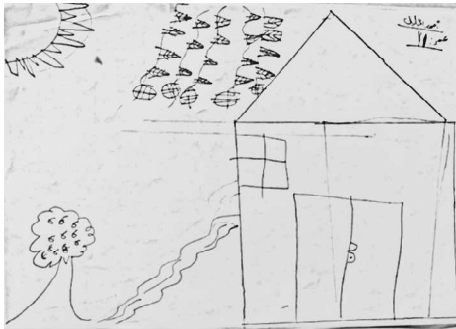


Figure 4.39 Children workshop (author)

**Scattered Blocks**

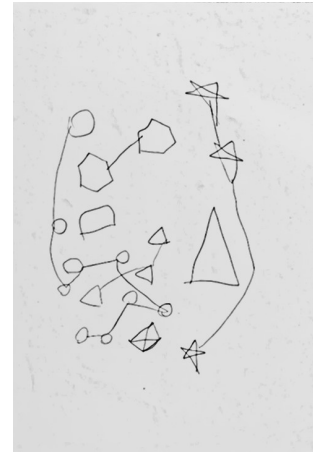


Figure 4.40 Children workshop (author)

Figure 4.41 Children workshop (author)

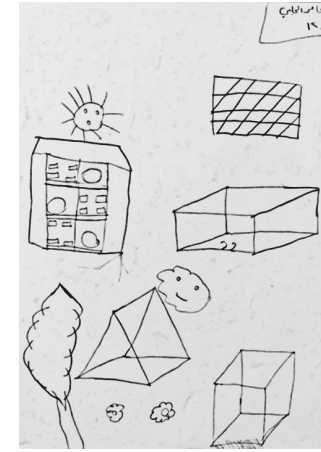
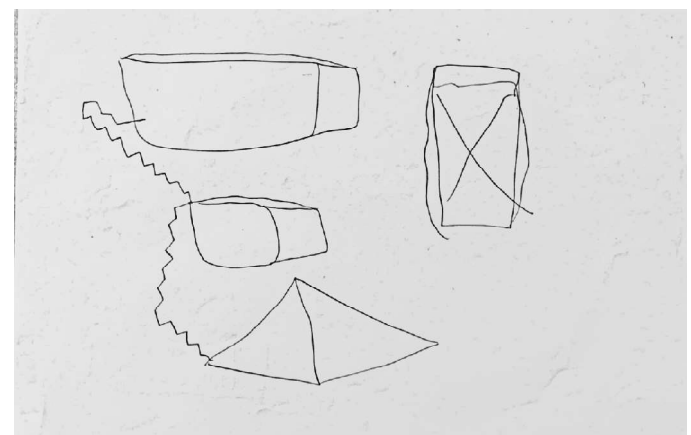
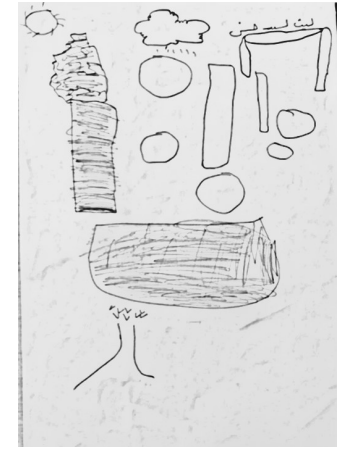


Figure 4.42 Children workshop (author)

Figure 4.43 Children workshop (author)

Figure 4.44 Children workshop (author)



## Orphanage Typologies

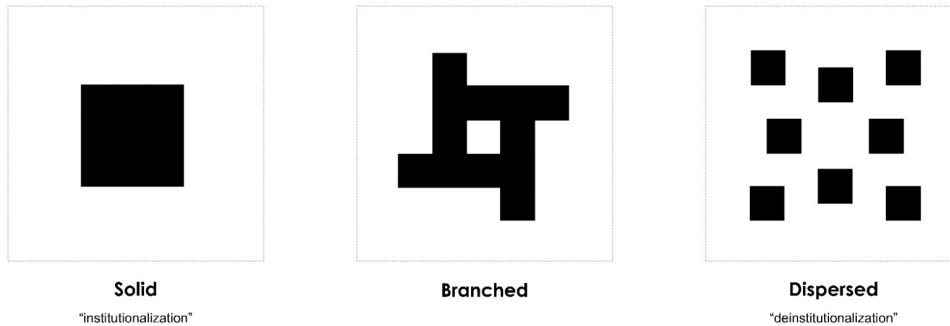


Figure 4.45 Orphanage typologies (author)

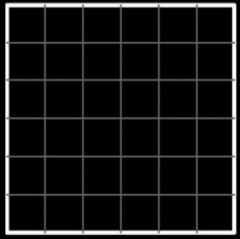
In my design, I prioritized the branched typology because it offers a balance between being less institutional than the solid typology and more controlled and secure than the dispersed one.

## Design Principles

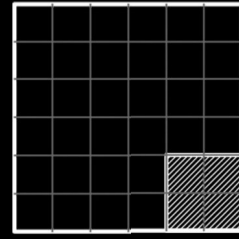
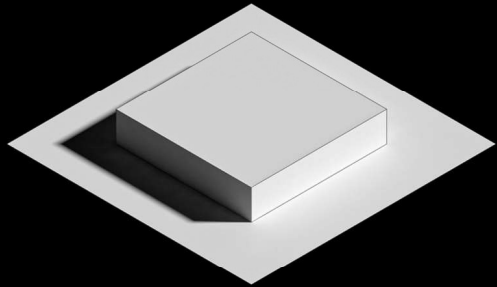
### How to approach the design:

- Centralized Courtyard and "Human Scale" Spaces.
  - The layout should be organized around several courtyards, creating a series of semi-private, scaled-down spaces that encourage children to play and socialize. These spaces will be both functional and symbolic, making children feel part of a community while giving them the freedom to move around independently in a safe environment.
  - These courtyards will bring natural light into the heart of the building, giving the children a connection to the outdoors.

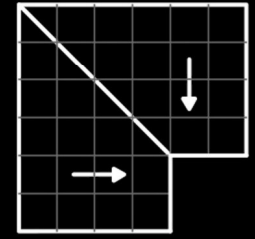
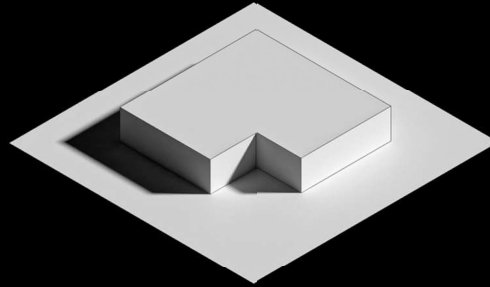
- Separation of Private and Communal Spaces
    - The design will separate private sleeping quarters from communal areas. The children's bedrooms will be clustered in small, intimate groups, while activity spaces are around the courtyards. This arrangement will promote a sense of home in the sleeping areas, while communal spaces encourage socializing.
    - The layout will provide for a collective dining area, fostering community spirit as everyone gathers to eat together.
  - "In-Between" Spaces
    - The design will emphasize the importance of "in-between" space transitional areas like hallways, small niches, and semi-open courtyards that are not explicitly functional but offer children freedom to play, explore, and interact. These spaces will provide a buffer between bedrooms and the other activities, making the building feel more like a small village than an institutional facility.
  - A Child-Centered Approach
    - The Proposal will focus on designing for the scale and needs of children. This will be reflected in the lower windows, child-sized doors, and a thoughtful balance between openness and enclosure. The aim is to create a space where children will feel secure but also have areas to explore, fostering independence and curiosity.
  - Modular, Grid-Based Layout
  - Scalable and Expandable Design
    - The design system should allow the Orphanage to be easily expanded or adapted for different functions over time. The design's flexibility should make it possible to add new units or repurpose the building for other uses, such as schools, or housing, reflecting the principles of **mega-structures**. This adaptability ensures the building can grow and change to meet evolving needs.
- In sum, this proposal will prioritize a sense of community, interaction, and child-centered design, reflecting the philosophy that architecture should serve as a "playground for human beings." This approach will create a warm, accessible space that feels more like a small, self-sufficient village than a traditional institution.



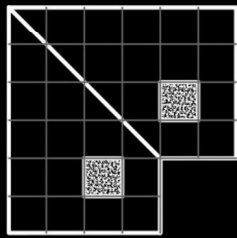
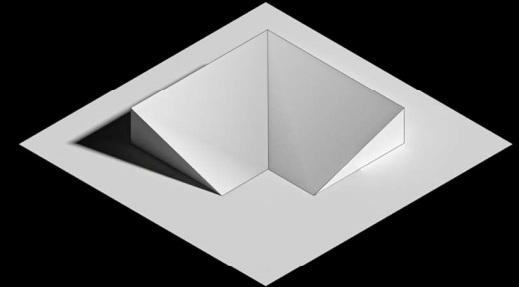
Step 1



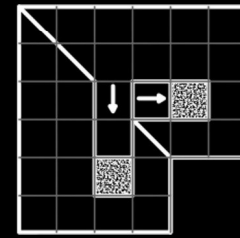
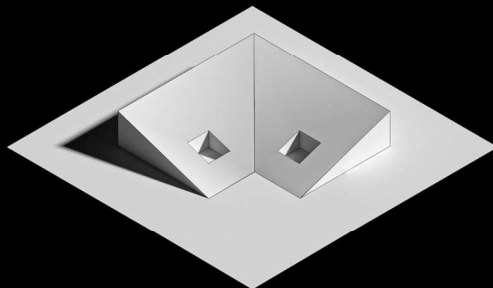
Step 2



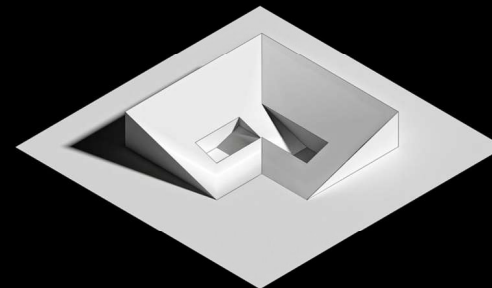
Step 3



Step 4



Step 5



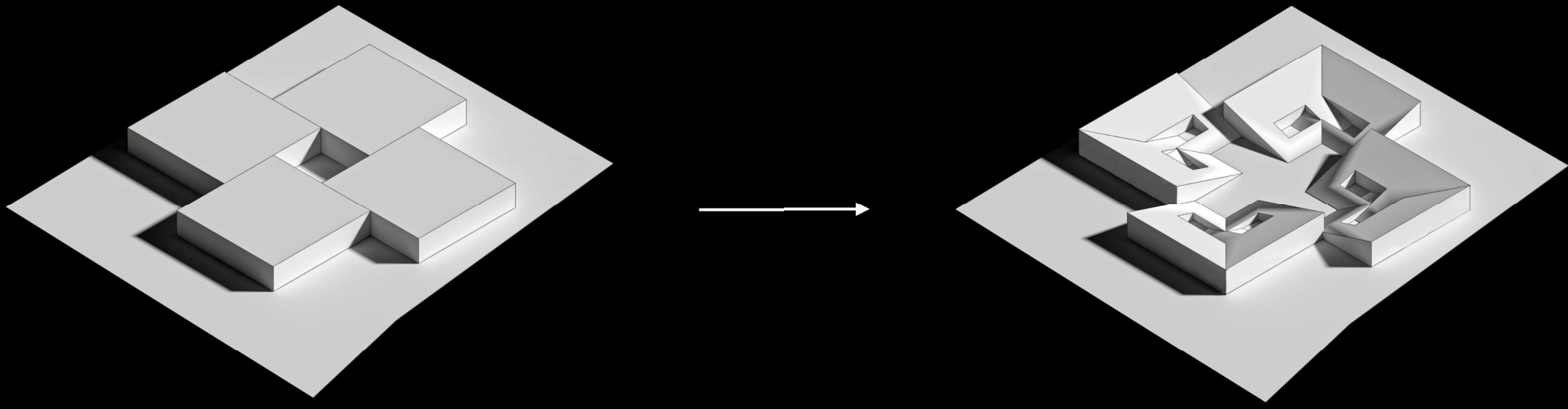
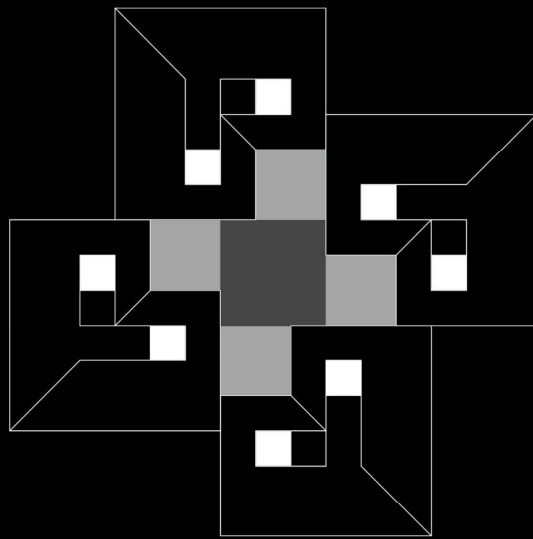


Figure 4.47 Unit Repition (author)

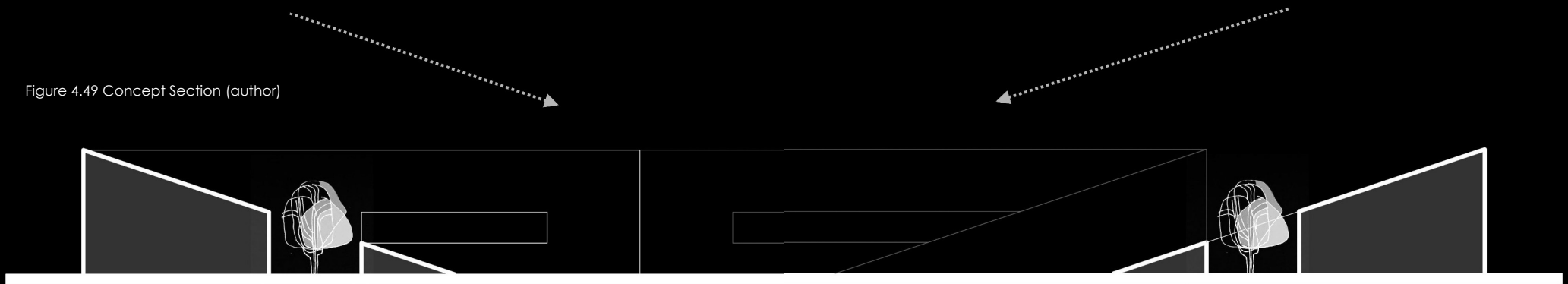
Figure 4.48 Spaces Analysis (author)



● Private Space      ● Semi Private Space      ● Semi Public Space

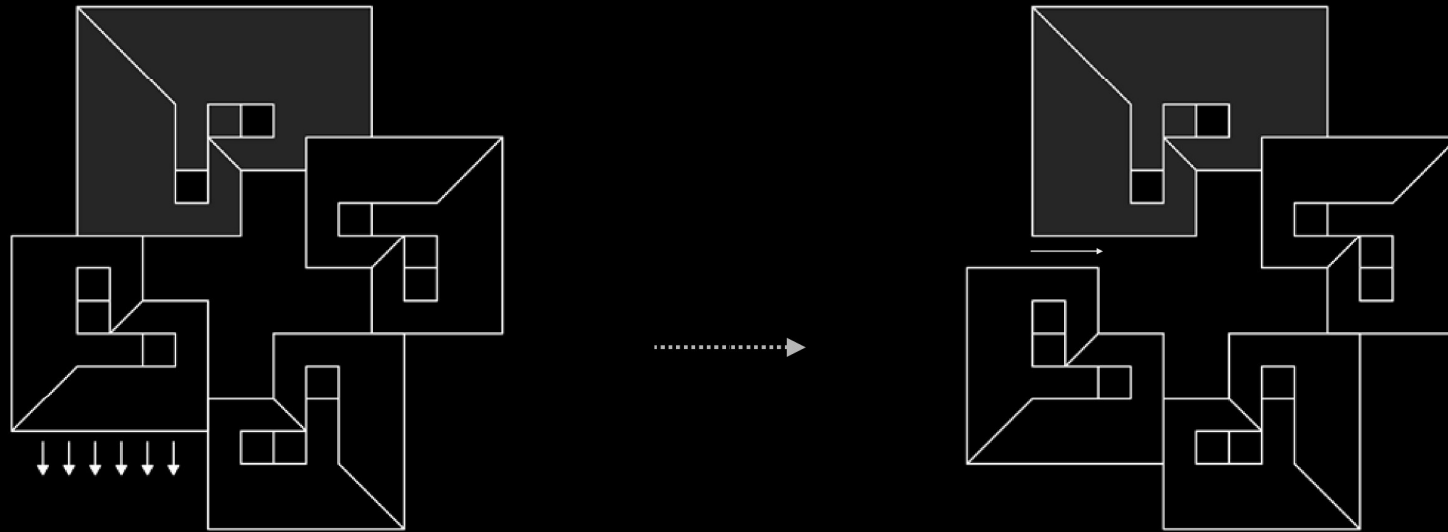
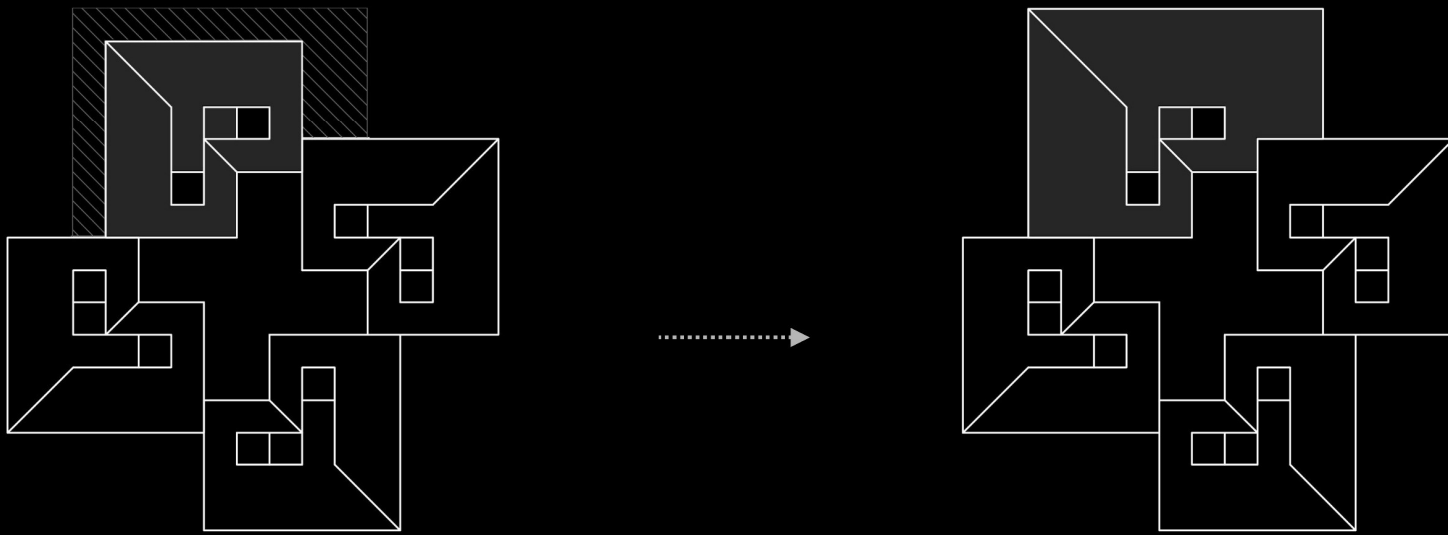
The design incorporates a series of common spaces with varying levels of privacy—Semi-public, semi-private, and private—to create a gradual transition for children. This approach fosters a sense of security while promoting comfort and adaptability, supporting their emotional well-being as they navigate different environments.

Figure 4.49 Concept Section (author)



The design creates a secure, welcoming space for children, with sloped walls symbolizing a mother's embrace, as reflected in the section design.

Figure 4.50 Masses Analysis (author)



A unit is slid to define the residential entrance, while the farming and exhibition unit are enlarged for enhanced functionality.

- Residential units
- Farming and Exhibition unit



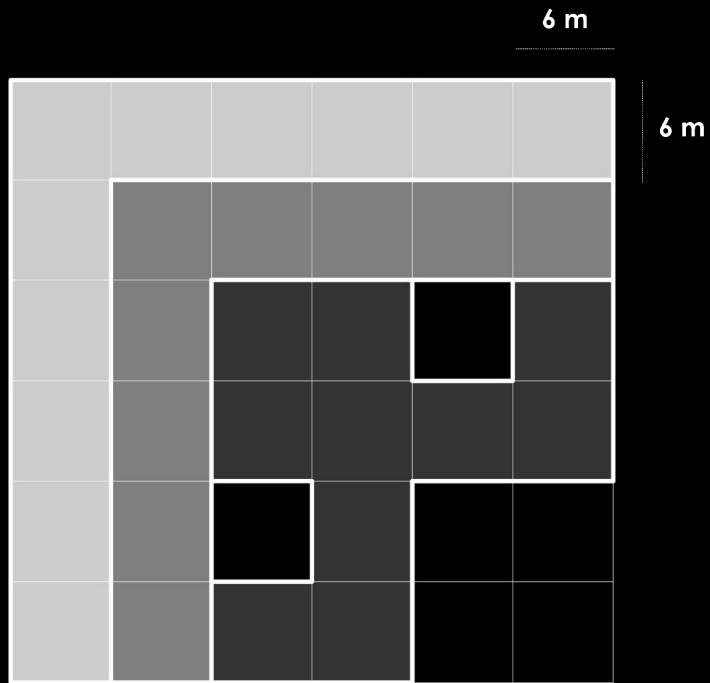
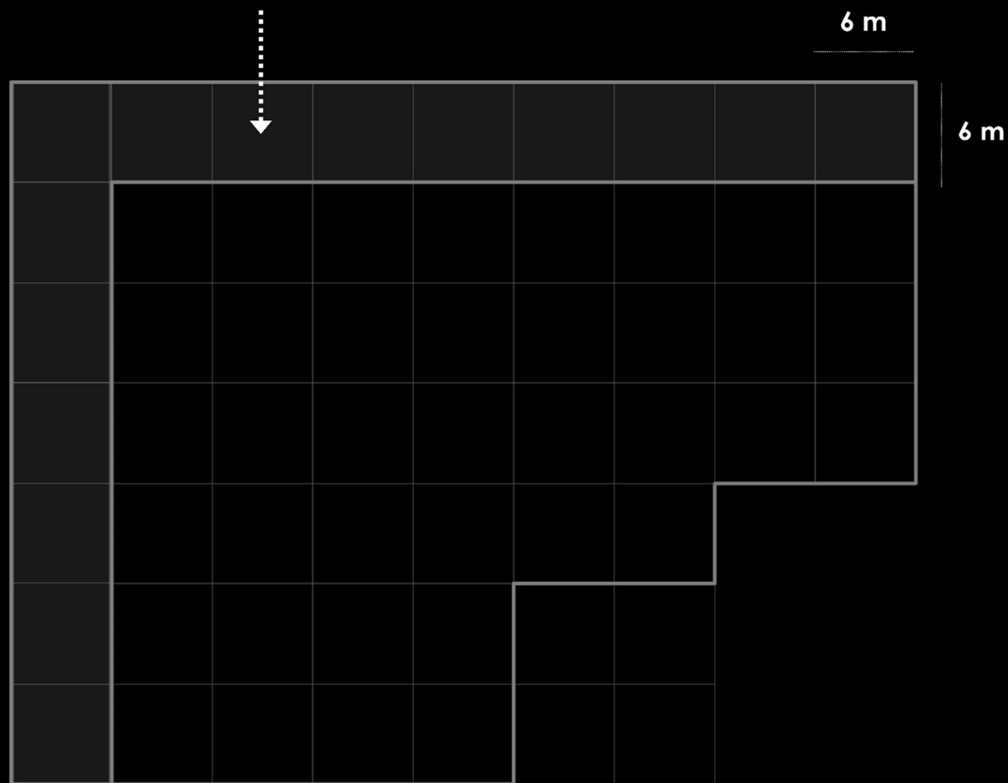


Figure 4.51 Unit Analysis (author)

The design emphasizes the importance of 'in-between' spaces—transitional areas such as hallways, niches, and semi-open courtyards—that go beyond purely functional purposes. These spaces are thoughtfully crafted to provide children with opportunities for unstructured play, exploration, and social interaction, which are vital for their cognitive and emotional development. Acting as buffers between bedrooms and activity areas, these zones soften transitions, reducing sensory overload and helping children adapt to their surroundings. Additionally, they foster a sense of independence and curiosity while creating moments of pause and connection that enrich the overall experience, making the environment feel more welcoming and less institutional.

In the residential units, an interaction zone is strategically placed as this buffer, enhancing social engagement and providing a sense of community. To further enrich this space, interactive partitions are introduced, such as partitions made of LEGO blocks. These allow children to personalize and decorate their surroundings, giving them a sense of ownership and creativity. Personalization is crucial for children's development as it nurtures their sense of identity, self-expression, and belonging, while ensuring the space evolves uniquely with the children who use it. This dynamic approach fosters emotional well-being and builds a connection between the child and their environment."



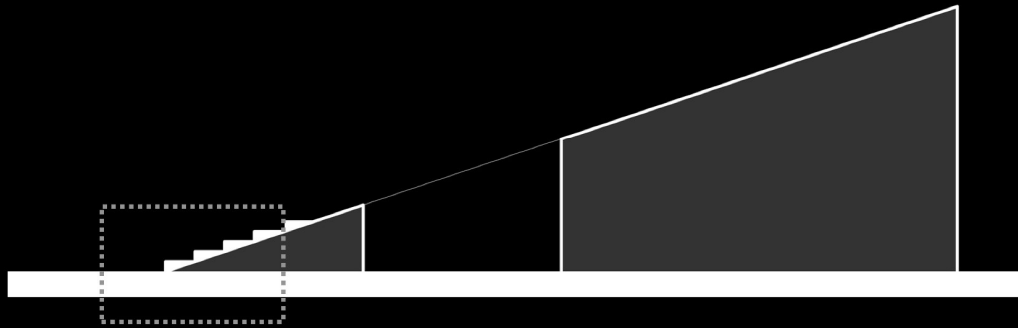
○ Entrance

The farming and exhibition unit is designed with a separate entrance located outside the children's common spaces to ensure greater privacy for the children. This allows visitors attending exhibitions or farming workshops to access the unit directly. The design includes a portico for several reasons. First, it visually distinguishes the unit, emphasizing its unique function within the overall complex. Second, the portico provides shading and shelter at the entrance, enhancing comfort for visitors and marking the transition into the space.

The farming zone is strategically located in the southwest direction, aligned with the prevailing winds in Damascus. This positioning facilitates natural airflow, creating a comfortable microclimate that is ideal for farming activities. The airflow helps regulate temperature, reduces humidity buildup, and minimizes the risk of pest infestations or fungal diseases, ensuring healthier crops. Additionally, the farming area contributes to the orphanage's self-sufficiency by providing fresh vegetables and fruits, which can significantly reduce food expenses and support its economy.

Children are actively involved in these farming workshops, which serve as an educational and therapeutic experience. Participating in planting and nurturing crops instills a sense of responsibility, teamwork, and accomplishment, fostering emotional well-being. Furthermore, learning to care for plants helps children develop empathy and a connection to nature, which are vital life skills. The portico, by creating a shaded and inviting environment, ensures that farming activities can be conducted comfortably while adding aesthetic and functional value to the space. Overall, this design element not only enhances the unit's usability but also integrates seamlessly into the orphanage's vision of providing a nurturing and sustainable environment for its children.

Figure 4.52 Unit Analysis (author)



The sloped surface extending to the ground is transformed into a series of stepped seating in its lower section. This area functions as an informal gathering space for events, play, and relaxation, seamlessly integrating with the surrounding landscape to create a functional and engaging outdoor environment. Its design serves both practical and symbolic purposes, offering a place for children and adults to connect, interact, and engage in shared activities. This thoughtful integration ensures the space is inclusive and adaptable, supporting diverse uses while enriching the aesthetic and social value of the landscape.

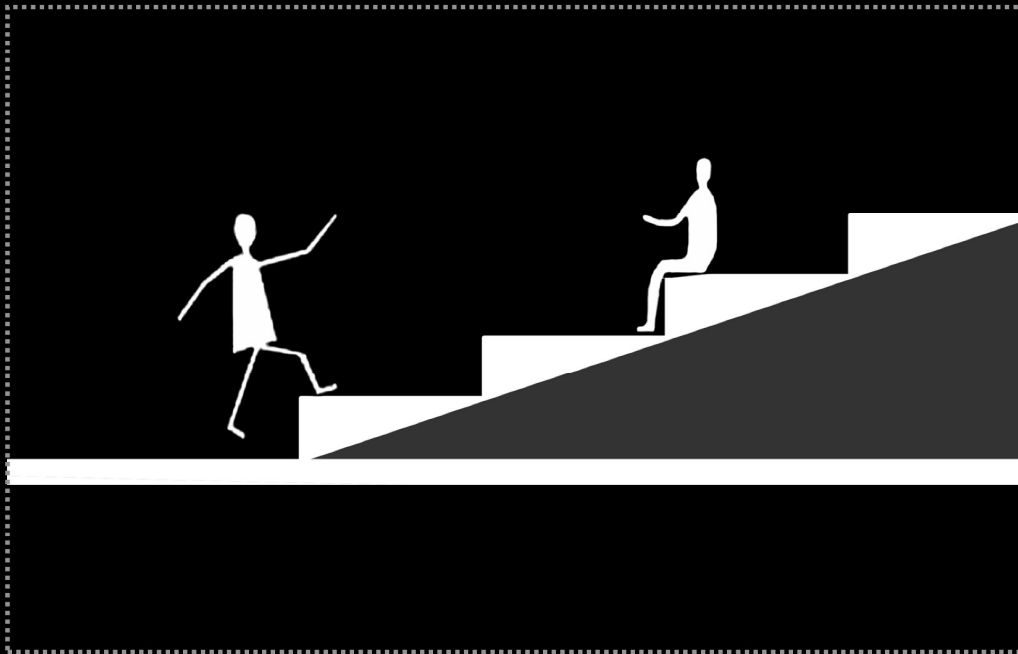


Figure 4.53 Unit Analysis (author)

○ Residential units      ● Farming and exhibition unit

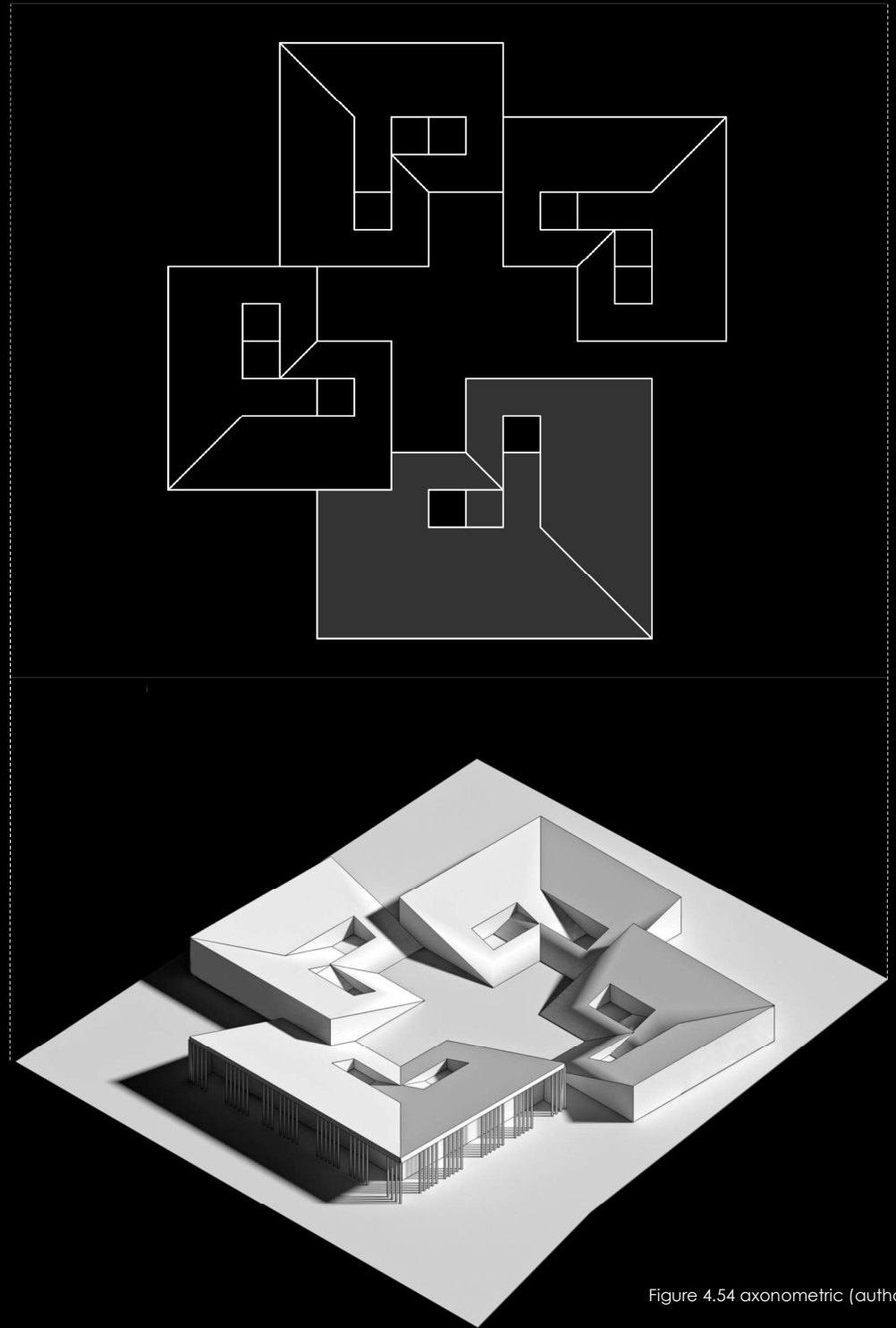


Figure 4.54 axonometric (author)

4.5 Detailed Drawings and Renderings

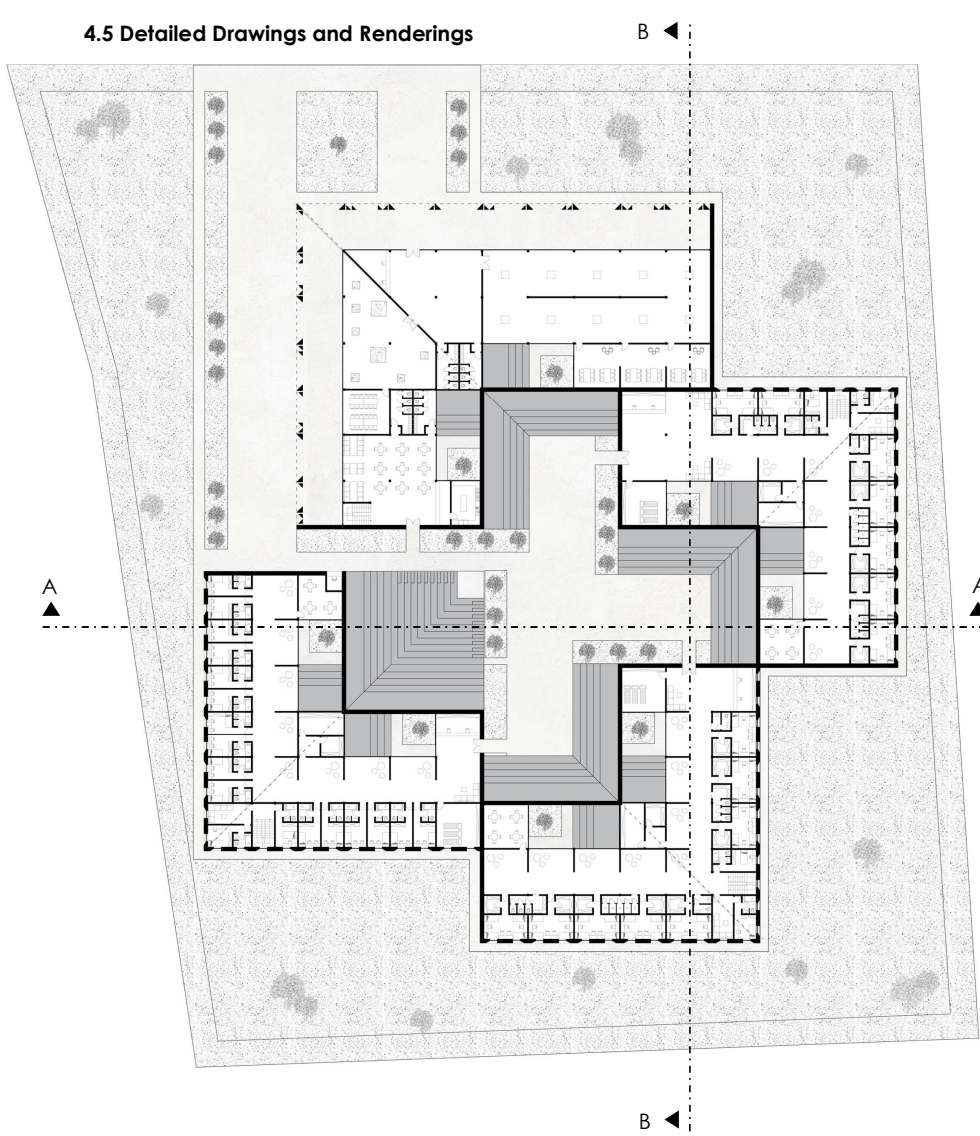


Figure 4.55 Ground Floor Plan (author)

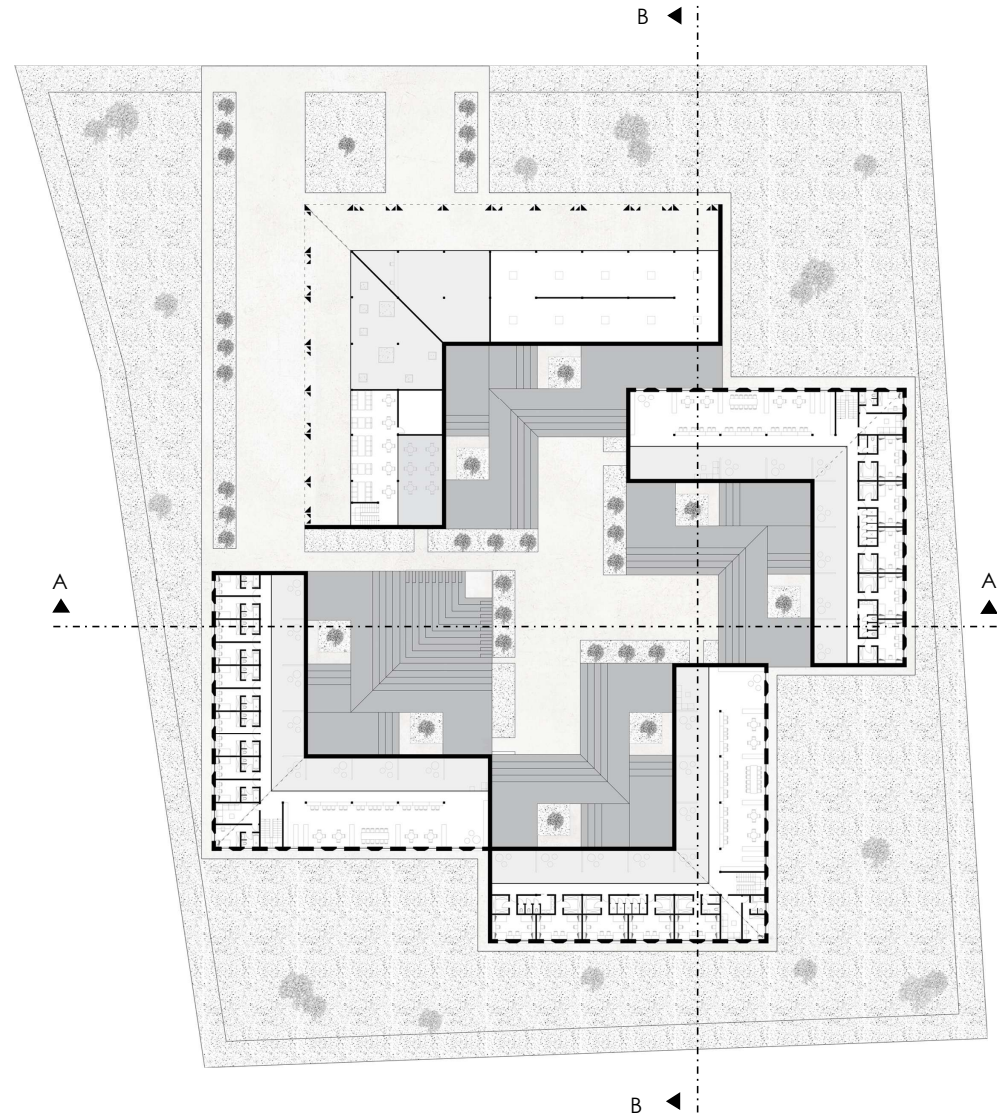


Figure 4.56 First Floor Plan (author)

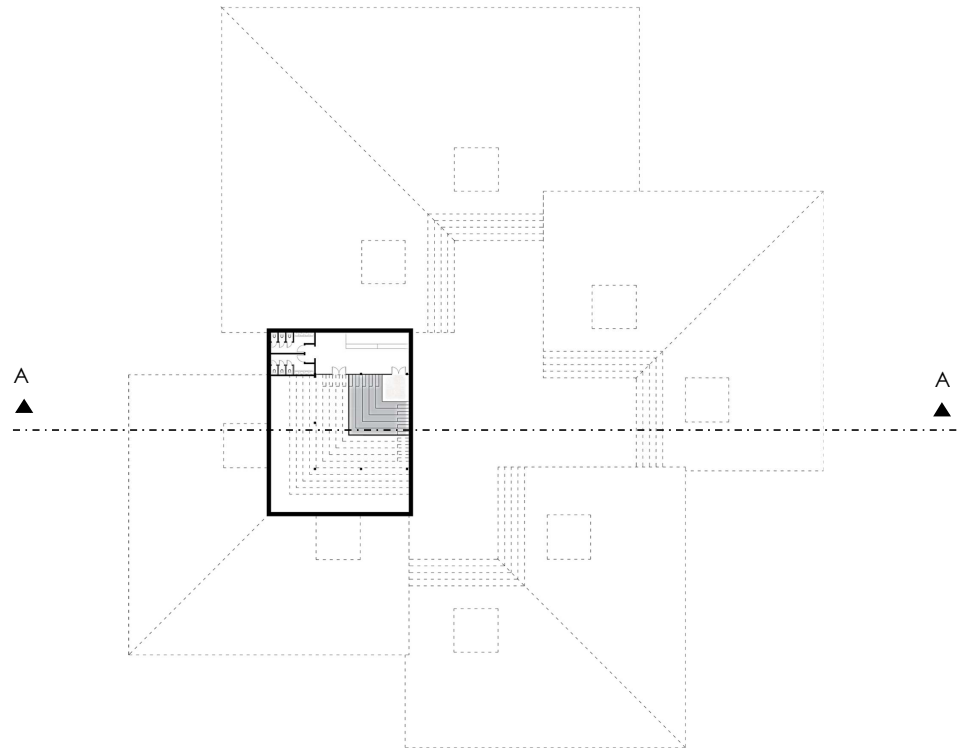


Figure 4.57 Basement Plan (author)

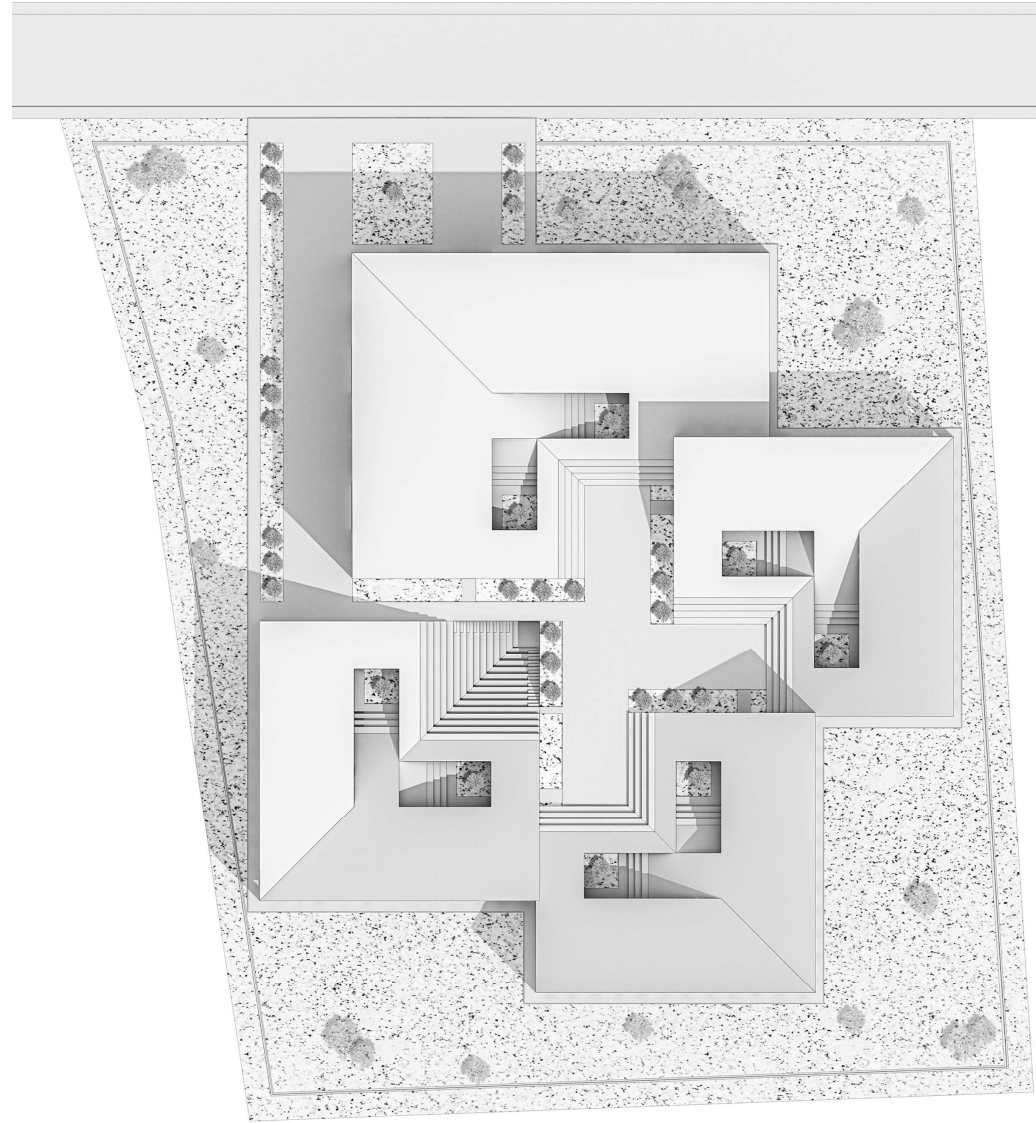


Figure 4.58 Site Plan (author)

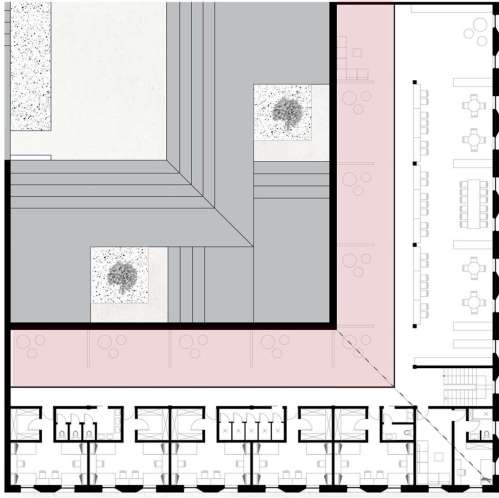


Figure 4.59 Unit Plan Ground Floor (author)

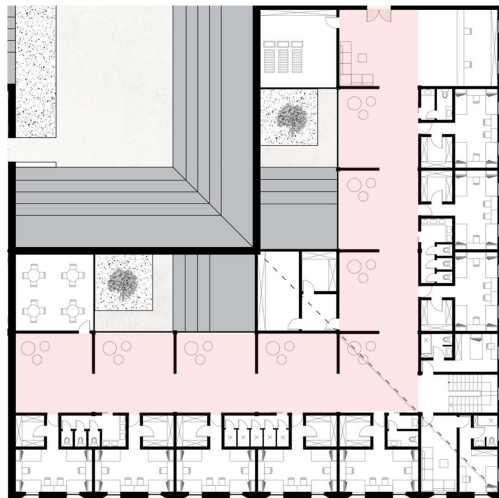
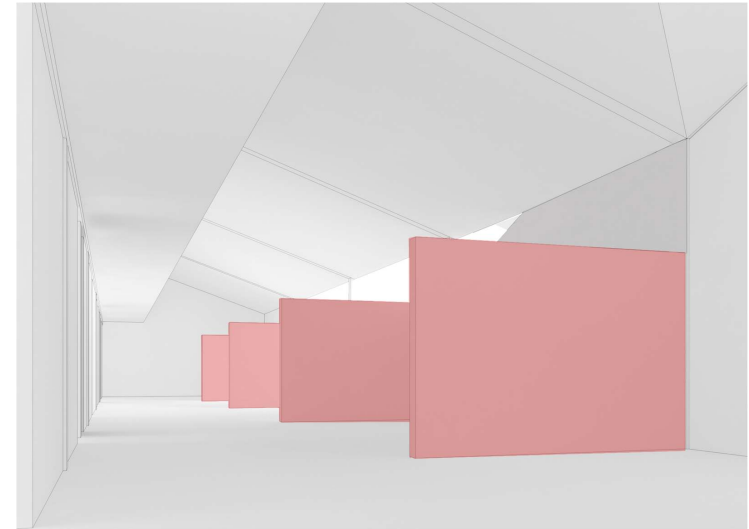


Figure 4.60 Unit Plan First Floor (author)



### Interaction Walls

Figure 4.61 Interior Perspective (author)



Figure 4.62 <https://www.futuristarchitecture.com/43998-mk-nursery-nursery-modern-interior-with-warm-atmosphere.html> (author)



Figure 4.63 <https://www.pinterest.com/archiplaytoys/kids-love-architecture/> (author)

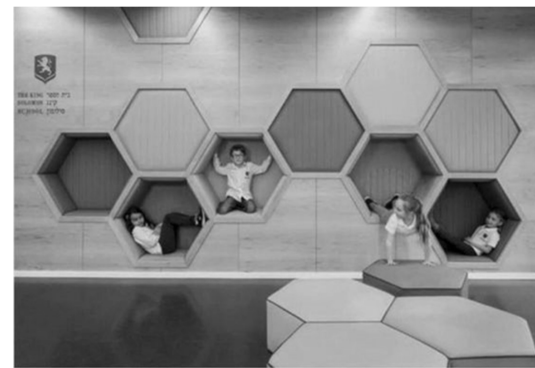
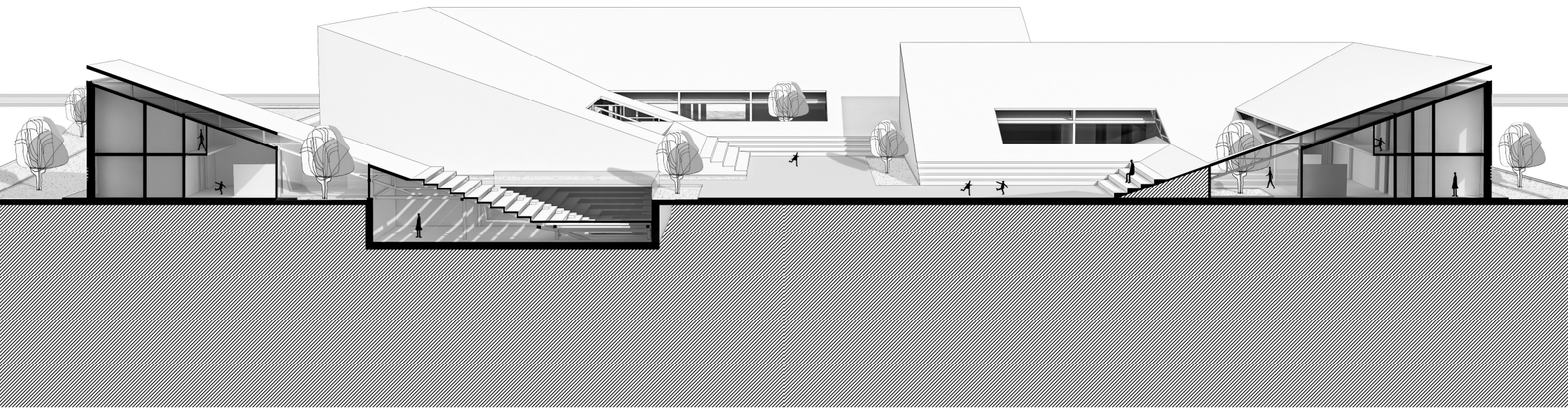


Figure 4.64 <https://moblebo.com/it/architettura-ed-ecodesign-per-bambini/> (author)



Figure 4.65 <https://loodoexhibits.com/imagigraf/> (author)

Figure 4.66 Perspective Section (author)





I designed the building with a sloped double roof, leaving a meter of air space between the two layers. This allows hot air to rise and escape naturally, improving airflow and keeping the interior cooler. The air gap also acts as insulation, reducing the amount of heat that transfers to the inside, which makes the building more energy-efficient. To further enhance insulation, I used thick brick exterior walls, providing better protection from external heat and helping to maintain a comfortable indoor temperature.

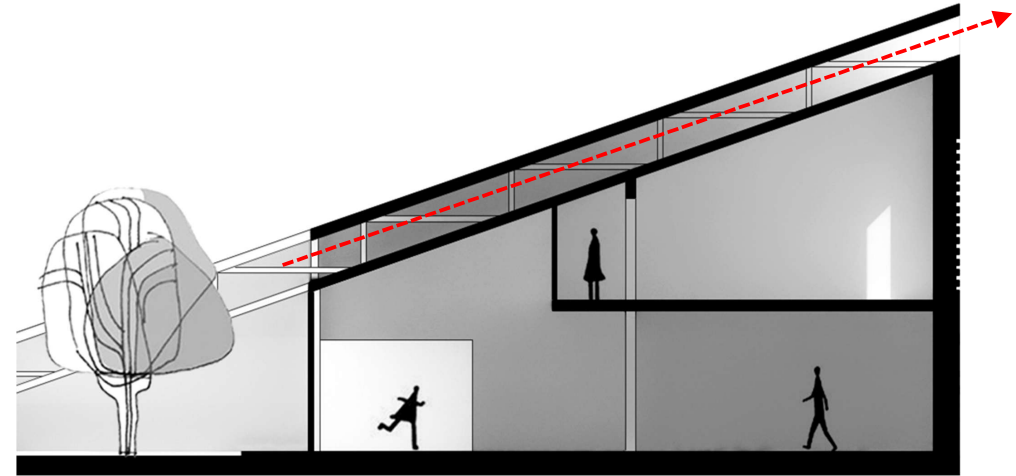


Figure 4.67 Section (author)

Figure 4.68 Section BB (author)

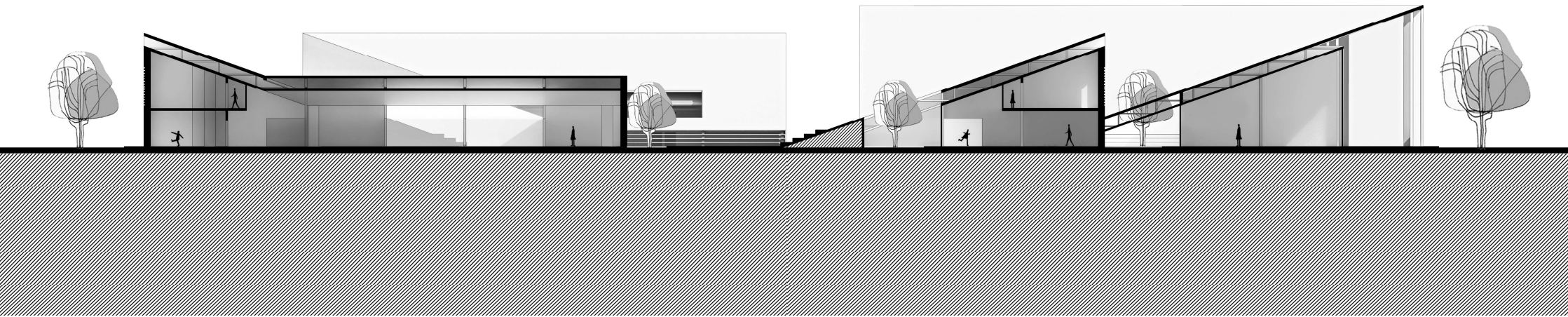


Figure 4.69 Northwest Elevation(author)

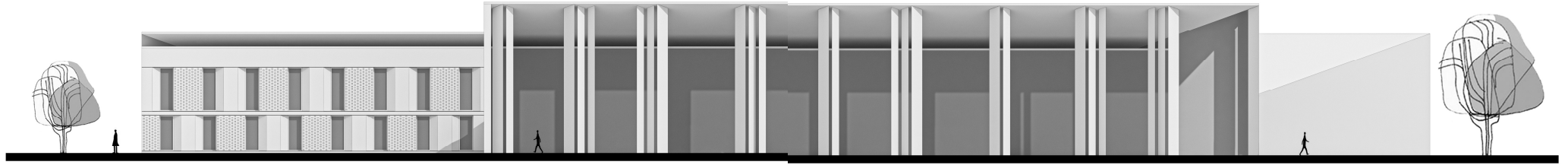


Figure 4.70 Southwest Elevation (author)

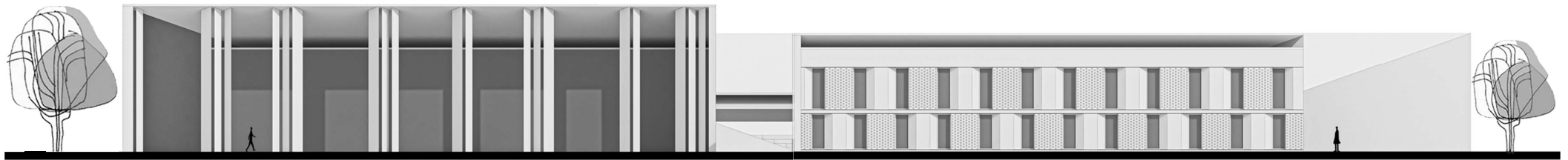
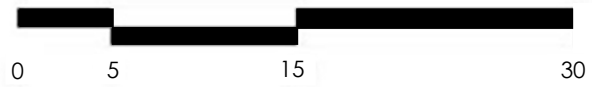
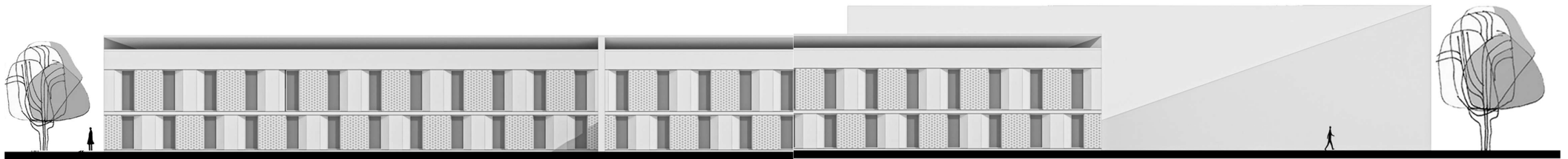
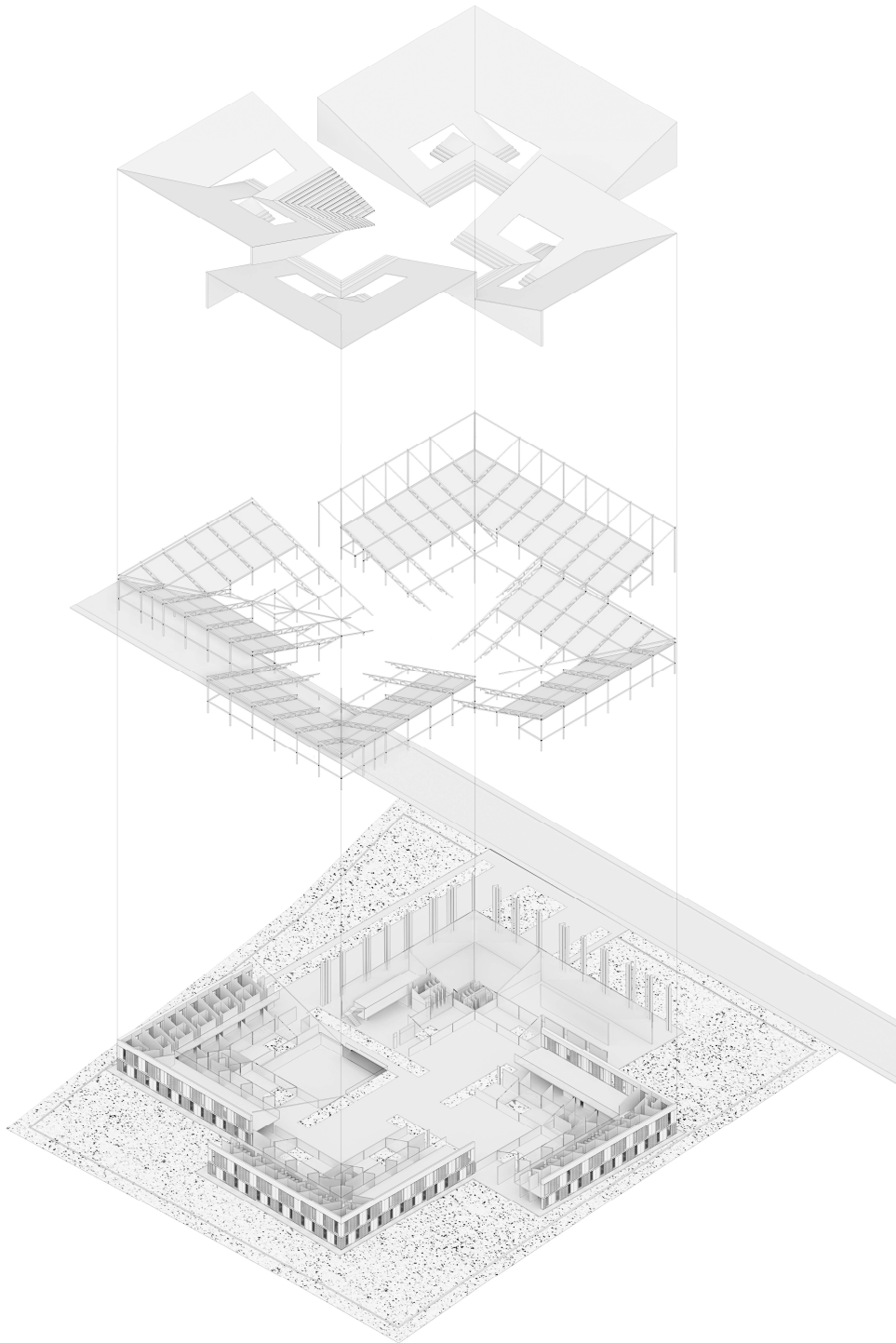


Figure 4.71 Northeast Elevation (author)





In the design process, I sought to capture the spirit of Damascene architecture in a modern way. I began by using the internal courtyards typical of traditional Damascene houses, creating several small courtyards and one large central courtyard in my design. To mirror the interconnected nature of these houses, I connected four units together, forming one intimate space. Finally, I used a portico to distinguish one of the units, enhancing both its functionality and aesthetic appeal, as porticos are a key element of Damascene architecture. In this way, the design seamlessly blends traditional Damascene elements with modern aesthetics, creating a cohesive and harmonious space that reflects the city's architectural heritage.

Figure 4.72 Exploded Axonometric (author)



Figure 4.74 Rendering (author)

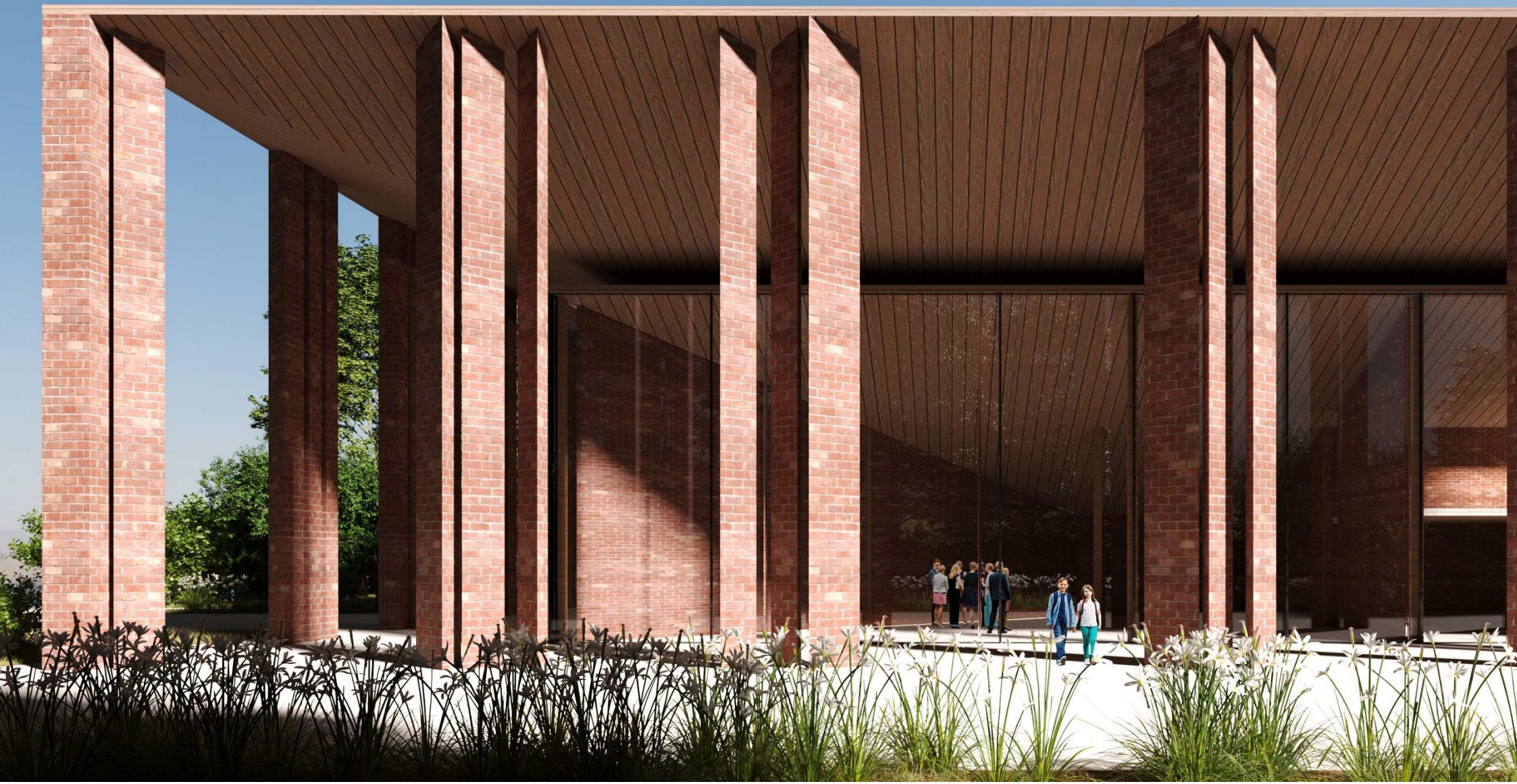


Figure 4.75 Rendering (author)





Figure 4.77 Rendering (author)





Figure 4.78 Rendering (author)



Figure 4.79 Rendering (author)



Figure 4.81 Rendering (author)



Figure 4.80 Rendering (author)



## CONCLUSION

In closing, this project represents a significant step toward addressing the urgent needs of orphaned children in Syria. By integrating residential units, a central common space, and areas dedicated to exhibitions and farming workshops, the design fosters a sense of community and belonging. The layout's branched typology is particularly noteworthy, as it balances the need for security with the desire to create a non-institutional atmosphere. This approach ensures that the environment feels more like a nurturing home than a traditional orphanage.

Through the application of trauma-informed design principles, the project aims to provide a space where children can heal and grow. The central common area serves as the heart of the project, encouraging interaction and engagement among the residents. The inclusion of farming workshops and exhibition spaces also offers opportunities for learning and self-expression, further supporting the children's development.

Ultimately, this design proposal aims to create a supportive and empowering environment for Syria's most vulnerable children. By prioritizing sustainability through the use of natural materials and innovative insulation techniques, the design promotes both comfort and energy efficiency. Through thoughtful and compassionate architecture, this project seeks to foster resilience and contribute positively to the future of these young individuals and their communities.

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