

Spring of Gardens: Healing Spaces and Protection for Children in Jenin, Palestine

by

Hend Assaf

Submitted in partial fulfilment of the requirements
for the degree of Master of Architecture

at

Dalhousie University
Halifax, Nova Scotia
March 2024

Dalhousie University is located in Mi'kmaq'i,
the ancestral and unceded territory of the Mi'kmaq.
We are all Treaty people.

© Copyright by Hend Assaf, 2024

To the children of Palestine who's childhood was taken, to those in need of protection, a safe space, and a home.

Contents

Abstract	v
Acknowledgments	vi
Chapter 1: Introduction	1
1.1 Incentive	1
1.2 Position and Inspiration	1
1.3 Roadmap	2
Chapter 2: About Palestine, the People, and the Children	4
2.1 What <i>Was</i> and <i>Is</i> Palestine? Conflict and Timeline	4
2.2 Jenin: Living Context	7
2.2.1 Population Density	9
2.2.2 Materiality and Agriculture	10
2.2.3 Palestinian Architecture	11
2.3 Recent Strikes on Jenin.....	13
2.4 The Jenin Resistance	15
2.4.1 Martyrs and Art Expression of Freedom	15
2.5 Stolen Childhood	18
Chapter 3: Jenin Intervention	23
3.1 Why Jenin	23
3.1.1 Words on Gaza.....	23
3.2 Site Analysis and Location.....	24
3.2.1 Site Analysis	24
3.2.2 Site Location	26
Chapter 4: Theory to Practice.....	28
4.1 Delving into the Mind First	28
4.1.1 How Does the Brain React to Trauma?	28
4.1.2 Trauma-informed Architecture	29
4.2 Designing Healing and Therapeutic Spaces in Schools.....	30
4.3 Case Studies	35
4.4 Design Methodologies	41
4.4.1 Nature Therapy.....	42

4.4.2 Sense of Community and Home.....	43
4.4.3 Therapeutic Spatial Qualites for Children	47
4.4.4 Art Therapy	49
Chapter 5: Proposal.....	53
5.1 Design Approach	53
5.1.1 The Child’s Position	53
5.1.2 The Adult’s Position	53
5.1.3 The Architectural Position	54
5.1.4 Dissecting the Palestinian Home	55
5.2 Design Proposal: Program and Facility	56
5.2.1 Re-imagined School	57
5.2.2 Multiuse Spaces for Healing.....	60
5.2.3 Spaces of Connection.....	62
5.2.4 Materiality and Form	64
5.3 Design Results	67
5.3.1 Exploring Form and Program Division	67
5.3.2 Neighborhood Scale	68
5.3.3 Master Plan.....	69
5.3.4 Unit Plan	71
5.3.5 Majless.....	74
5.3.6 Education and Art Facility	77
5.3.7 Melath Garden	80
5.3.8 Bunker	82
5.4 The Overall Picture	86
Chapter 6: Conclusion	97
References	99

Abstract

The number of Palestinian orphans and children who have experienced trauma, PTSD, and the loss of what a childhood should have been is growing due to the ongoing occupation of Palestine by the Israeli Government. Children in Palestine face multiple challenges, including a lack of safe communal spaces, insufficient healthcare, limited access to education, healing programs, and more. These children grow up with a harsh and confused outlook on life while doubting the possibility of a better future because of the extensive amount of pain around them. The design and functionality of the traditional orphanages and schools in Jenin do not often meet the needs of the children they serve. This thesis focuses on the design qualities that can ensure children's psychological well-being, properly facilitate education and learning, help them grow past their trauma, and give them opportunities to heal, dream, and create a joyous life in Jenin.

Acknowledgments

This work would not have been possible without the help of the wonderful people who surround me.

I first and foremost thank God for providing me the knowledge, strength, and courage to accomplish this thesis.

I would like to express my heartfelt thanks to Cristina Verissimo, for her inspiring and encouraging guidance throughout this entire journey.

I want to thank the ones closest to my heart for always being there to make me smile and cheer me on, especially after a long, tired day of work.

Chapter 1: Introduction

1.1 Incentive

How can we bring back a sense of childhood and safety to Palestinian Children and Orphans Architecturally? What can we do in order to mitigate the trauma inflicted upon the new generation of Palestinians and give them a safe space to thrive and live for a more hopeful future?

1.2 Position and Inspiration

After almost a century of continuous war and occupation, the people of Jenin have grown to be a city of Resistance. Although opportunities for refuge and escaping are not that common if they wish to leave their homeland, they have endured many years and almost the entirety of their lives fighting for freedom, becoming martyrs, and living through abuse because of their land. This holds them in a position of grounding their feet and never wanting to leave, continuing their resistance. In response, they have grown used to the struggles they endure every day and need support and healing. The new generation of children in Jenin had no choice or power to not be born into a land of occupation and war. They grow up falling into a puddle of despair lacking dreams and the inspiration for their future. They grow up abused, and witnessing traumatic events no child should bear.

In an attempt to heal and give way for these children's futures, it is important to give them the power to embrace what has been happening, heal from the pain, and rekindle their dreams for their future.

This thesis can ultimately become a prototype for exploring methods of healing spaces for children facing trauma and abuse, and that are in need of a safe space as well as a sense of home and belonging.

This thesis does not propose an unreachable solution to stop the trauma and abuse, but rather to start the process of healing from the trauma and creating meaning for the children of Palestine's future by converting that pain into strength.

1.3 Roadmap

After introducing this thesis's incentive and direction in the first chapter, the second chapter of this report will go over the history and timeline of the occupied land of Palestine to give an idea of what the citizens have gone through in terms of loss of land, human rights, governmental power, and more. It will also highlight the living conditions of Palestinians, mainly children, and touch on the realities of their stolen childhood. In the third chapter, the report will cover a site analysis of Jenin and the intervention this thesis proposes for the children. Moving to Chapter 4, the report will identify case studies and the main methodologies this project will take in terms of healing guidelines and strategies to achieve the ideal programs. Chapter 5 follows by presenting the design proposal and qualities, as well as the process and preferred outcomes for the children's village of Jenin. Lastly, chapter 6 will conclude the findings and results of this thesis.



Figure 1: This image is a wish image of the School and Orphanage Village of Healing for Children in Jenin, Palestine.

Chapter 2: About Palestine, the People, and the Children

2.1 What Was and Is Palestine? Conflict and Timeline

Palestinian land has been fought over for many decades, reaching almost a century since the Israeli Occupation after Jewish settlers were welcomed in the land. It is considered a holy land to the Abrahamic religions causing many sanctions of beliefs to try and claim it (Brice et al. 2024). This then lead to an uproar, war, and hatred between the people. This war has impacted the citizens of Palestine greatly, as it has turned into a genocide as stated by a United Nations



Figure 2: This map displays the current day West Bank and Gaza Strip states of Palestine under Israeli occupation.

Expert (Farge 2024) over many years, displacing families and children out from their homes with nowhere to go, and left to answer to missiles and gunfire (United Nations 2024). With the continuous hope Palestinians have of one day reaching freedom and their home back, they continue to fight and stay grounded in their land even if it means facing a continuous battle.

The following diagram provides a brief timeline of the Palestine and Israel conflict and land occupation.

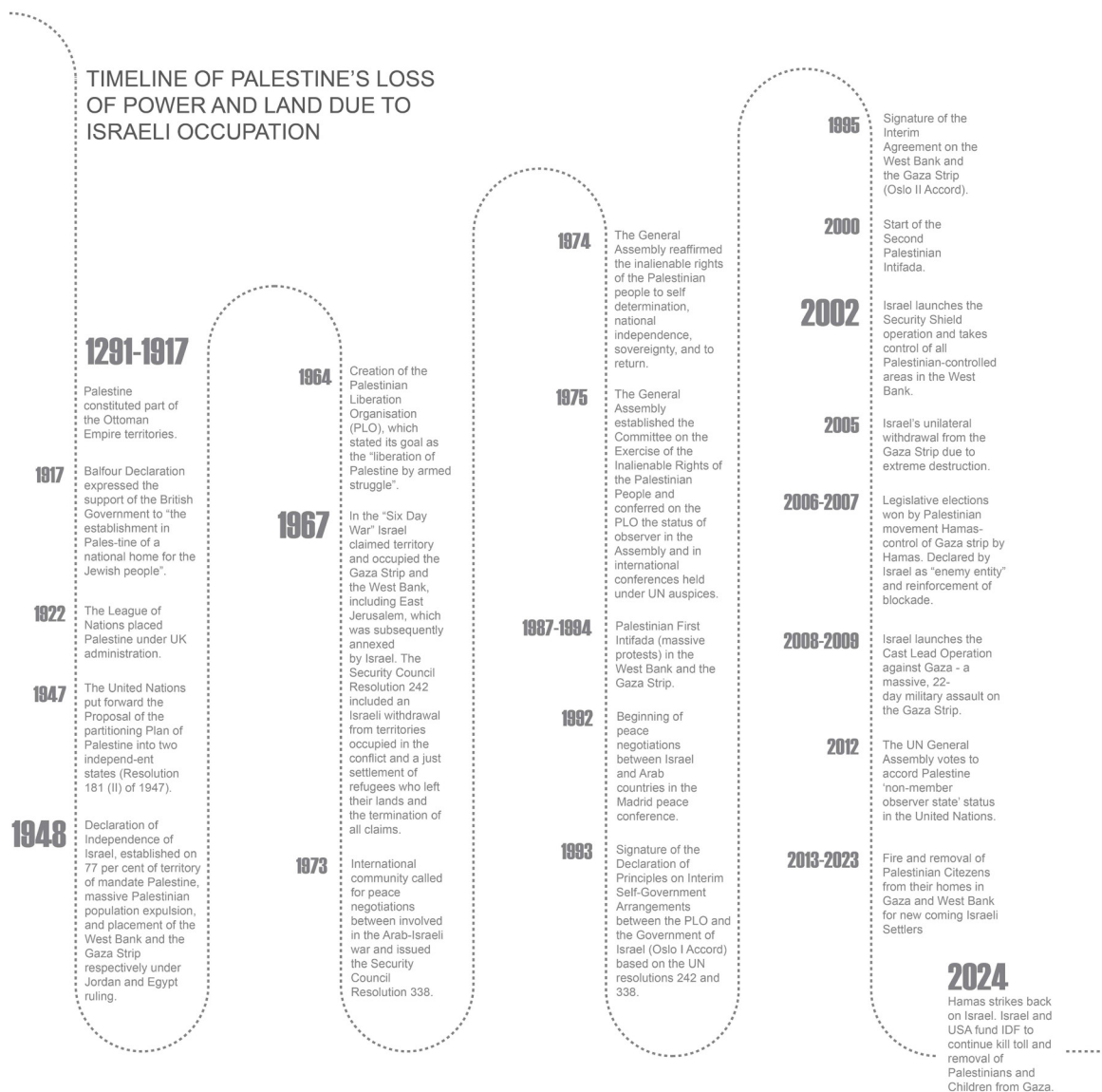


Figure 3: This timeline shows important events of land occupation and Israeli settlement in Palestine (data source: Sinclair and Hassouna 2012).

The diagrams below provide four maps indicating the loss of land power and control in Palestine during the Israeli Occupation, as well as new settlers since 1917.



Figure 4: The images illustrate the loss of Palestinian land to Israeli Occupation from 1917-2023.

2.2 Jenin: Living Context

Jenin came under Israeli occupation in 1967 and was put under the administration of the Palestinian National Authority as Area A of the West Bank in 1993. The remaining State of Palestine is considered a third-world country with limited resources for clean water, restroom facilities, structured classrooms, parks, and functional communal spaces, compared to the first world country living conditions of the State of Israel. Many live in poverty with over ten thousand refugees in the Jenin Refugee Camp in the city (UNRWA 2015). Jenin's climate is a Mediterranean climate experiencing all typical four seasons with winter being mildy cold and rainy, and summer being hot and dry, whilst autumn and spring are the most pleasant and beautiful.

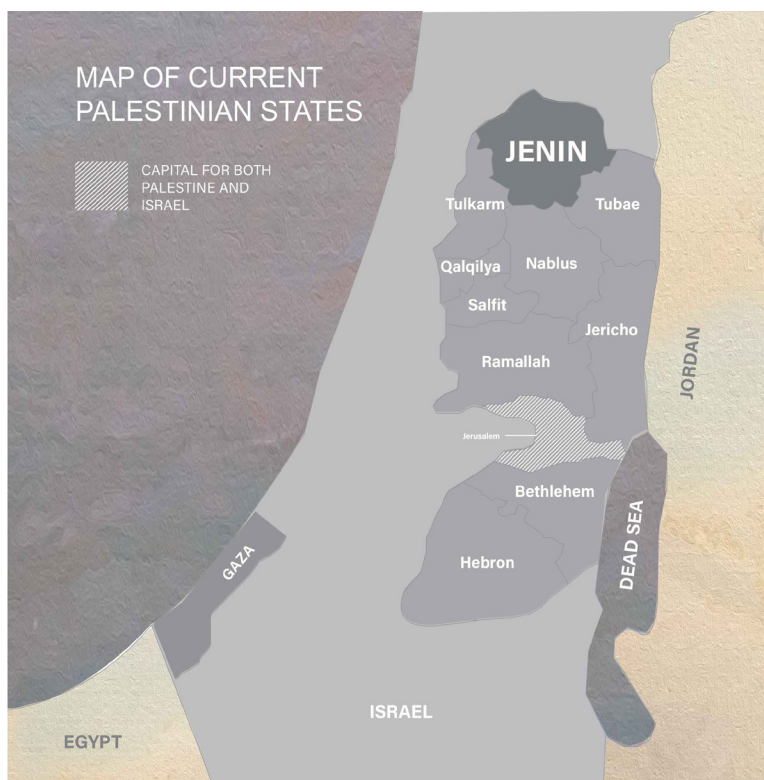


Figure 5: This is a map of current Palestinian states without marked occupied lands of Israel within the West Bank.

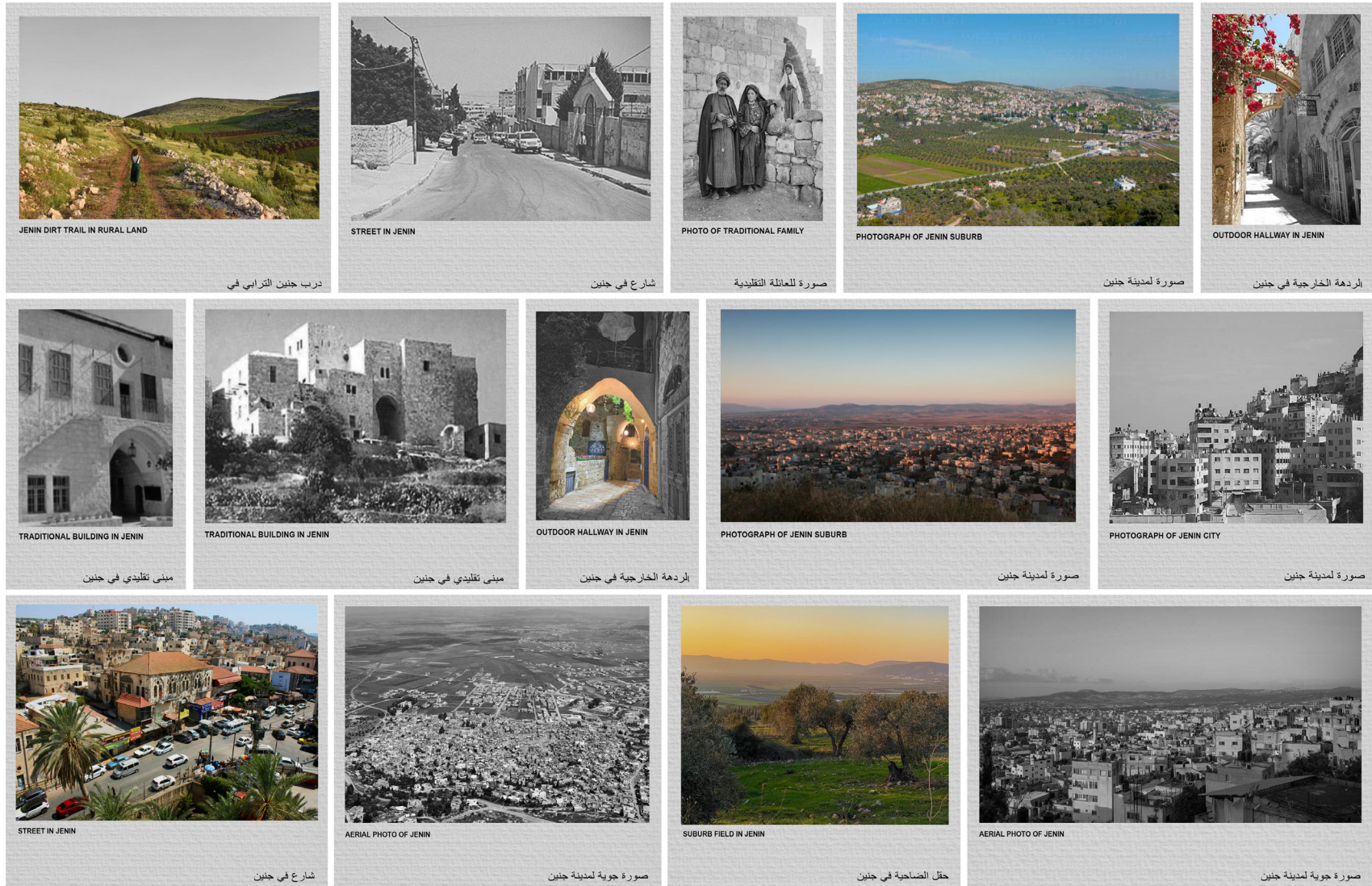


Figure 6: These images are photographs of Jenin's city, suburbs, streets, and allys (Rustum 2023; Welcome to Palestine 2016).

Jenin is a beautiful city, renowned for its abundance of fruits and vegetables because of its rich soil. That is where Jenin’s name comes from- “Spring of Gardens”. It is popular in olive and fig trees, as well as limestone and clay construction (Butterfield et al. 2000).

2.2.1 Population Density

The diagram below (figure 7) illustrates the population density within the Middle East and some surrounding countries, showing the land of Palestine and Israel being of the highest population density in that area. Closing up onto the west bank of Palestine, we see that there is still a high population density throughout Palestine, however, the South of the West Bank becomes denser whilst up North in Jenin is seen to be the lowest.

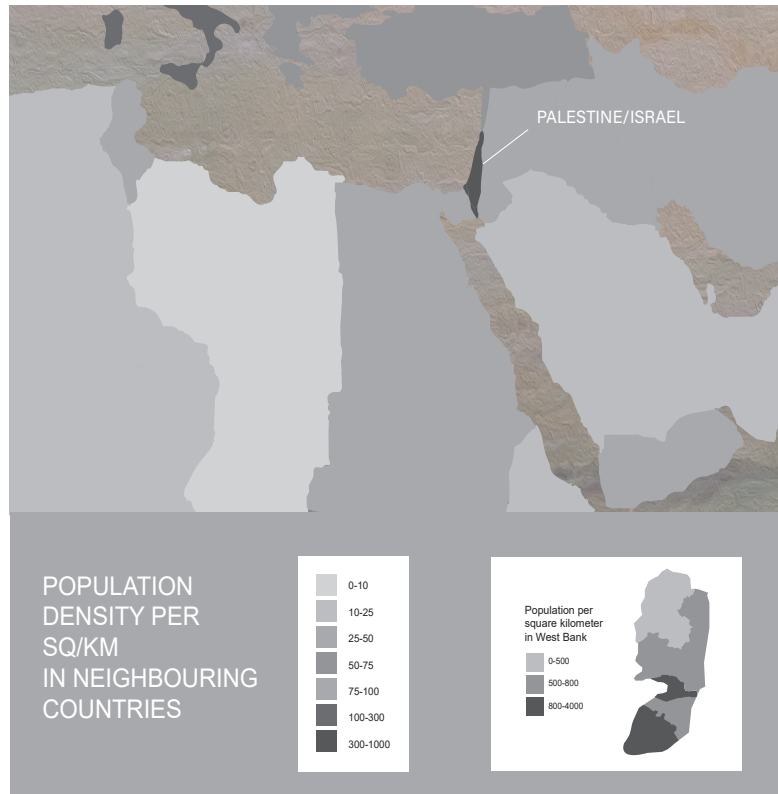


Figure 7: This diagram shows the population density of the Middle East and Mediterranean (Fanack Society 2020).

2.2.2 Materiality and Agriculture

Jenin and its surrounding is rich in Agriculture, and the richest in all of the west bank with olive trees, grapevines, almonds, figs, and citrus being the major types of fruit trees planted in Palestine. They occupy 90% of the total fruit tree area and produce 79% of total fruit production (Butterfield et al. 2000). As seen in Figure 9, the area with the highest agricultural value is located in Jenin, decreasing the farther South you go.

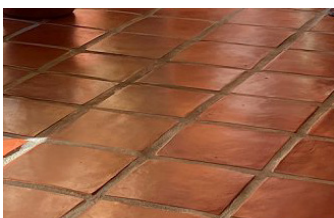
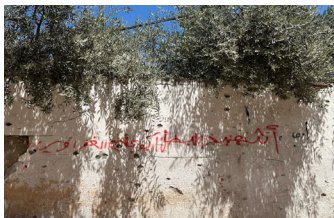


Figure 8: These are images of materiality commonly seen in Palestine such as limestone and red sand-dried clay. (Impression 2024; Ecologist 2024).



Figure 9: This diagram shows land classification of agricultural value in the West Bank Palestine. (Kittaneh 2018).

In relation to materiality and building, houses were most commonly constructed with dry stone and plastered together with a mixture of mud and ashes. The roof was sometimes constructed from branches or brushwood covered with mud or red clay tiles (Abuarkub 2017).

2.2.3 Palestinian Architecture

When talking about traditional architecture in Palestine, it is more typical to identify this architecture by the term “Palestinian Architecture” rather than by “Architecture in Palestine.” The second term refers to all architectural styles found in Palestine throughout the different historical periods, from Hellenic, Roman, Byzantine, Umayyad, Abbasid, Fatimid, Crusades, Mamluk, Ottoman, and the British Mandate until today (Ghadban 2008). These styles were commonly related to the architecture of the economic and political elite and the urban notables. The term “Palestinian Architecture” reflects vernacular architecture which has flourished for several centuries in urban and rural areas. It maintained its characteristics until World War I because of the social, economic, cultural, and religious factors that reflected the needs and living habits during that time and reflected the interaction between human beings and their environment (Ghadban 2008).

The traditional Palestinian architecture often features charming stone houses with flat roofs, arched doorways, and shaded courtyards. These designs are not only aesthetically pleasing but are also functional, providing relief from the harsh Mediterranean sun. Traditionally, construction in the West Bank and Gaza Strip consisted mainly of housing. It comprised generally the building of single-unit dwellings in both urban and rural areas alike. These units were frequently inhabited by extended families, resulting in relatively high occupation densities (AbdulHadi 1994). As an innovative response to the numerous challenges Palestinian architecture has faced (such as political conflict, occupation, and limited resources) architects and builders have incorporated sustainable practices, such as rainwater

harvesting and passive cooling systems, into their designs. The use of traditional building materials like limestone and mud bricks remains prevalent, connecting the present to the past (ARCH-GYAN 2024).



Image 10(a): Village Courtyard Home



Image 10(b): Samahan Palace



Image 10(c): Talamas House



Image 10(d): Agha Tuqan House



Image 10(e): House in El-Bireh City



Image 10(f): Bisan Company Office



Image 10(g): Building in Jerusalem



Image 10(h): Sakakini Cultural Center

Figure 10: These images are pictures of Palestinian Architecture in many old cities of Palestine showing its historical architectural features that are still interwoven in today's architecture in Palestine. The structures and design of these buildings provide inspiration for the design proposal as the features such as arches, large stones, pillars, and tiled roofs are aspects that this thesis will include in its final proposal (Ghadban 2008).

2.3 Recent Strikes on Jenin

On July 3rd of 2023, Israeli Armed forces launched a large-scale air and ground operation in the Jenin Refugee Camp at 1 am, and confrontations continued through to July 4th. After a damage assessment, 23 housing units were destroyed, 47 with severe damages, 800 units with minor to major damages, and 255 people displaced (Shamisti 2023).

On November 4th of 2023, Israeli Armed forces launched an attack within the refugee camp once more on a local religious building for prayer.

The strikes on Jenin are continuous, and most commonly aimed within the Jenin Refugee Camp. This causes a constant displacement of already displaced citizens. The refugee camp has suffered severe damage over many years. Many children live in this camp, and it would benefit them greatly to have a place to consider home or a sense of home alongside their long wait of transition.

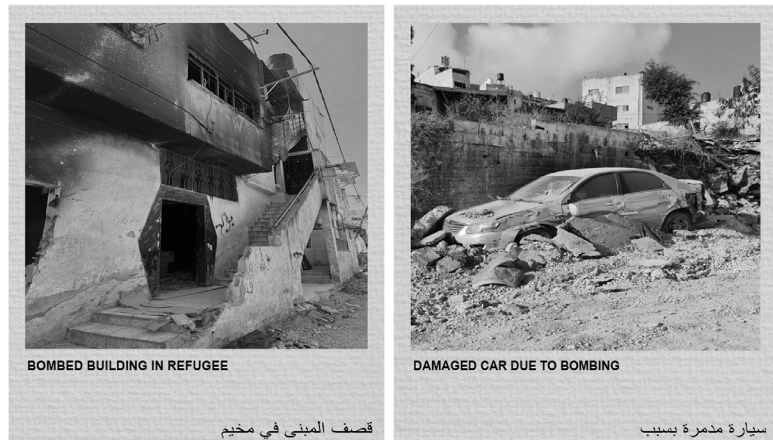


Figure 11: Above are images of Jenin Refugee Camp after most recent strike on civilians (Rustom 2023).

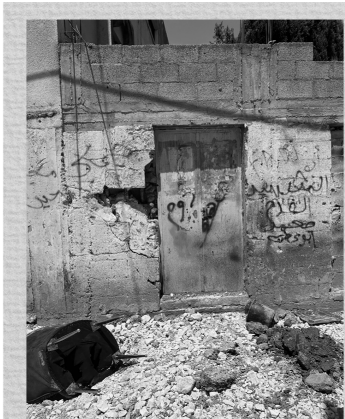


IMAGE OF STREET DESTRUCTION

صورة دمار الشوارع



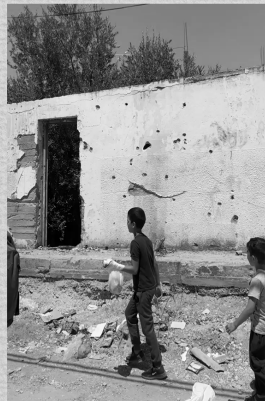
IMAGE OF STREET DESTRUCTION

صورة دمار الشوارع



IMAGE OF STREET DESTRUCTION

صورة دمار الشوارع



DAMAGED BUILDING

المبنى المتضرر



RAID IN JENIN REFUGEE CAMP

مداومة مخيم جنين للاجئين



IMAGE OF STREET DESTRUCTION

صورة لمدينة جنين

Figure 12: Above are images of Jenin Refugee Camp after most recent strike on civilians (Rustom 2023; Al Jazeera 2023).

2.4 The Jenin Resistance

2.4.1 Martyrs and Art Expression of Freedom

The word martyr is common amongst Palestinians, indicating someone who would die while protecting their country. They are highly cherished and respected as posters and memorials are hung around the city in honor and memory of them. They are the superheroes of Jenin as they died fighting against the Israeli military. From Figures 13 to 16, these are photographs captured in August of 2023 of a very minimal amount of martyr posters and monuments around city center Jenin, near the refugee camp.

In Jenin, the citizens use art through murals and graffiti to express their fight for freedom and resistance against the Israeli government. This can be seen throughout all Palestinian cities under occupation.



Figure 13: These photographs are of martyr gravestones and murals (Rustom 2023).



Figure 14: This photograph shows where famous reporter Shireen Abu Akleh was shot and later turned into a memorial site (Rustom 2023).

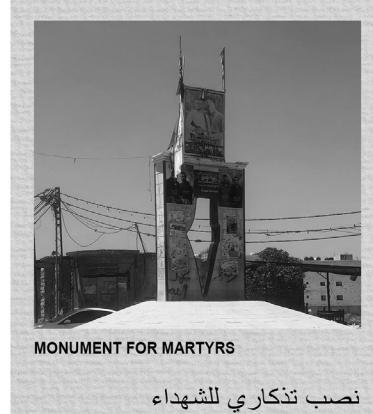
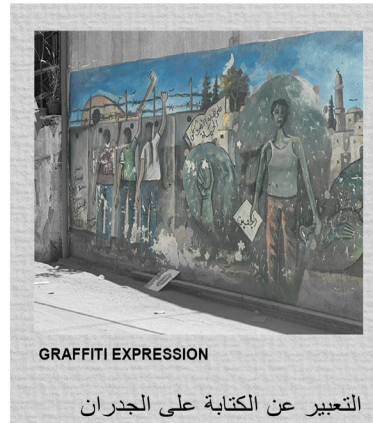
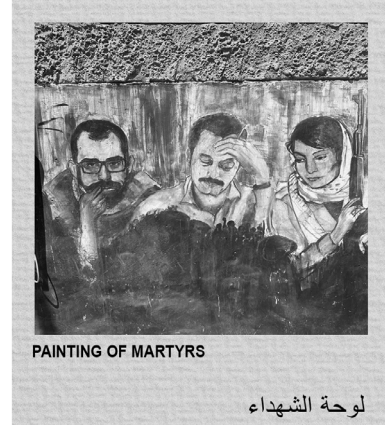
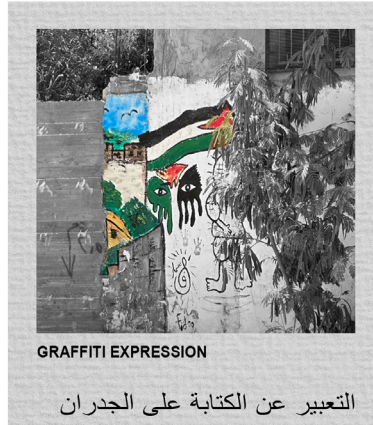


Figure 15: These photographs are of martyr gravestones, artwork, graffiti, and murals created by citizens in Jenin as a form of art speech and resistance (Rustom 2023).



Figure 16: The image above is a photograph of two children visiting the gravestone where their late relative rests after dying as a martyr (Rustom 2023).

2.5 Stolen Childhood

Children in Palestine have grown up in living conditions that include a continuous battle for freedom, where their existence is constantly at war, and their family and friends around them drop in numbers at quicker speeds than what the Western world is used to. Children grow up in fear and anger as they struggle to grasp a reality where they may yearn for a better childhood, or future for that matter. A commonly asked question for children is “What do you want to become when you are all grown up?”. Usually, the answer is predictable, such as a “doctor” or “firefighter”, but the children in Jenin come with very different answers. In an interview by Al Jazeera reporter, Virginia Pietromarchi, the children she spoke to

did not hesitate when asked what they aspired to be when they grew up. ‘Martyrs,’ they said in unison, referring to the term used by Palestinians to describe anyone killed by Israelis. When asked what they would like to become if they were not living under Israeli occupation, a shy silence settled in the tiny living room of an apartment in the Jenin refugee camp where the seven friends, aged 14 to 18, were gathered. They had no answer (Pietromarchi 2023).

Children grow up seeing many friends and adults that they look up to fall into fighting for their safety and end up becoming a martyr. It is not long until someone they know will have a picture and words of remembrance pinned up on the streets to pay respects. When living in such harsh situations, the dreams and aspirations of an exciting future eventually vanish from the eyes of these kids, and they begin to live on with the drive to fight for their home, and accept that they may become a martyr in the process.

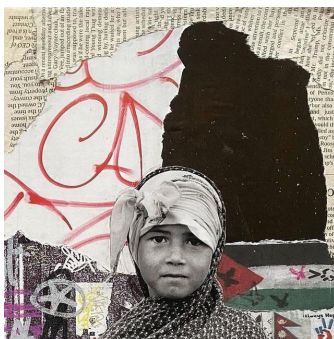


Figure 17: This image is a Collage Created by Raja Shazaad of Palestinian Genocide and Loss of Children.

The childhood many of us have where we are able to daydream, explore, play, and just simply grow like children is almost nonexistent as their attention is directed elsewhere.

This does not mean there is no chance of any other future existing for Jenin Children, however their priorities change due to war being all that is talked about in the community and media. Schools, community centers, theatres, and other recreational spaces exist within the community of Jenin, but the halls grow empty. We must pull these children back to the life they should be living. This all starts in school: figuring out how to nurture and protect their mindset, give them the tools to explore and dream, provide safety and protection as well as mental health programs, and show them that they can be so much more than martyrs or children of war. This can be done without sheltering and taking away all that they have suffered, but rather using it to empower them and lift them up; to learn to heal from the trauma, or mitigate new trauma and source that pain into something beneficial for their lives and future (UNICEF 2024).

As diagramed in Figures 18 to 20, in the West Bank there is a population of 3 million people, 40% of which are children below the age of 17. Due to this ongoing crisis, 3% of these children are orphans. In the West Bank, 90% of children have faced some form of physical or psychological abuse. 20% of children are in dire need of protection programs including psychological support. With the absence of good education and schooling, 45% of children lack literacy skills, while 40% of children drop out before reaching secondary school. 70% of children age 14 are out of school. This can have many factors, one being the loss of importance of school due to the life responsibilities and focus on war crime.

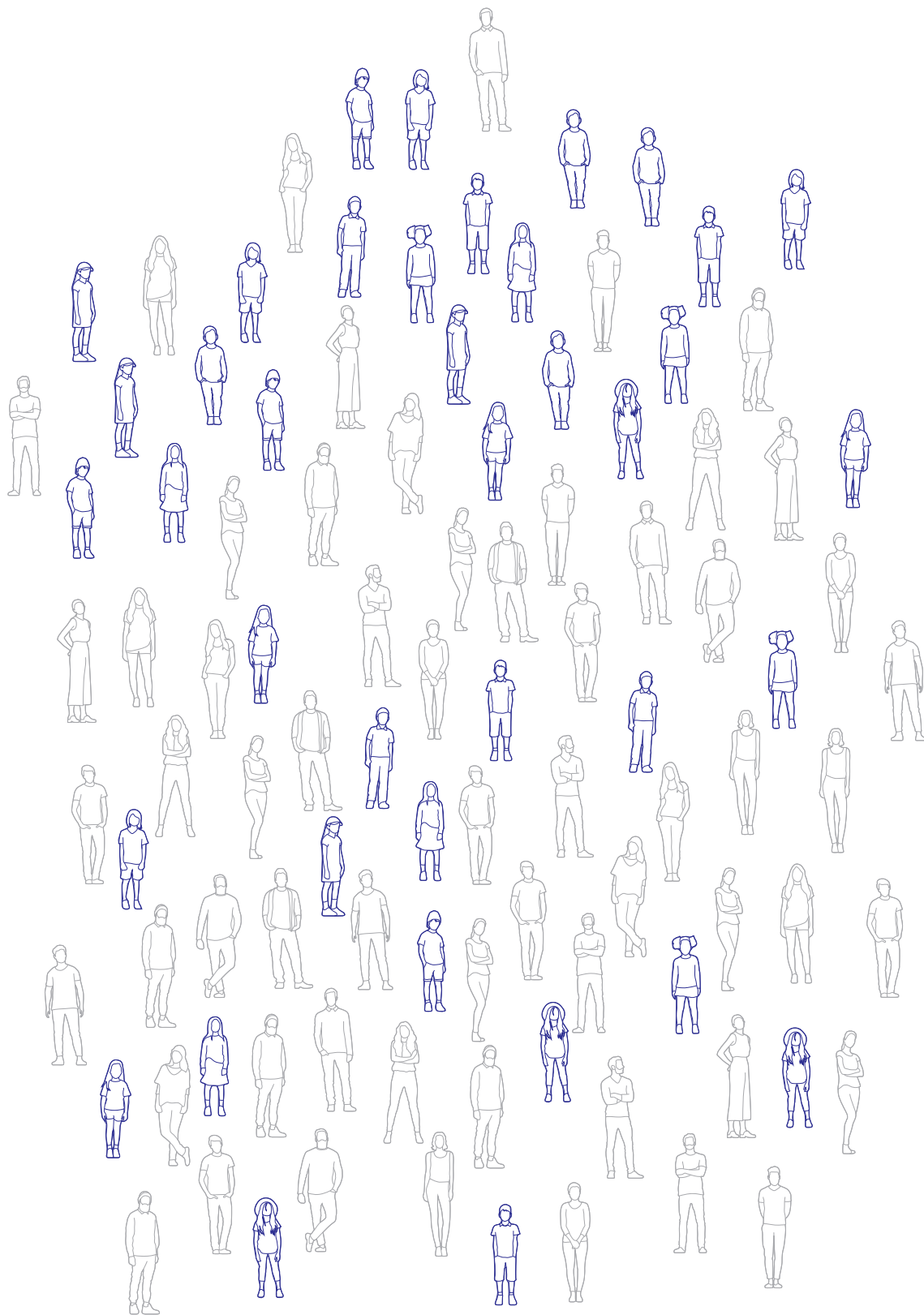
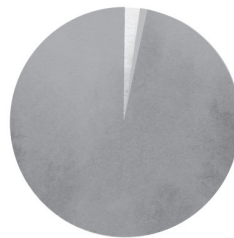
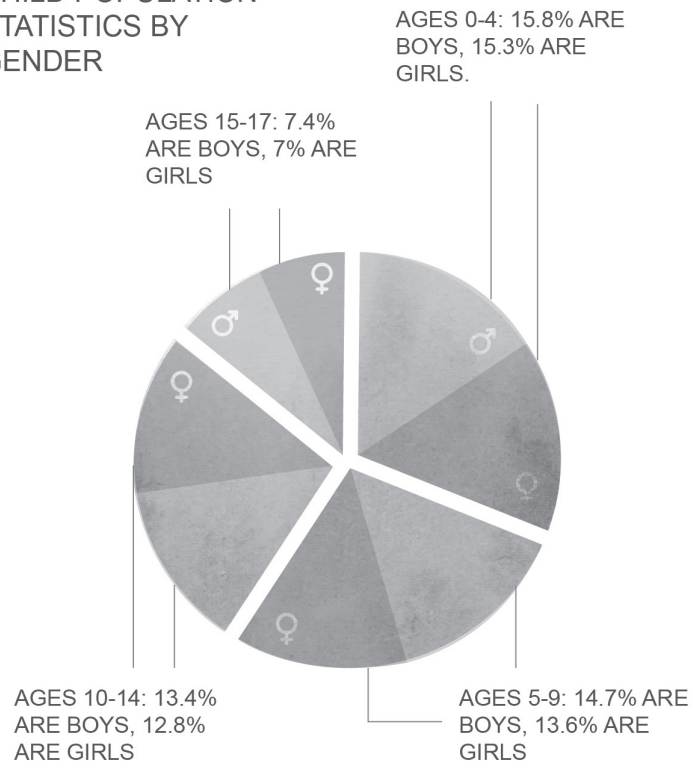
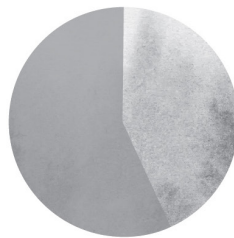


Figure 18: This diagram shows the population in West Bank of children and adults. There are 3 million with 39% (1.3M) being children below the age of 17 (UNICEF 2022).

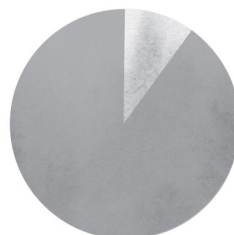
CHILD POPULATION
STATISTICS BY
GENDER



3% OF CHILDREN ARE ORPHANS (39K) WITHOUT BOTH PARENTS. 0.3% HAVE LOST ONE PARENT (4K)



45% OF CHILDREN AGE 17 AND BELOW IN THE WEST BANK LACK LITERACY AND NUMERACY SKILLS



90% OF CHILDREN AGE 17 AND BELOW WERE EXPOSED TO PHYSICAL AND/OR PSYCHOLOGICAL ABUSE

Figure 19: This diagram shows the percentage of boys and girls in population for children, the percentage of children without family care, the percentage of children exposed to abuse, and the percentage of children lacking educational skill sets (Awad, 2022).



2 OUT OF 10 CHILDREN ARE IN NEED OF PROTECTION PROGRAMS INCLUDING PSYCHOLOGICAL SUPPORT



4 OUT OF 10 CHILDREN DROP OUT OF SCHOOL BEFORE REACHING SECONDARY SCHOOL



7 OUT OF 10 CHILDREN BELOW THE AGE OF 14 ARE OUT OF SCHOOL IN THE WEST BANK



7 OF 10 CHILDREN OUT OF SCHOOL ARE BOYS



3 OF 10 CHILDREN OUT OF SCHOOL ARE GIRLS



4 OF 10 CHILDREN WITH DISABILITIES ARE OUT OF SCHOOL

Figure 20: This diagram displays the statistics about children and schooling (UNICEF 2022).

Chapter 3: Jenin Intervention

My site is located in the close outskirts of Jenin City. Jenin has a population of 40 thousand people, with 10 thousand in the Jenin refugee camp. “The Spring of Gardens” (as previously mentioned to be the meaning of Jenin from Arabic to English) will influence the name of the orphanage children’s village as a representation of those who will be given the opportunity to spring once again with a fruitful life and to succeed. Jenin serves as the administrative center of the Jenin Governorate of the State of Palestine and is a major center for the surrounding towns.

3.1 Why Jenin

Jenin has a large refugee camp of over 10 thousand people and a high population of children in need of help. As it is a city of resistance, there needs to be an open home for children and orphans in need of a safe space to help them come back to living in childhood. Jenin is the perfect working ground for this thesis to build its roots in, as its culture, environment, and people are a great starting point to make a difference in the lives of the next generation of Palestinian Children.



Figure 21: This is a photograph of a neighborhood near proposed site for this thesis’s design (Rustom 2023).

3.1.1 Words on Gaza

Concerning Gaza, given it is the area in Palestine facing the harshest living conditions due to the current genocide as stated by a United Nations Expert (Emma 2024) by the Israeli government in October 2023, it is deemed as an unideal location for new development in the coming future due to the aggressive bombing and destruction from the Israeli government. Gaza has Israeli-controlled borders that do not allow any movement, and there is tight control

on what enters and exits the strip, hence adding to any possibility of healing developments for the citizens being built there (The Hindu Data Team 2023). As unfortunate and disheartening as this sounds, this thesis will move forward in creating this healing development for children in Jenin, to provide as much help and nutriment as possible to those who are in need and we are capable of giving help to, as well as who are capable in receiving help. In doing so, we keep the children of Gaza in our thoughts and honor those who lost their childhood and their lives.

3.2 Site Analysis and Location

3.2.1 Site Analysis

Palestine varies in regions and climates, presenting the area with distinctive resources and rich land. Between the Jordan River and the Mediterranean Sea, the land has proved fertile for agriculture while underneath flows water sources. The contribution of ancient Palestine to the agricultural evolution in the Fertile Crescent testifies to how vital these resources were for the development of regional societies in Palestine. The region is dominated by the Israeli occupation of Palestine which has left a lasting impact on people, their way of living, and their environment. This conflict serves to compound the challenges of scarce and inaccessible resources, their continuous degradation, and increasing demand from a rapidly growing population. Global climate change is expected to continue to place further stress on these resources. Efforts to address this critical situation are urgently needed but economic vulnerability, institutional weakness, and continuous unrest inhibit Palestinians from accomplishing their goals (Sinclair and Hassouna 2012).



Figure 22: This map displays Jenin city within Jenin State outlined in blue.

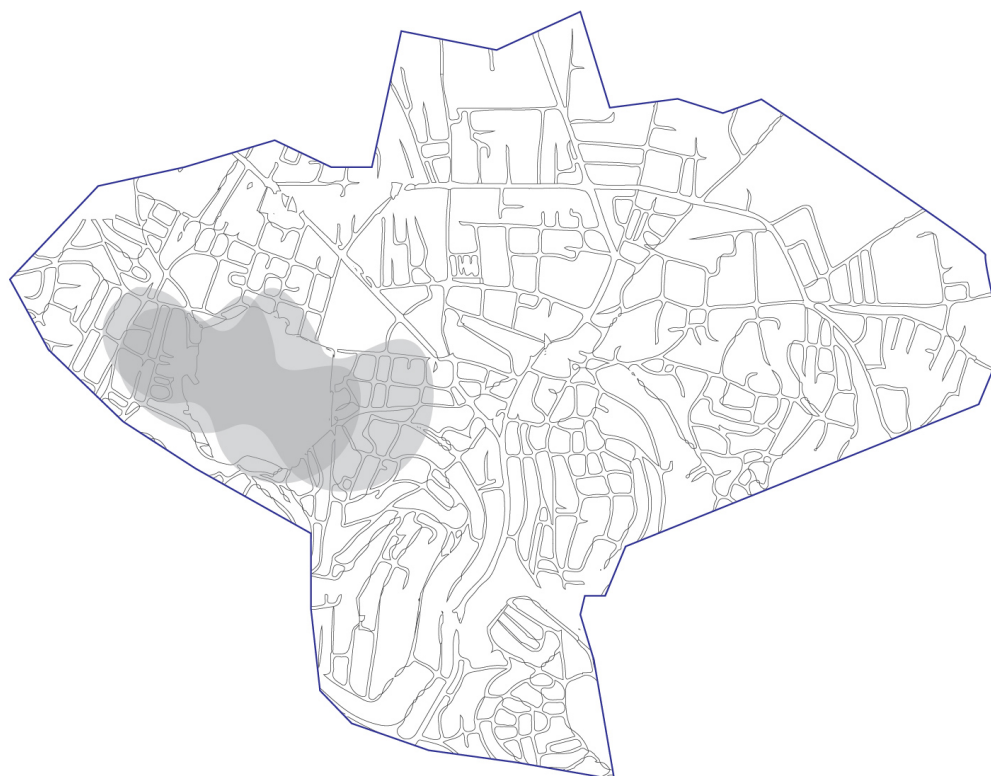


Figure 23: This map displays Jenin city showing areas where recent strikes have taken place.

In Figure 24, a site analysis of the city was completed in order to give a better understanding of where surrounding buildings are situated and what programs they hold as well as who they facilitate. This study was conducted to move forward with selecting the most suitable site for this thesis' program. Factors that were considered were distance to nearby hospitals, schools, parks, and the city center in regards to providing a suitable walking distance to these places. The land type and zones were considered as well, with the aim of placing the facility near farmlands for the nature and gardening/farming aspect of the program, as well as near suburbs and neighborhoods for the practicality of where children and families are closest to. A big factor to keep in mind as well was the distance from the Jenin Refugee Camp. This is because of the danger inflicted upon the camp due to the Israeli Defence Force continuing to bomb and raid the area. The aim is to keep the facility at a safe enough distance, where raids typically do not happen, while still considering distance for children who may be living in the refugee camp and would like to attend this facility. Taking all these factors into account, the most suitable location was the North/West corner of Jenin beside farmlands and residential neighborhoods. The site is roughly half a kilometer from a nearby hospital clinic and less than a kilometer away from two schools and a park. At the same time, it maintains a distance of 3.5km from the Jenin Refugee Camp and 2.8km from the city center.

3.2.2 Site Location

The site this thesis will be conducted on is a large plot of land on the border of the city of Jenin. It is located between the city and rural outskirts. The defense for this site chosen stems from many important factors. Firstly, the most recent

strikes in the past decade have been compacted within the Jenin refugee camp in the southwest part of the city, branching to some surrounding streets and important buildings. The program is situated in an area that is 3km away from the city center, and 2km away from the refugee camp. This allows for a comfortable safe distance if there were any new occurrences of strikes, as well as being a walking distance from the city and less than 1km walking distance to hospitals, nearby schools, and farmland.



Figure 24: This map is a site analysis of Jenin facilities, roads, and water sources.

Chapter 4: Theory to Practice

4.1 Delving into the Mind First

Before we look into theory, we need to understand the way our brain works when facing trauma, as well as if and how we can mitigate the effects it has with architecture.

4.1.1 How Does the Brain React to Trauma?

Looking into *Calming Trauma: The Brain and The Limbic System*, the author discusses how the front part of our brain, known as the prefrontal cortex, is the rational part where consciousness lives, processing and reasoning occurs, and we make meaning of language. When a trauma occurs, people enter into a fight, flight, or freeze state, which can result in the prefrontal cortex shutting down. The brain becomes somewhat disorganized and overwhelmed because of the trauma, while the body goes into survival mode and shuts down the higher reasoning and language structures of the brain. The result of the metabolic shutdown is a profound imprinted stress response (McClelland and Gilyard 2019). This information is important to take into account when moving forward with the development of this thesis's design, as the spatial qualities and characteristics will have a great impact on its inhabitants' brain reactions. For a child with a complex trauma history, reminders of various traumatic events may be everywhere in the environment. It is important to take into account triggering aspects of trauma that may be perceived visually and work around it. An example of this could be the view of a destroyed building visible from the window where children play. A child who suffered trauma from the destruction of their home could notice the framed view and trigger a reaction from a bad memory. To mitigate

this, the need to control each window's view in such a space is important so that rather than living in an old negative memory, each view can create a new positive one tied to the activity and program taking place.

Looking further into how children who have experienced complex trauma often have difficulty identifying, expressing, and managing emotions, and also struggle with having limited language to express these feelings. They often internalize it leading to loneliness and depression, or externalize it through stress reactions such as anxiety, outbursts, or anger. Their emotional responses may be unpredictable or explosive. A child may react to a reminder of a traumatic event with trembling, anger, sadness, or avoidance (The National Child Trauma Stress Network 2023).

4.1.2 Trauma-informed Architecture

Trauma-informed architecture is when a design acknowledges the emotional power of the built environment, and by following its principles, designers can create spaces that better serve occupants. Although the approach is associated with projects that cater to vulnerable populations, these principles can work in any setting (Medd and Nicholson 2023; Guhl 2022). Biophilic design is an example of architecture catered to trauma. It incorporates natural materials, natural light, vegetation, nature views, and other experiences of the natural world. Biophilia is an evidence-based method of reducing stress and promoting a sense of organic comfort and calm (Medd and Nicholson 2023; JLG Architects 2023). With this research, this thesis' design incorporates the understanding and response of trauma-informed architecture to provide a safe space for its occupants who are mainly children. In doing so,

methodologies like nature and gardens are incorporated to bring a sense of organic comfort and connectivity with the earth and environment around you. More detail on nature and gardens as a methodology will be covered in the following subchapter.

4.2 Designing Healing and Therapeutic Spaces in Schools

In *What About Me* by Louise Bomber, she discusses the importance of being aware that open-plan formats are not that helpful for certain pupils. She believed that we should

recognize how that kind of arrangement might be experienced by someone who has little or no trust, is suspicious of others' intentions, doesn't believe confidentiality exists and needs to constantly check out where the threat might be coming from. What we're trying to do is communicate safety, security, and stability; so let's be sensitive to the need for spaces that convey those feelings (Bomber 2011).

Considering how Bomber's values of 'safety, security and stability' might be communicated to children in and by these spaces with the aim of maximizing the therapeutic benefit to the children who spend time in them, author Emma Dyer created a list of qualities that could enhance this space.

Privacy

'Visual seclusion' is important in the context of therapeutic spaces, an example could be talking about one's deepest feelings in a public space; this is liable to make anyone feel self-conscious or uncomfortable. Children are no less likely to feel a sense of shame or embarrassment than adults, even if they don't have the vocabulary or confidence to express this to an adult. The current situation and weight of culture that is held over comfortable spaces for communication requires focus in Palestinian schools. Emma Dyer has conducted a study with many schools researching that an enclosed room,



Figure 25: This is an image of a Fawood Children's Center in London, UK from the book *Child Friendly Spaces* by Scott (2010). This design exemplifies privacy with transparency.

preferably a frosted glass window with walls was deemed a safe space for children to communicate in without feeling like a fish in a fishbowl being looked at to be protected from the gaze of others (Dyer 2020). Referencing Bachelard's evocation of the nest, architect Herman Hertzberger, who has been associated with school design throughout his long career, promotes the idea of a 'safe nest' in schools (Dyer 2020, 35). Taking the protective qualities of the nest a step further, he extends the metaphor to that of a baby kangaroo in a pouch. Proximity to a trusted adult is one key feature of a safe space but a vantage point from which to look out is also a valuable one when considering the design of that space. "Like the baby kangaroo in its pouch, the child can scan the boundaries of the space without being seen. A window that looks out onto a vista of trees or natural outdoor space can be very calming for children" (Dyer 2020). 'Auditory seclusion' is also deemed beneficial in the context of creating a therapeutic space. Many children between the ages of 8 and 17 do not want to be overheard being upset or expressing their feelings loudly even when they cannot be seen. If the walls of the therapeutic room are very thin or the room itself is near other, busy rooms, both child and adult may be aware that their voices can be heard and this may inhibit their work together. Similarly, loud noises from outside the space might also disturb and distract so, again, the location of the space is important (eg: children are less likely to be concerned about being overheard if they can't hear loud noises from outside their room) (Dyer 2020).

Comfort

Comfort withholds a variety of elements such as freedom of movement in a less restrictive context than the classroom; a choice of furniture (or cushions and soft rugs on the floor)

to sit on and a sense that there is no hurry in this welcoming space and that the teacher has time to listen. A sense of comfort also includes a thoughtfulness about the sensory stimuli and environmental conditions in the room itself. The architect Mary Medd (1907-2005) observed how very young children, left to their own devices in a comfortable space, often enjoy freedom of movement, stretching out or curling up as needed (Medd 1976). By allowing the children to choose how and where they may take space, they may feel that they have a sense of choice about how they express themselves, both physically and emotionally.

The comfort provided in therapeutic spaces might helpfully stand in stark contrast to the hierarchy of comfort in the classroom, with the teacher at the top of the pyramid portraying the role of a parent or family (Kenkmann 2011). In infant and primary school classrooms, children are often placed in a particular position on a rug or carpet area or at a desk (Harden 2012; McCarter and Woolner 2011) while the teacher is free to walk around unimpeded. This confinement and sense of restriction can be particularly oppressive for young children when they are feeling vulnerable to difficult feelings. Reversing this hierarchy in the therapeutic space can bring a more homely feel to the room because homes, unlike classrooms, usually offer a choice of furniture and places to settle comfortably. In successful therapeutic spaces, children are able to rest and relax while they explore their emotions.

The environment a child is in for the majority of their day has a large impact on children's sense of well-being. An example of this is the consideration of temperature, or the glare of strong light when it is unwanted, and how we can regulate these factors. The thoughtful design of the therapeutic

space, paying attention to sensory stimuli, could make all the difference to a child who is struggling to label and manage their emotions. As they become more adept at this, they may be able to transfer this ability to less hospitable environments in the school.

Access for All

For the existence of a healing safe space to be most effective, it needs to extend a sense of welcome to all its possible inhabitants. For this to be accomplished without compromising a sense of privacy, a warm and evolving whole-school understanding of the room's function as a supportive space needs to be shared and nurtured. Ease of access must be considered in terms of all members of the school, including children with special educational needs, autism or ADHD, and physical disabilities. With 4 out of 10 children out of school in West Bank Palestine being those of whom has disabilities, this is due to the lack of care and opportunity schools give in helping prioritize children with disabilities; hence this 'comfort for all' is deemed of high importance (UNICEF 2022).

To make this safe room that is 'welcome for all' possible for a child, it may take place in a metaphorical threshold, which could simply be a 'safe emergency room', where a child who may go into a non-verbal state due to a stressful situation or a disability, they can point to a room, or request to be taken there to have a mental break. The idea of this room existing at the quick reach for a child's hands can itself lead to reassuring safe thoughts that they are in good hands and will ultimately be OK.

Child Friendly Spaces

Moving forward from privacy, comfort, and access to all, creating child-friendly spaces for children affected by emergencies is of high importance in a situation like Jenin's. A child-friendly space looks different depending on the context. It could be a tent, a secluded area under the shade of a tree, or a room designated for this purpose. It can be a range of spaces as long as it is safe and accessible to children of different ages, sexes, and abilities. These spaces offer a range of activities for children of various age groups such as games, sports, singing, drama, structured play, arts and crafts, and resilience/life skills. These activities can provide a different education that is not as formal to activate learning for children whose education was disrupted by crises. This is also a good 'drawing back in' educational tool to help those who are having a hard time coming back to school. Children are encouraged to take part in activities such as creative play, group discussions, and story-telling that allow them to express their feelings and explore any problems they might be having. Often children experience fear, grief, loss, and uncertainty during a crisis or displacement and these activities provide a safe space where they can process their experiences (Plan International 2023).

4.3 Case Studies

Privacy

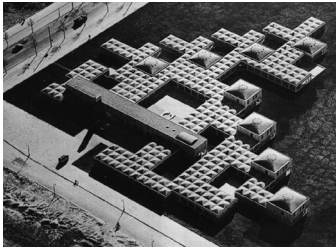


Figure 26: This image is an axonometric shot of the Amsterdam Orphanage by Aldo van Eyck (ArchEyes 2023).



Figure 27: This image is a still shot of the Amsterdam Orphanage by Aldo van Eyck (ArchEyes 2023).

The Amsterdam Orphanage, designed by Aldo van Eyck, is a project that goes beyond its function as a shelter for children. It is also a profound statement on urbanism, humanism, and architectural theory. Van Eyck designed the orphanage to translate his humanistic theories into built form. The Orphanage was intended as both a home for children and a “small city,” embodying van Eyck’s notion that a house must be like a small city if it’s to be a real house, a city like a large house if it’s to be a real city. While being a home like a village, it does this with the extent of privacy that it provides. The arrangement of his design results in an equal number of negative and positive spaces, enhancing the fluidity between the building’s diverse functions. These spaces provide each living space with its own courtyard/play area for the children (ArchEyes 2023). This case study exemplifies an idea of providing children with private spaces or optional privacy while maintaining a sense of transparency with nature and their surroundings.

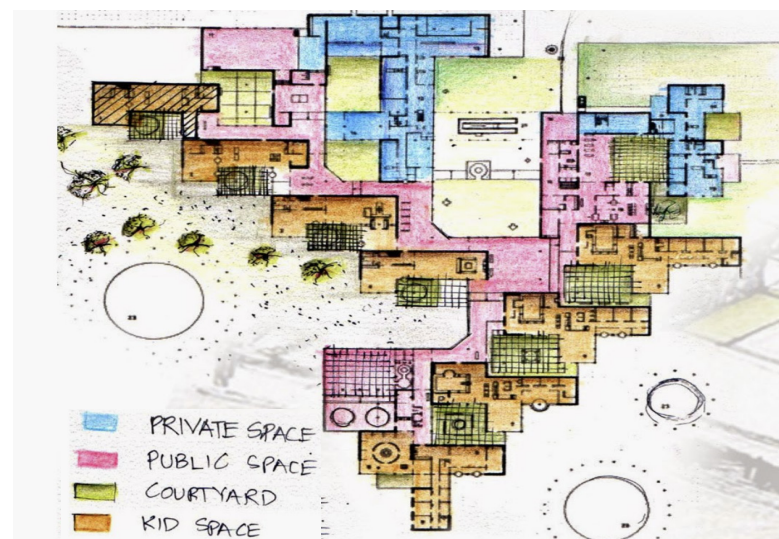


Figure 28: This image is a program and space division study by Archinter of the Amsterdam Orphanage by Aldo van Eyck.

Comfort

The Habitat for Orphan Girls by ZAV Architects (Shafiei 2018), Iran is a girls' orphanage that gives vulnerable children a safe and culturally sensitive environment to grow up in. The architect explained that 'By advancing an alternative, we hope that this can be a future prototype for new forms of domesticity', Ghodousi explains, adding, 'and more broadly, new ways of thinking about family.' Harnessing the principle of introversion, the architects built nontransparent walls surrounding the perimeter. The building's walled courtyard, which includes a playground, allows the girls to feel the natural sunlight on their skin without the interference of interlopers. Another nod to the vernacular is the shallow pool in the courtyard. In the vernacular, the pool is placed in a garden of trees, herbs, and plants, which holds cosmic symbolism in the Iranian cultural imagination. The architects included some sparse vegetation in the garden, restrained by the limited space, though it has grown a little since the house was first built. The courtyard pool reflects the sky, adding a contemplative, spiritual dimension. The children love this area and try to spend as much time as they can here, playing in the water to escape the summer heat. The visual privacy offered by this sense of enclosure in a typical Persian house creates a strong sense of solidarity among family members. You certainly feel this at the Habitat for



Figure 29: The Habitat for Orphan Girls by ZAV Architects. Exterior photograph and atmospheric section (Shafiei 2018).

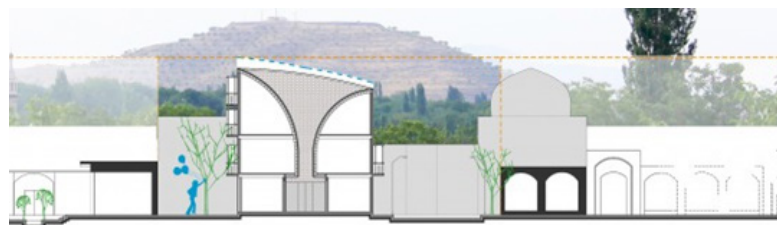


Figure 30: This is a section cut of the Habitat for Orphan Girls by ZAV Architects. This image displays the exterior photograph and atmospheric section (Shafiei 2018).

Orphan Girls, as the girls readily refer to one another as family and show displays of affection for their peers and their director. 'Everyone deserves a house with dignity, and these girls, who don't have a family to rely on, deserve it more than anyone else,' says Ghodousi. This case study is very beneficial to my thesis as Ghodousi designed an orphanage of protection for these girls, while still enabling them to grow, explore, and build a family.

Access for All

For children to feel comfortable in expressing themselves, having an element of fantasy, and openness to discuss anything is great to activate a safe space. The Freedom Theatre Jenin located in Jenin has a programme that consists of activities that introduce the young generation to theatre and drama, providing them with important tools for dealing with the hardships of daily life under occupation.



Figure 31: This image is of art work in The Freedom Theatre (Rustom 2023).



Figure 32: These are old photographs of Jenin in the Freedom Theatre (Rustom 2023).



Figure 33: This image shows the lobby entrance of the Freedom Theatre (Rustom 2023).

The Freedom Theatre stages original theatre productions that reflect, comment upon, and challenge the realities of contemporary Palestinian society. This theatre takes place as a safe space/environment for young adults and youth/children to go there, learn about taboo subjects, and feel comfort in expressing themselves.



Figure 34: These photographs are taken of the interior theatre space inside the Freedom Theatre (Rustom 2023).

Village and Playful Integration



Figure 35: These images show the layout plan and two perspective shots of the SOS Children's Village by Jafar Tukan.

The "SOS Children's Village" by Jafar Tukan and Partner is a complex for orphaned children located in the residential outskirts of the city of Aqaba, on the Red Sea. The architecture represents a modern interpretation of local vernacular stone buildings. The scale of the village is dictated by its environmentally sensitive design, and also relates to its intimate urban setting. The facility holds eight family houses, a staff house, an administration building, a guest house, and the village director's residence. All are planned around a village square and are connected via pedestrian paths, gardens, and alleyways. Vaulted archways lead to shaded courts, and gardens surround the buildings. Facilities that are shared with the local community, namely a kindergarten, a supermarket, a pharmacy, and a sports hall, are located at the southern border of the site, close to the main road. This project is a great reference for this thesis design due to culture, traditions, climate, and location similarities. Jordan is a neighboring country to Palestine and has very similar if not identical traditions and environment. Materiality is also a great source for this project, as they use local materials that can be found and used in Palestine.

"Francis Kéré Lycée Schorge Secondary School" located in Burkina Faso provides a source of inspiration by showcasing locally sourced building materials in an innovative and modern way. The design for the school consists of 9 modules that accommodate a series of classrooms and administration rooms. This case study interests me on the design concept aspect, where I can derive some ideas that Kéré implicated in his school design, such as the transparent fabric system of wooden screens that is made of eucalyptus wood and

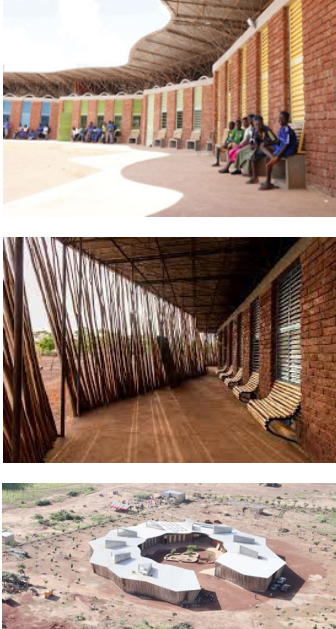


Figure 36: These images show perspective shots of Schorge Secondary School by Francis Kere Lycee Architects.



Figure 37: This is an image of Carson Valley School in Philadelphia (Contosta 1997).

acts as a shading element for the spaces immediately surrounding the classrooms. The screens not only function to protect the earthen classrooms from corroding dust and winds, they also help to create a series of secondary informal gathering spaces for the students as they wait to attend their classes. Another design element I can draw inspiration from is the layout of the program where he created a sort of autonomous 'village' condition, the radial layout of the classroom modules is wrapped around a central public courtyard. This configuration not only creates privacy from the main public domain, it also shelters and protects the inner courtyard from wind and dust, and allows for the students to feel a part of a community in this space. A few more themes that fit well with this thesis's design is the resemblance in climate. This design has a massive undulating ceiling which helps naturally ventilate and illuminate the interiors. The wave-like pattern of plaster and concrete components are slightly offset from each other, allowing the interior space to breathe and expel hot stagnant air.

The "Carson Valley School" for girls in Philadelphia is a progressive orphanage that has been standing for more than seventy-five years. The Carson Valley School has served the needs of orphaned girls and other dependent children from Philadelphia and neighboring Pennsylvania counties. Its hundred-acre campus is remarkable for its rolling terrain, neo-medieval buildings, and design as a fantasy village. The green nature and village layout is a theme that can be seen in many successful orphanage schools, and will be brought forward into this thesis design.

4.4 Design Methodologies

Looking at science, psychology, architecture, and humanities, you can create a healing environment that may impact people's physical and psychological behavior. From a scientific point of view of healing, Dr. Sternberg mentions multiple architects like Aalto and Neutra who argue for the health benefits of well-planned architecture and the significance of nature and natural views in health and healing (Sternberg 2010, 49). For instance, controlled positive views from large windows can bring distraction and relief, allowing people to step into a meditation space. Sternberg describes it as a portal that provides an escape from a disease's frightening, painful reality or a way of accessing memories of a better time and place. In research done by Reese Rowland (2015), he talks about how Children need a space with fresh air, natural light, enjoyable spaces and the importance of place is great as it shapes every decision, our decisions now, and for the future, and where we will go, and it impacts the next generation as well. In this thesis, the trauma children need to heal from can be interpreted as the daily struggles and fights in their wounded city. Jenin's streets are filled with concrete rubbles from the destroyed buildings which creates a traumatic scene that can trigger the brain's emotional centers. This trigger is an example of the mind-body connection. It assumes that physical places can either set the mind at ease and contribute to its well-being or trigger negative emotions that might foster illness (Sternberg 2010, 104). A little farther out of the city, we have vast farmlands and a lot of flourishing agricultural spaces. These spaces can help benefit the healing idea of this thesis. The architecture in Jenin lacks differentiation between spaces like shopping malls, restaurants, hotels,

and a lack between most schools, hospitals, and apartment buildings. From these struggles arise the methods that aim to heal the trauma inflicted upon the children. A focus and intense integration of nature as a form of therapy, creating a sense of community and home designing therapeutic spatial qualities, and programming art therapy into the child's week will be the methodologies moving forward in creating a safe healing space for children in order to rekindle their childhood.

4.4.1 Nature Therapy

The most frequently mentioned dimension across many studies figuring out what is the strongest design quality for healing and safe spaces was gardens. Connection to nature is seen to have a buffering relationship between life stressors and psychological distress and also between life stressors and self-worth (Gaminiesfahani, Lozanovska, and Tucker 2020). Having access to nature directly, through

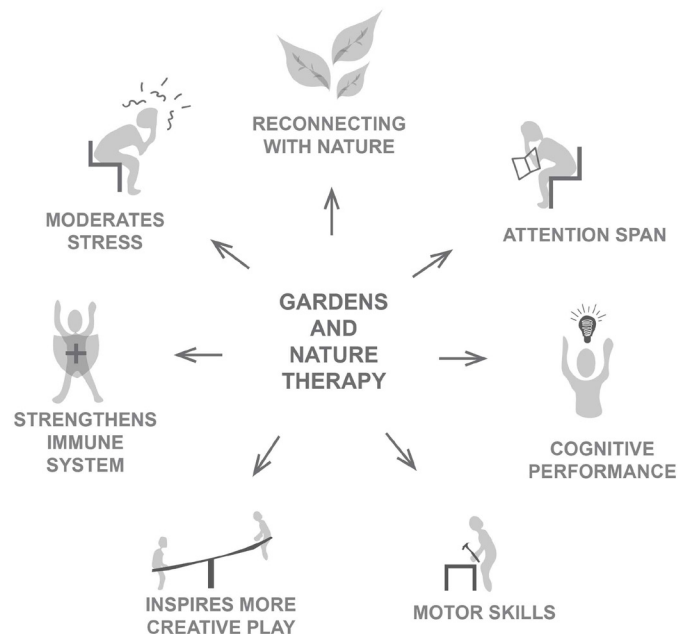


Figure 38: This diagram for 'Gardens and Nature Therapy' methodology depicts the benefits a successfully designed space will provide for the children who will partake in this facility.



Figure 39: In these Photographs taken by Simon Luethi, nature imbedded within a space is shown.

gardens or even pictures and/or virtual reality simulating nature, has a positive effect on both physical and affective measures including pain reduction, stress reduction, enhanced social functioning, and a much better sense of control in healthcare environments (Biddiss et al. 2013; Pearson et al. 2019; Reeve, Nieberler-Walker, and Desha 2017; Sherman, Shepley, and Varni 2005; Sherman et al. 2005). Nature therapy will be a strong driving factor for this thesis as studies show it has an intense positive impact on the mind and for healing.

Healing Gardens

Views on gardens as well as the practice of planting are some of the most common positive distractions in healthcare environments. Thus,

the exposure to natural elements such as nature-filled windows, water, and landscape paintings of photographs may promote positive feelings while also reducing negative emotions such as fears and other negative insecurities (Pearson et al. 2019, 117).

As room windows are the most common way people are exposed to natural elements, nature-filled views have more restorative qualities than views without nature (Tse et al. 2002; Ulrich 1984; Whitehouse et al. 2001). The integration of nature, farming, and/or gardens within a space/program is a design characteristic I will incorporate in this thesis outcome, similar to what Kevin Roche had done in the Ford Foundation in New York. He implicates an aspect of nature inside an atrium arrayed with natural light.

4.4.2 Sense of Community and Home

Architecture of Belonging

For an orphanage school to be successful in terms of offering a child the closest thing to how we define a fulfilled

childhood, we need to eradicate the sense of crippling loneliness, fear, and lack of belonging, as well as so many more psychological and physical harm that comes with losing family, abandonment, abuse, and in Jenin's case, war crime trauma.



Figure 40: This diagram for 'Sense of Community and Home' methodology depicts the benefits a successfully designed space will give for the children who will partake in this facility.

An Architecture of Belonging by Sandy Yeung (2009) studies the potential of making settling in a new space/home easier by proposing an architecture of belonging. The goal is to create a welcoming place that supports both a robust communal life and responds to everyday needs. The positive momentum of inclusive community building further fosters a strong neighborly bond among residents of all cultures and beliefs. This reading shares themes of creating a space of belonging in the light of a children's facility. Community involvement such as recreational sports, interactions with other schools, field trips, and volunteering

outside of the facility are great examples of how to achieve this. Creating a sense of home for children who will be living on and off the campus of this facility is very important, as it brings important comfort and safety to the minds of the children, which allows more opportunity for trust, healing, and desire of activity involvement and education.

The Palestinian Household

One of the methods of creating a sense of home and belonging in a place is by introducing traditional and cultural homes that are common in Palestinian households. In doing so, whatever is taken from the usual layout and style will evoke feelings of home for those who experience such places. It can become a heart to a certain extent, for example replicating the characteristics of a Palestinian dining space where family gathers to eat and converse. This becomes an intimate moment between home and school when involved in this facility. The traditional Palestinian household is known for its sense of “rootedness” and “unmediated connectedness” which characterizes Palestinian Arab vernacular architecture. This was also admired by Yoram Segal in his essay on *The Traditional House in the Arab Villages of the Galilee*, published in the Israeli journal *Tvai*. Describing the relationship of the 'fellah' to his house, which he builds and maintains with his own hands, Segal places emphasis on the sense “of belonging, of identification, and of strong emotional attachment.” Palestinian homes take place in a village setting which this thesis’ design takes after, just like the SOS Children’s Village by Jafar Tukan. The Palestinian house was divided into two areas: a lower level known as qa’ al-bayt near or at the entrance of the home and an elevated area known as the mastaba used for living and eating. The size and uses of the lower level varies

from house to house. In some cases, it was a small area near the door, only 10-15 centimeters lower than the rest of the floor where visitors would take off their shoes before entering the house. In other cases,

it would be a large area housing animals with an elevated gallery that allowed for use of the space below with the space above used for storage. They had a farm on their roof because vegetables were cheap and easy and they cooked outside to let the heat out (Grabar and Necipoğlu 1998).

In Edward Hall's book *The Hidden Dimension* (1966), an examination of various cultural concepts of space and how differences among them affect modern society is conducted. Introducing the science of "proxemics," Hall demonstrates how man's use of space can affect personal relations, cross cultural exchanges, and architecture. This is important to keep in mind as it is a concept that can greatly affect the comfort of how a culture operates within a space. This concept can be seen through program layout, such as the integration of a Palestinian household layout, and how it will affect the inhabitants.

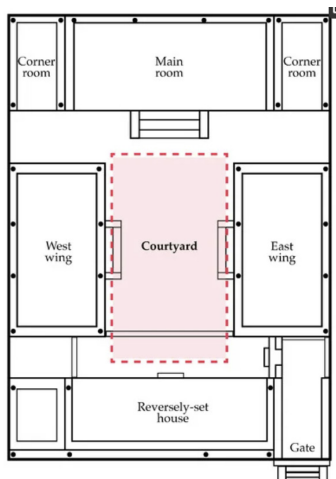


Image 41(a): Floor plan layout of Palestinian home (Rong 2023).



Image 41(b): Courtyard spaces in sandstone houses located in Gaza. Image source vicbethlehem.

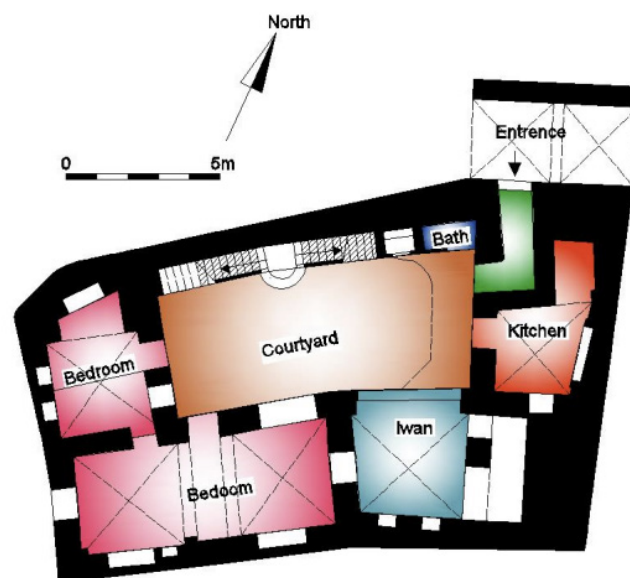


Image 41(c): Floor plan layout of Palestinian home (Muhaisen 2016).

Figure 41: The diagrams above shows the floor plan layout of a traditional Palestinian home.

4.4.3 Therapeutic Spatial Qualities for Children

Light and Colour

Light is not only critical to seeing things and performing activities, but it is also important because it affects human beings psychologically and physiologically (Joseph 2006, 2). Light impacts human health and performance by controlling the body's circadian system, which regulates feelings of sleepiness and wakefulness over a 24-hour period (Gaminiesfahani et al. 2020, 107). Bright, natural light has been found to reduce depression, improve sleep, decrease the length of stays in healthcare facilities, and reduce pain medication costs (Ulrich et al. 2004; Channon 2019). In a study by Sherman Shepley et al. (2005) children who were more exposed to light were more satisfied than others, whilst natural light was found to reduce stress, pain, and improve children's sleep status.



Figure 42: This are images of the Sparkletots Preschool By PAP Community Foundation / LAUD Architects.

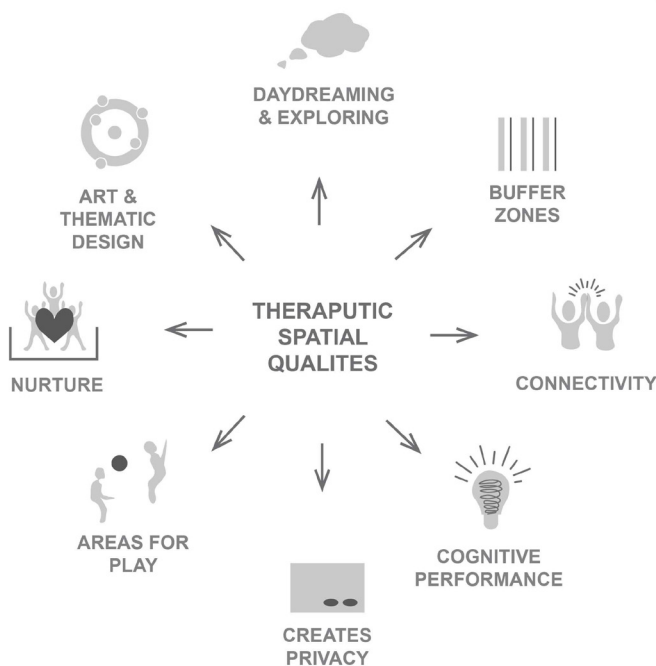


Figure 43: This diagram for 'Therapeutic Spatial Qualities' methodology depicts the benefits a successfully designed space will provide for the children who will partake in this facility.

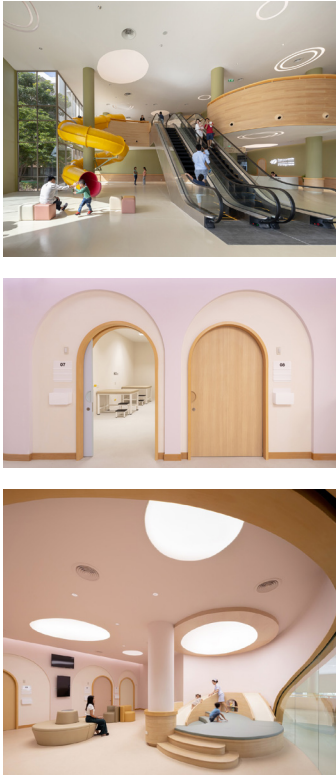


Figure 44: These are images of the EKH Children Hospital by IF Architects of interior waiting spaces.

Color of the environment may increase calmness, relieve pain, reduce negative emotions, and increase the sense of comfort. According to Ulrich, positive environmental stimulation, including through the use of color, can promote patient well-being by reducing stress or negative feelings (Park 2009, 6). The study by Boyatzis and Varghese (1994), which explored the association of color and emotion, indicated that bright colors increase children's positive emotions while dark colors are associated with negative emotions. It was demonstrated that the most preferred colors among healthy children and pediatric patients are blue and green, and that girls preferred red and purple more than boys do. Both pediatric outpatients and inpatients groups, as well as healthy children, have similar color preference patterns, except for yellow which was preferred by healthy children more than by both pediatric outpatients and inpatients (Park 2009).

Play and Distraction

Positive distractions are linked to stress reduction in healthcare settings. Such distractions are identified as "environmental features that elicit positive feelings, holds attention and interest without taxing or stressing the individual, and therefore may block or reduce worrisome thoughts" (such as interactive play in waiting areas, screens with shows, books, age-appropriate toys).

Thematic Design

In the case of integrating thematic design into a program, the use of simple ideas are generally preferred. Eisen et al. (2008) assessed whether art depicting nature reduced stress in pediatric patients, and if so, whether there were differences between cognitive development in different



Figure 45: Here we have an example of thematic design patterns on a wall with cultural inspirations.

age groups. Thematic design has therapeutic benefits for children like the comfort in thematic design and accessory items such as cushions, lamps, pictures, and rugs so that interiors provide a “home from home feel.” Decore and art of walls of themes are also shown to be beneficial to improving children’s mental health. A great opportunity for integrating thematic design relevant to a culture or place is also beneficial when helping the inhabitant relieve stress and feel at home. To have familiarity with your situation can increase good emotions like a sense of safety and joy.

4.4.4 Art Therapy

Art has always been a way for humans to tell a story. It can express what is difficult to say in words and can help to release inner turmoil, anger, and sadness. When we engage with colors, symbols, raw materials, sound, and movement

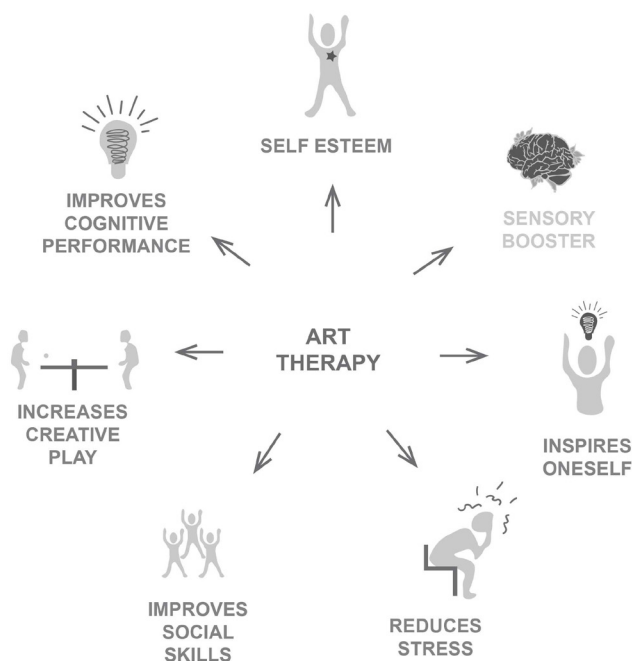


Figure 46: This diagram for ‘Art Therapy’ methodology depicts the benefits a successfully designed space will provide for the children who will partake in this facility.

to convey how we are feeling, rather than mentally relaying this, we connect with the physical response to our experiences. This relationship has proven to be especially important in the processing of trauma, as trauma is stored in the body and therefore needs to be realized and released through the body in a positive manner to reduce the negative impacts it may have on oneself and surroundings. Engaging in the process of creating art brings us into the present moment, it brings us into our bodies and helps to soothe our nervous system. For this reason, art is so valuable for people dealing with the aftermath of trauma - whether it is simple or complex. Healing trauma through art is extremely effective in helping survivors process their experiences in a safe environment where they have control. Being able to create is incredibly empowering for anyone who has been disempowered. In this case, the Palestinian Children who have felt disempowered by the difficulties going on around them can rekindle the spirit of art differently. Art is not a new form of expression brought to Palestinians in Jenin, as art and murals specifically have been a means of creation the citizens seem to use to express their fight for freedom against the occupation (InterRelate 2023; Ugurlu et al. 2016).



Figure 47: This diagram from Ellis (2020) talks about the idea that “until you spread your wings you’ll have no idea how far you can fly”. This quote is an inspiration to the overall root of this thesis that pertains to helping children learn to spread their wings metaphorically.

Art therapy is known to improve cognitive and sensory-motor functions, foster self-esteem and self-awareness, cultivate emotional resilience, promote insight, enhance social skills, reduce and resolve conflicts and distress, and advance societal and ecological change. Art is a great form of therapy as it is a nonverbal therapy, just like trauma is a nonverbal mental health issue. Trauma is deeply emotional and makes putting things into words utmost difficult. Art helps externalize your experience, boosts positive emotions, and strengthens relationships as well. Using imagery, art, and

emotions instead of words can help the healing process of children (Ellis 2022).

In a study by Ugurlu, Akca, and Acarturk (2016), they examined the prevalence of psychological symptoms among Syrian refugee children and assessed the effect of an art therapy intervention on post-traumatic stress, depression and anxiety symptoms. After the study was conducted, findings of the study indicated that trauma, depression and trait anxiety symptoms of children were significantly reduced at the post-assessment (which was after the involvement of art as a therapy). From the results, it can be claimed that art therapy is an effective method to reduce post-traumatic stress disorder, depression and trait anxiety symptoms among refugee children. As Syrian refugee children faced very similar trauma as children in Jenin, Palestine, this research helps the case of involving art therapy in the official program design of this thesis.

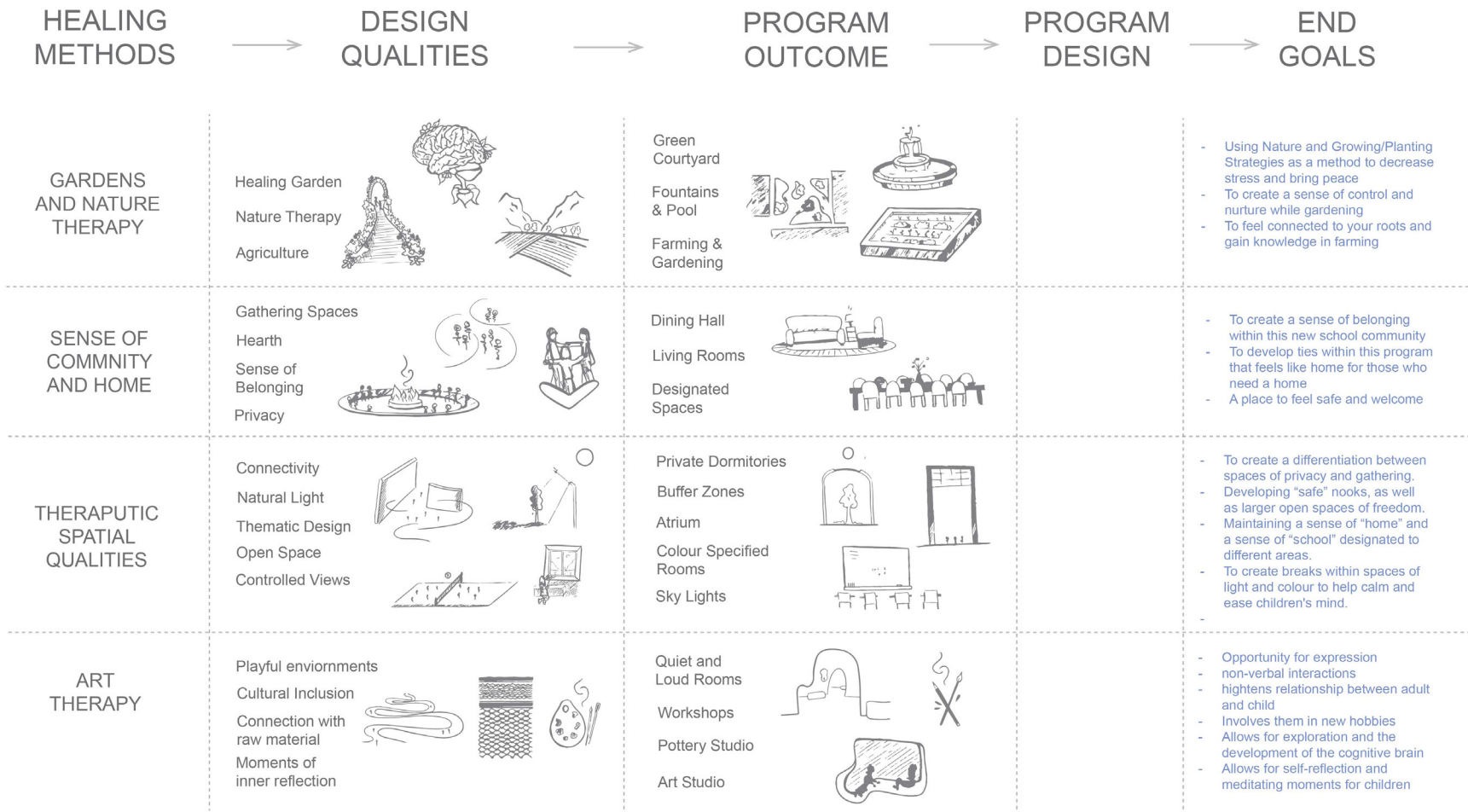


Figure 48: This illustration shows a flow chart of what the healing methods aim to achieve, moving from left to right during the process of research to the end goal. From the healing methods, design qualities will be extracted that are then formed into program outcomes. Afterwards, a design is born from this and relates back to what the end goals are.

Chapter 5: Proposal

5.1 Design Approach

In this thesis's design proposal, for the program to work with efficiency, it requires three main roles to take place: The child's role as the inhabitator in need of healing; the adult's role as the human facilitator and nurturer; and the role of the architecture as the physical facilitator that completes the role with the adult, or when the adult cannot.

5.1.1 The Child's Position

The child holds the position of whom this program is designed for in terms of characteristics and facility. They are the inhabitator in need of protection, healing, and nurturement as they can only reach so far on their own. They also face difficulty processing PTSD, trauma, and healing without the help of a parental figure or adult to confide in. They end up requiring the assistance of a parental figure in most cases to provide nurturing and listening. The child's journey and progress in different stages of their childhood is the main focus of this project.

5.1.2 The Adult's Position

The adult holds the position of secondary caretaker, teacher, parental guidance when there is a lack thereof, and an overall adult figure to listen, direct, and help during the child's journey in this program. With the extensive amount of activities and schooling that will be present, the adult's helping hand to navigate situations that may be overwhelming at times stems from the architectural roots and methodology for this thesis. When all problems of healing are placed on the adult, there is only so much they can do as they are still

human and lack a manual of how to deal with every situation a child may go through. Even if the adult specializes in child therapy or psychology, they require a step further that can help support their stance.

5.1.3 The Architectural Position

With the role of architecture being a dominant role, it assists in the adult's role in helping children, while also providing individual help straight to the child as well. The role of architecture is greatly important and impactful because of the neurological effect it has on its inhabitants. Aside from the difference between a gloomy dull design versus a bright colorful design, the organization and program layout, as well as the design of safe spaces and buffer zones play a vital role in a child's healing journey. To add to that, the welcomeness of a space, whether enclosed or an open space, is important in this design as there needs to be a strong presence of welcomness in the facility while keeping a distinction between private and communal spaces.

In some cases, the building is known as "the third teacher", or the third adult responsible for the child's growth and education (Dudek 2005). Parent being the first, teacher the second, and the building that encompasses the student the third. This gives high importance in the design as the building becomes responsible over a child's education and experience as well.

The architecture also needs to be sensitive and caring to the land as it is sensitive and caring to its inhabitants. Given the site is on land of very high agricultural value, it is important to be cautious of how we design on such land. As Ian McHarg said in his book *Design with Nature* (1971), the way we occupy and modify the earth is best when it is planned

and designed with careful regard to both the ecology and the character of the landscape.

5.1.4 Dissecting the Palestinian Home

A traditional Palestinian household consists of an exterior courtyard being in the center of the home with bedrooms, washrooms and kitchen surrounding it. The exterior courtyard takes the role of the hearth, where families gather during the day, hang their laundry, prepare large meals with neighbors, and have dinner in. it is also their way to be in the outdoors and sun while keeping privacy.

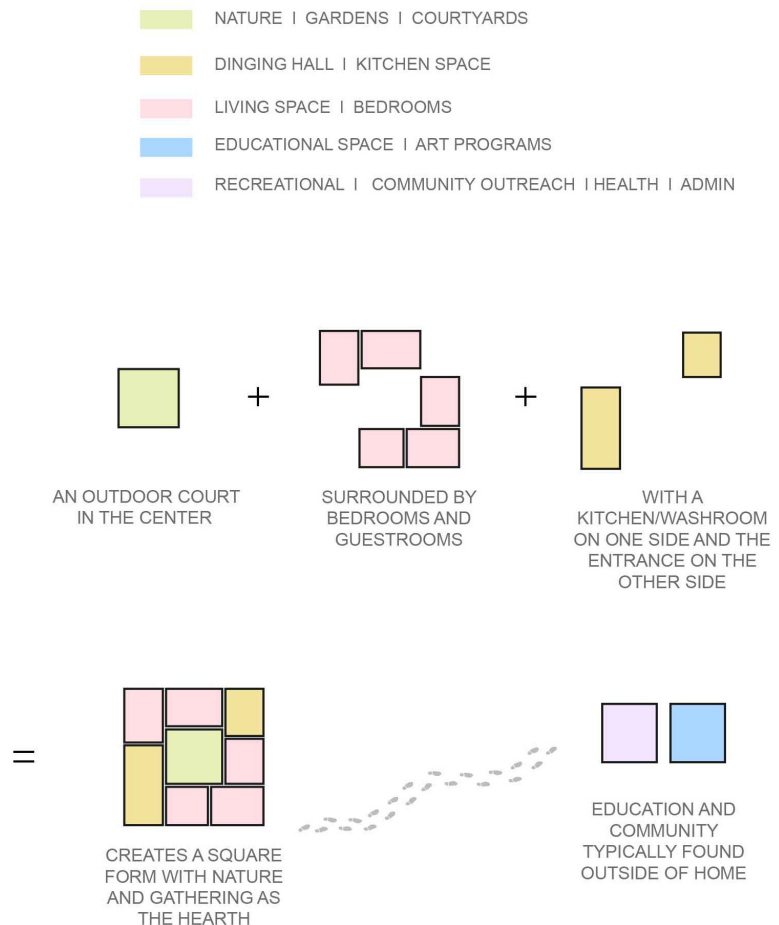


Figure 49: This illustration explains step by step the process in which a typical Palestinian home is laid out. This entails a central courtyard with other programs surrounding it.

5.2 Design Proposal: Program and Facility

The Journey of the Child

From the youngest age of 4, a child arrives at school either as a participant in healing or as an inhabitant living on the grounds as well. The journey begins with the development of this new space becoming a home, and gaining a sense of belonging in this community. For every 10 children of any age, there will be 1 adult caretaker. Children below the age of 10 create bonds and connections with others in and out of living quarters. They begin to have parental figures through the adults who are helping them in their healing journey. They also explore and experience parallel play, art, field trips to other spaces in the city, and nature on a healing level. Slowly reaching between the ages 10 and 15, they start to experience responsibility and are monitored less with the opportunity to talk to people when in need, or choose to go to a safe room/space if they need time to themselves. Reaching the age of young adulthood, children between 15-17 continue to live in dorms or come to school from the outside, and can begin to include volunteer work within the orphanage and school. This allows for a closer connection with the adults, preparation for responsibility, learning how to lead and take charge, involving a deeper integration of the healing process as they help others through it, and remembrance that they take an important role in the community they live/study/play in. Once these young adults reach graduation at the age of 18, some may wish to become the leading adults of the facility to help the next generation, or branch out and begin their studies at a post secondary school. At this point in their life, they would be prepared for their next journey, knowing they still have a home here with different opportunities.

Site Division

The program stretches over 150 by 220 square meters of land. The program is divided based on the hierarchy of the program and necessity. 20% is provided for living space. Art studios such as pottery studios and craft-making spaces, as well as classrooms take up 15% together. Gardens and nature inclusion take up the most at 30%. The bunker/multipurpose space takes up 15%, while the dining hall/kitchens, and staff/admin and health take up 10% each.

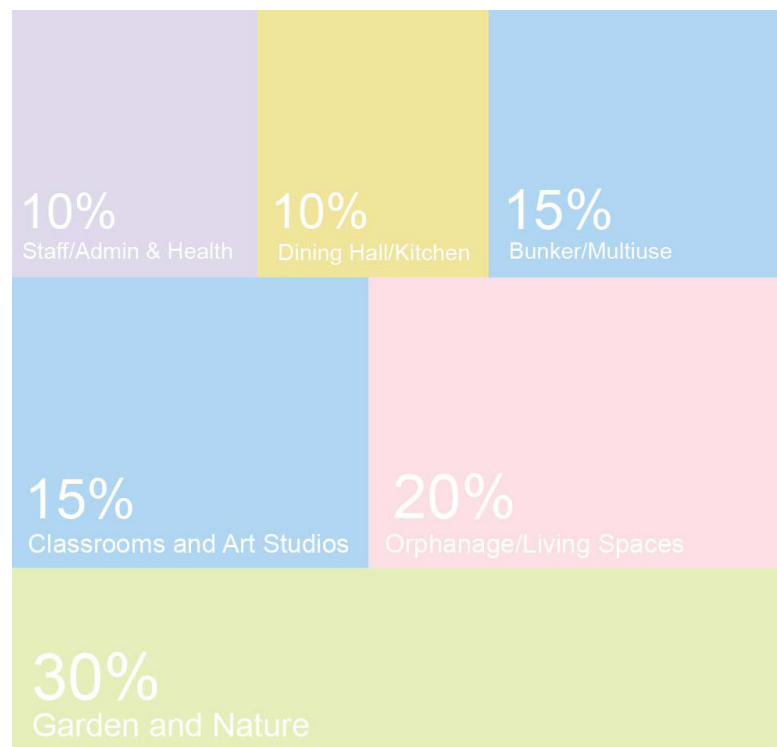


Figure 50: This illustration expresses the proposed site division percentages of the land for the programs.

5.2.1 Re-imagined School

For this proposal, the reconstruction of a typical school and orphanage style is picked at, extracting the most important key characteristics that make it function as a school and orphanage, and enhancing it to turn it into more than just function.



Figure 51: This image shows the use of parametric walls that control light and perception and provides a sense of privacy and exploration (Villalba 2021).

Orphanage/Living Spaces

Looking at living spaces for orphans who wish to reside on the school grounds, we take the aspect of privacy and safe space seriously. Lack of privacy is common in orphanage living quarters where numerous children share their sleeping space, eating space, and playing space, and end up resorting to creating a space of privacy elsewhere, or suffer the lack of privacy ultimately. The design of the living quarters where children below the age of 9 sleep allows choice. With the integration of mobile wall partitions within a double room allows the opportunity to create individual spaces, shared spaces for sleepovers, and a change in layout. This concept utilizes space and provides privacy and responsibility. This also allows for more control on the adult's end when decisions are made for the safety of these children. Adults can have a closer watch over these kids, and hold important decisions (for example if a certain child should share a space with another). Children have the opportunity and choice to be within their own walls or ask to be shared with a friend. This also creates a more playful environment as there is always a chance for creativity in shared rooms. Children between the ages of 10 to 17 begin to yearn for more structure in their rooms, which is where individual dorms in the form of a village style take place. This same village-style integration continues the sense of home and community, where the children experience having neighbors with each other. This alludes to the growth, and experience of adulthood that the school is preparing them for when their time at the orphanage reaches graduation.



Figure 52: These images of modern children schools and spaces expresses and exemplifies comfort through the use of pocket walls, curves, and heights (Ott 2021).

Classrooms

A student spends approximately 2500 days of their life in a school classroom in which education, memories, friendships, and other activities take place. The space of the classroom can greatly affect the mood and ability to focus for the child. Having a classroom with minimal distractions and openness to nature is implicated in this design. With a curved details, and open windows framing the vestibule of nature and gardens, this aims to achieve ease, positivity, and focus for the benefit of developing the cognitive brain. Structuring the classroom seating to be rearrangeable with a common round or 'U' shape alignment encourages engagement from the student's end with the teacher. The design of the classroom may be minimal, however, it will still include pockets of discovery and play within the walls which allows for the children to view this space not only as a room of education and schedules but as a space they enjoy being in as well.

Staff Quarters and Health Facility

Health facilities tend to be scary to some children, with bad news and pain lingering in the background. Thematic design of a soft yet playful environment will take place in the health facility. It will not only be a space of medicine but also where many kids may go speak to an adult or teacher they are familiar with for support or comfort. Mixing these two programs can help the child stay at ease and not dread such a space. Colors on the wall and natural light falling from the ceiling all play a vital role in the architectural characteristics that will help achieve this sense of safety for kids. Thematic design in a mature setting will take place within the staff quarters as well in order to achieve calmness and safety

for the adults in charge. It is important that the 'water' that is watering the garden is to be clean and pure as well. If the source is deemed unfit, it could spoil the new growth and healing of the children.

5.2.2 Multiuse Spaces for Healing

Kitchens/Dining Hall

The dining hall plays a very important role when it comes to creating a sense of belonging and home for its users. In many Palestinian homes, it is tradition to dine as one big family on one table or floor seating. Bringing in a mix of cultures in the dining space and kitchen is important as cooking and eating together is a strong aspect of Palestinian culture. In doing so, the integration of long dining tables and an open concept kitchen facility which can be used as a cooking class studio as well is structured in the form of a hearth. It centers the site, being a place of gathering over the curation of food and family. This space is envisioned to be formal and humbling, with recessed cozy seating, similar to conversation pits from the 70s, and traditional Arabian 'majless' which is a lounge/gathering space where seats are lowered to a few inches above floor height centers around a coffee table.

Art Studios

Art studios will be designed with endless opportunities for creation. This is achieved through open spaces, mobile tabletops, and studio desks. The space will evoke creativity through its architectural features. Curved 3D walls and patterns that emit natural geometric shapes (as seen in figure 53), as well as natural light and an open concept, will give the children room to do what they need to in order for



Figure 53 : These are images of the hand made 3D models of seats curvature and playful forms. The models can expand to have a flat base to form a wall, curve 180 degrees to form a bench or seating, and curve 360 degrees to form a curvy column.

this space to provide them with therapeutic benefits. This space hosts art therapy sessions where children can use art to express themselves when words cannot. This can be done through murals, painting, and the making of pottery. When children can create and use their hands to perform, they will feel more control over their lives. The work they create will then be showcased within the room and facility itself (such as murals on the wall, functional pottery used in the kitchen, etc), with the opportunity of helping the child sell their work at markets in the city center Jenin (which helps with the integration of community and connectivity).

Multiuse Bunker

The design and use of a bunker have always been connotated with the idea of danger and fear. It is a space to hide in for an unknown amount of time when a life-threatening situation occurs. Because of this, bunkers are not commonly used except in an emergency and tend to be a dark, cold space underground used for storage in the meantime. For this design proposal, a bunker will be integrated into this program due to the unfortunate circumstances of these life-threatening situations being a realistic scenario in cities in Palestine. Other bunkers exist within the city, however, creating one within the children's facility that is multi-purposeful will mitigate the risks. Depending on the use of this space, it creates an initial connection between itself and the child. The bunker will be a multi-use space below the ground. It will not be called a "bunker", but rather a secondary schooling space where more classrooms, play spaces, and an indoor greenhouse will exist. These programs will take place in the bunker alongside storage of supplies and food, as well as bed bunks for roughly 200 inhabitants. The classroom and play spaces can be used for



Figure 54: This is an image of an interior play area and courtyard of Sparkletots Preschool by PAP Community Foundation/ LAUD Architects.

recreational activities, acting and plays, classes, and much more. In the bunker, there will be a mezzanine designated for bunkbed space and personal storage. In the center, an atrium reflecting natural light from above and holding artificial light will exist. Other characteristics such as columns that resemble trees, and play mats made of faux grass will take part in connecting the bunker with the idea of nature and keeping a contrast between the typical activities above on the outside. This space will be filled with colors and themes that evoke imagination, play, and distraction for the children in order to combat fears and worries they may have during the time they will be sheltering there. With the student's and staff's use of the classrooms, play space, and greenhouse on a common basis, the idea of an isolated unused space will be eradicated from anyone's mind, erasing that fear of this being designated as a bunker during emergencies. possible inhabitants.

5.2.3 Spaces of Connection

Garden and Nature

Courtyards, nature pockets, and gardening are all forms of nature architecture that will be involved in this program. Within each separate program/space, nature will be present. This can be created in the form of an interior courtyard that allows for a mental break. It will also be accomplished through larger exterior courtyards where children can play within nature. The program of a garden is most important within this design as it brings gardening and nature therapy, as well as holds a feeling of community and creation. This garden will be accessible and open to harvesting for the entire facility as many users will work together in order to grow food and plants. Extra produce can also then be

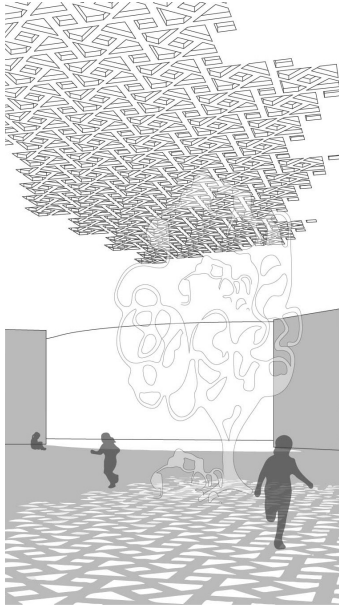


Figure 55: This perspective shot of the exterior play spaces display a proposition of a parametric canopy design for the courtyard.



Figure 56: 3D model of parametric roof design.

sold at markets elsewhere in the city, encouraging more outside community engagement. The learning process and knowledge that children will gain from gardening instills in them new capabilities to use in the future and share with others. The garden also intertwines with the kitchen program as students will be given the opportunity to cook what they grew and turn them into meals themselves. This gives many 'full circle moments' for the children, leading to a sense of fulfillment and better healing.

Park/Play Area

Open spaces and play spaces hold a crucial role in this facility, as it is encouraged for all children to explore, relax, play with one another, and release the stress that is preventing them from healing. A balance of protection and openness needs to be implemented to achieve safety. Creating a curved exterior vestibule aims to inform the child through architecture that this is the safe place to conduct play in and to not 'stray too far', while still keeping it open and accessible to rule out the feeling of claustrophobia or 'imprisonment' (as some orphanages and schools may feel like). Given the site is situated in a residential area, it is much safer to have openness there rather than in the city. As for architectural aspects, landscaping will involve themes of play and nature, and a roof with a diffused parametric opening will create a 'center space' to stay within while controlling harsh hot lights to hit directly on a child during play. Other aspects such as small amphitheater steps in other curved pockets allow for more intimate moments for children to hold plays, or speak to friends. Because the form of the facility takes an organic form, many exterior play spaces will exist within these curved pockets to provide children with more selection and offer a change of the environment.

Schools and Existing Centres in Jenin

A programmatic integration of field trips as well as connecting points across the city will take place. This will happen in order to maintain relationships with outside communities, schools, recreational centers, theatres, parks, and other activity spaces so children may feel connected within their city, and not secluded to their school facility itself.

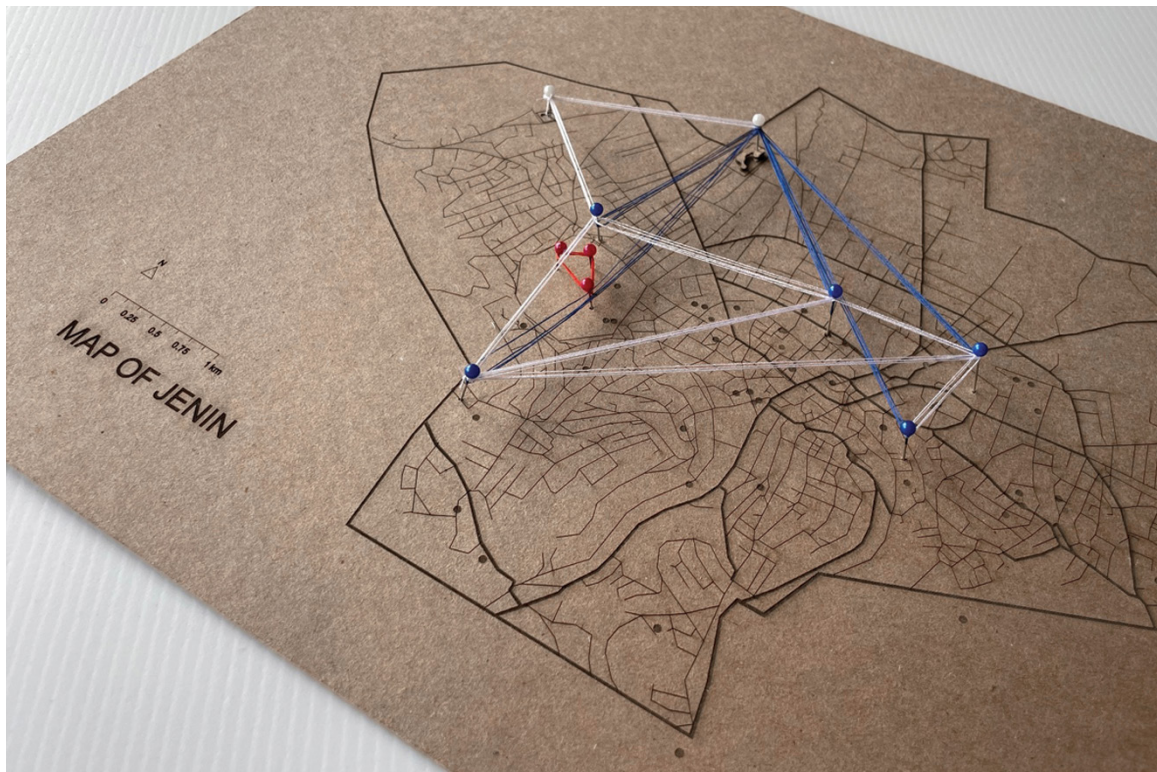


Figure 57: This is a 3D Visual Map of Jenin. This map shows the connectivity between the village site in relation to programs in the city such as Freedom Theatre, IQRA Academy, Garden Jenin, and Soccer City Stadium. This will help achieve connectedness between the child and their city roots.

5.2.4 Materiality and Form

Materiality

The traditionality of these homes and materials is important to foster that sense of belonging into this orphanage school and can help them connect with different spaces. Limestone, red brick, and clay tiles bring the roundedness of the earth for Palestinians as it is a local and common material used

in building for centuries. Colorful textiles and patterns resembling traditional clothing, tablecloths, and tiles are brought in to give a deeper sense of home, and to stay in touch with culture and tradition. Speckled terrazzo, colorful glass, and bright green tiling can be used to elevate typical school-built materials and foster a more childlike space and exploration while keeping the surrounding dullness of grey buildings and destruction at bay. Limestones will hold most of the structure and composition as its bright complexion exemplifies a canvas or base for more ornament and detail to come. Red sand-dried clay will be used when creating porous facades and walls that let light in, and they provide ease when creating more intricate curves within the facility. Metal paneling will inclose the space from above, as it will be used as a canopy roof.

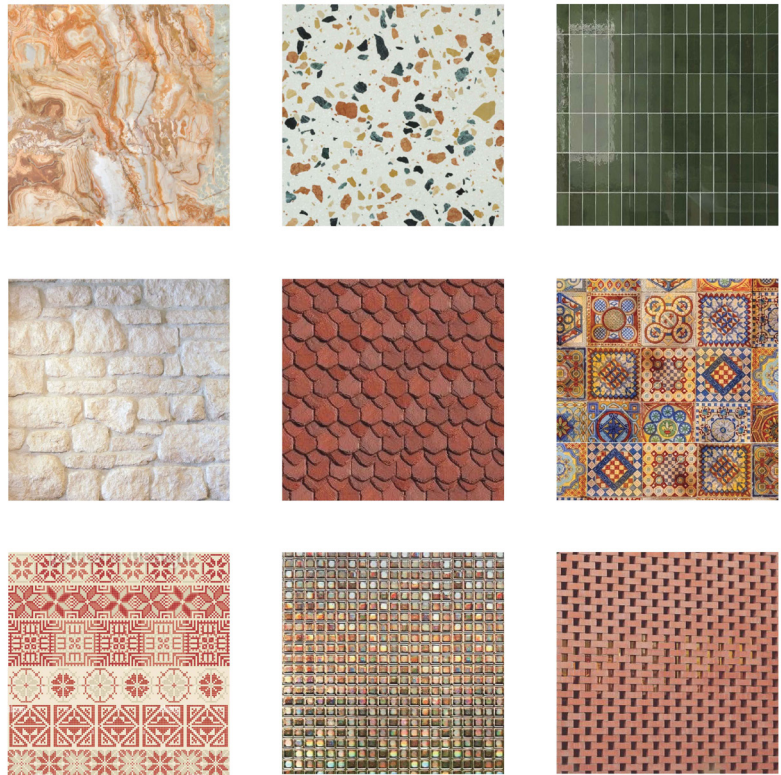


Figure 58: The images above display the materiality proposed for this thesis design outcome such as sand dried red clay, tiles, and limestone.



Figure 59: These images represent brick material use for parametric wall designs.

Form

From dissecting each space and looking at the design characteristics that will be involved, the form follows. For this program, a mix of modern and traditional will be combined. The Palestinian village will be a center typology for this design. The form of the facility will take an organic form that produces easy movement/circulation, exploration with a theme, and the sense of being in a community with different programs spaced apart. Below are initial sketches that play around with an organic curvature form that pulls in the idea of nature and geometric shapes. The results of this sketch study are to figure out what shape produces the most natural form, as well as hold the most function while providing as many exterior curved pockets as possible. In these curved pockets, the important program of nature and play will be integrated, hence the more the better. An ideal amount would be a ratio of 1 exterior space per program or 'village circle'. The sketches below show initial ideas of an organic form with exterior pockets and spaces between inclosed curved rooms.

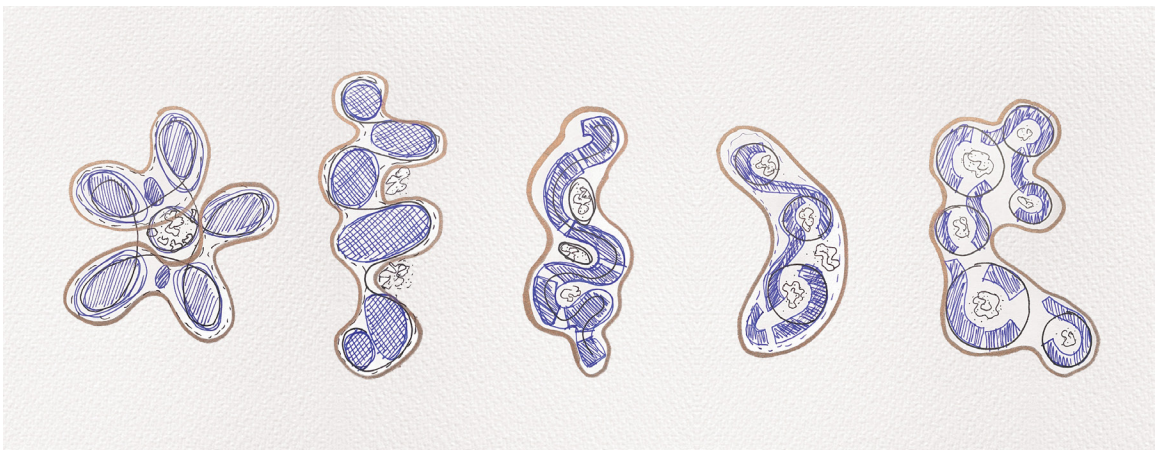


Figure 60: Above are parti sketches exploring curved forms creating flow, privacy, exploration, and communities. Sketch 1: Exploring organic forms 'floral'. Sketch 2: working towards circulation and courtyard or 'curved pockets'. Sketch 3: continuing organic flow, implementing more pockets. Sketch 4: Exploring possibilities of many curved pockets for nature, gardening, and enclosed protection. Sketch 5: Final sketch for work in progress design.

5.3 Design Results

5.3.1 Exploring Form and Program Division

The traditional Palestinian home layout is taken into the village program with an addition of a larger scale dining space called a Majless, studios for art and pottery, a garden, classrooms, a multipurpose bunker, and many open green spaces throughout. Aside from the programs accessible on site, children will have the opportunity to travel to nearby farms, schools, gardens, and recreational centers to further their connections in the community. This program will facilitate four age groups of kids, both orphans living in the school village, and children coming from nearby neighborhoods. Four different age groups result in four living quarters, which host ages 4-7, 8-11, 12-14, and 15-17.

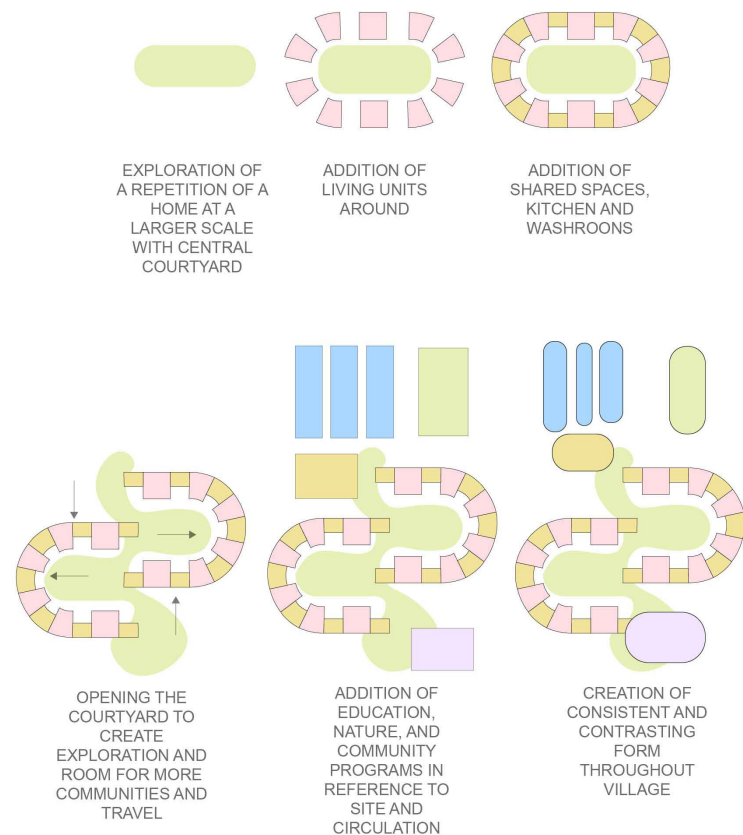


Figure 61: This diagram takes the form a step further in development by integrating the layout of a Palestinian home.

5.3.2 Neighborhood Scale

Looking closer into the specific site the village lies on, it is directly between farmlands and a residential neighborhood. This results in the main entry to residing on the south side of the site where the highest flow from residential areas arrives. A secondary entrance as well as a direct entrance to the schooling is located within the West side of the village.



Figure 62: In this diagram, a site map at a neighborhood scale is displayed depicting the direction of people within the existing community to travel towards the new proposed village. This allows for the decision of two entrances to be created within this program catering to the direction of travel.

5.3.3 Master Plan

Walking through the village, we first have two entries, the main lobby on the south of the site where parents stop by, admin and health facilities occur, and children entering the living quarters can come through. The second entrance on the west side is a drop off entrance or direct entrance to the school and studio facilities. In this main lobby, its quick business, you walk through the lobby courtyard past the offices and welcome center, experiencing a preview of what's to come. This is when the child begins to enter the first outdoor space called "Baha", which translates to fun or play. Integrated in the outdoors there is a play area, natural shade from trees, different nature corners and nooks curl up in by yourself or in small groups, and surrounding the Baha is the first two living quarters.

Following haven is a secondary courtyard called Mass. This courtyard, rather than the previous one, explores bigger groups, gatherings, and connections with large outdoor recessed steps for seating, a fountain, and a lot of open space under natural shade.

While standing in this large open space, the child can see many of the same walls, each color-coded by a panel. They are informed which color is theirs, and that it will be their new home.



Figure 63: This main floor plan is labeled with numbers. 1- Lobby & Admin. 2- Staff and Health. 3,4,5, & 6- Living Quarters. 7- Baha. 8-Mass. 9-Majless. 10, & 11- Class Halls. 12- Art & Pottery Studio. 13- Melath. 14- Parking.

5.3.4 Unit Plan

The layout of the living quarters consists of individual houses resembling traditional Palestinian homes with a private courtyard in the center, and 5-6 rooms surrounding. For each 10 to 12 children living in the house, there is one adult parental figure living alongside them. Attached to the right and left of the single house is a kitchen and washroom. These two spaces are shared with the next house to follow, connecting one another. This allows the group of kids within a home's interaction to double. Households are just the first step in fostering the sense of community and belonging. The layout of the shared kitchen allows for teamwork and group meals to commence, keeping that sacred involvement of cooking and helping one another close to family. The kitchen wall facing the courtyard is made up of sliding glass doors to increase the space, allow air circulation, and to enjoy a bright sunny day while making a meal.



Figure 64: This image is a render of the single home from the exterior which is used as a rest/play pocket.



Figure 65: This floor plan is a single house plan with a shared kitchen on the right and shared washrooms/changing rooms on the left.



Figure 66: This image is a render of the interior private courtyards centering the bedrooms withing the living quarters.



Figure 67: This image is a render of the shared bedroom from inside the living quarters.

5.3.5 Majless

On another occasion where a cooking class may take place with more than 20, we move to the Majless hall. This is accessed right after you exit the second courtyard. The Majless hall represents the traditional seating space of gathering on a larger scale. Here, all students and residents can gather for all their daily meals, larger scale cooking classes, to work, or just sit with friends.



Figure 68: This image is rendered to express the atmosphere of the exterior environment between buildings. In this specific scenario, this is located between the living quarters, garden, and Majless.



Figure 69: This image is a rendering of the interior Majless space shot from the communal kitchen towards the central seating.



Figure 70: This image is a rendering of the interior Majless space, displaying the textures and materiality found in the central fountain by the seating spaces.



Figure 71: This section is taken within the Majless connecting to the bunker down below. It displays the hidden water source, wind tower, and ventilation that is provided for the bunker space. It also displays the relationship of the bunker's play areas with the sleeping areas located on the mezzanine. To the left of the section, there is one of the four entrances/exits to the bunker that holds a slide for accessibility and a step ladder.

5.3.6 Education and Art Facility

North of this hall are the classrooms and studio spaces. These are formed in three long parallel masses holding three class rooms each. In between them is a path shadows by trees and outdoors seating for reflection, privacy, and minimal distraction from next door. On the opposite sides of the outer masses are rolling doors to extend a classroom outside. Each classroom is designed with a different layout to help students differentiate these rooms from one another, allow for optimal sunlight benefits, create a different connection pertaining to each space, and to cater to the type of class and age group hosted. The center mass holds the art and pottery studio, where kids experience art therapy through creation and exploration. Pulling from the traditional curves of Palestinian arches as well as the rounded walls throughout the village, an arcade surrounds both side of the studio as well as separate different interior sections inside the studio for different uses.



Figure 72: This image is a rendering of the exterior pathway between the classroom and art studio.

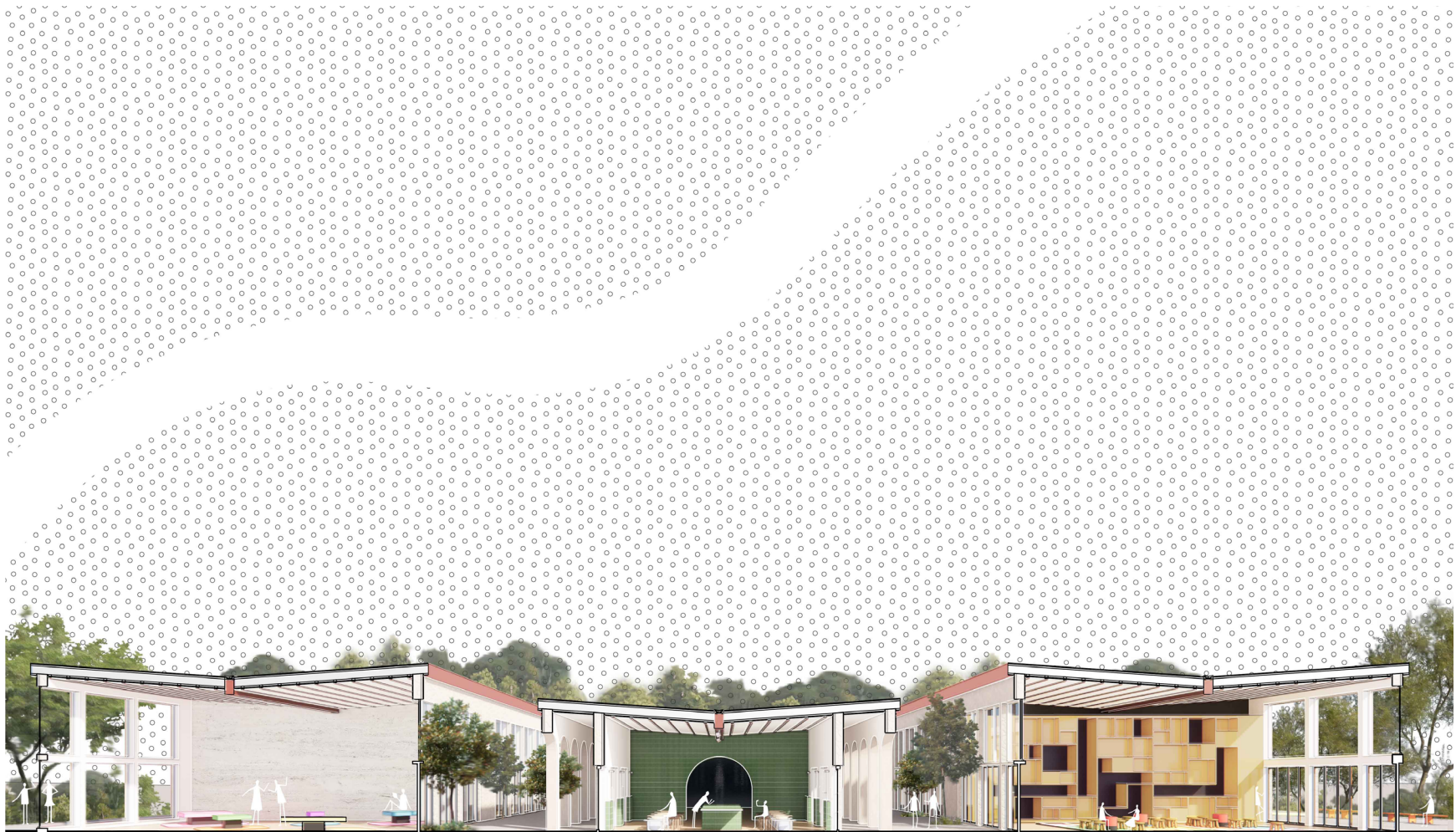


Figure 73: This section cuts through the two class halls and art/pottery studio. In this section, we can see how two of the classrooms are used as well as their different characteristics pertaining to different age groups. We can also see the use of the pottery studio, and how all three buildings are parallel to one another with long pathways allowing for a break in between.



Figure 74: This image is a rendering of one of the six classrooms. This classroom is catered to children between ages 4-11.



Figure 75: This image is a rendering of the pottery studio displaying traditional materiality and arches.

5.3.7 Melath Garden

To the east of the classrooms is the garden called Melath, meaning haven. Situated nearby, the garden is used for educational, sustainable, and therapeutic purposes. Children get to learn, create, and eat what they grow. The Melath holds various herbs, fruits, and vegetables used for traditional Palestinian cuisines as well as holds spaces for gardening flowers and succulents which pose as a living project for the child to watch over and nurture.



Figure 76: This image is a rendering of one of the two entrances into the Melath Garden. This view is meant to evoke and encompass the feelings of peace and safety and foster an environment for nature therapy.



Figure 77: This image is a rendering of one of the outdoor kitchen and prepping spaces in the garden. To the left of this space, there is a mirroring prepping space providing the same use.

The Melath also provides outdoor cooking spaces below canopies covered in grape vines. This space can be used to wash and prep the freshly harvested produce, then make a meal in the outdoors with a group, individually, or to host a cooking and gardening class. This space helps foster team work, family settings, and deeper connections with people and oneself as the child learns how to nurture their plants and nurture their bodies.

5.3.8 Bunker

The journey of the child does not end there, as a multipurpose bunker is below the site with four main entrances within the living quarters, Majless, and studio space. In this multipurpose space called aman meaning safety and trust, more programs exist. In the case of an emergency, this space provides shelter, beds, food, and activities.

The space is comprised of a double height ceiling with a mezzanine wrapping around. The mezzanine holds small versions of the households above with bunkbeds and shared spaces. Below there are extra classrooms and theatre space, as well as a large indoor play area, food and equipment storage, and lastly an indoor greenhouse for growing specific plants and produce.



Figure 78: This image is a rendering of the dining/seating area in the multipurpose bunker. This shot expresses the day-to-day use of the space below the village.

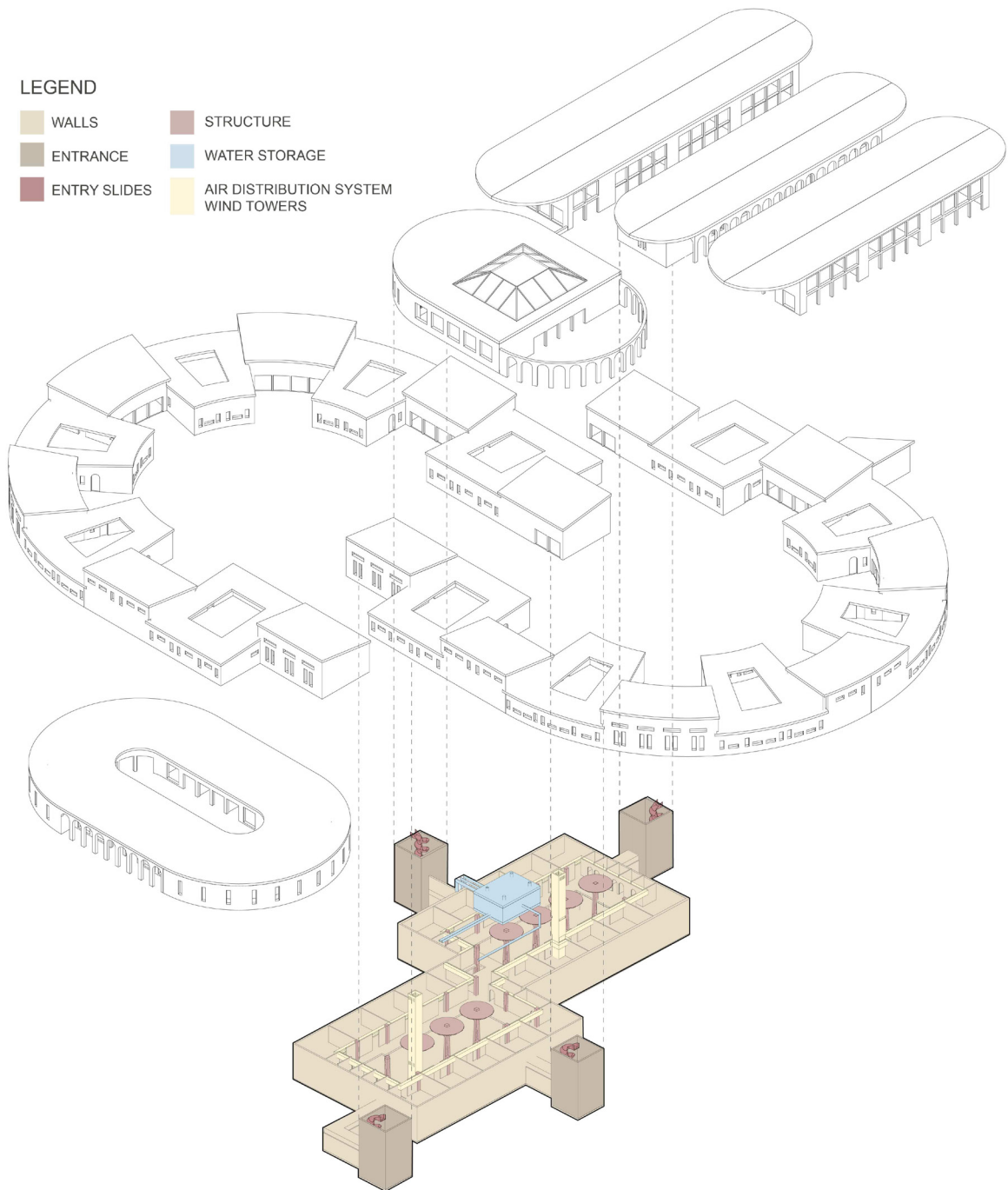


Figure 79: This image shows an axonometric drawing of the bunker below the village with structure, entrances, systems, and walls highlighted.



Figure 80: This image shows the main and mezzanine bunker floor plans.



Figure 81: This image is a rendering of the play area in the multipurpose bunker. It shows the natural characteristics embedded in the design and structure such as the LED strips in the ceiling and the tree trunks covering the columns.

All these spaces are meant to be utilized normally such as any other space above, creating a prior connection, so that if there was ever a situation where it must shelter people, that prior positive connection aims to abolish any negative connotation to “bunkers”. Other natural characteristics within the bunker include LED strips behind walls and reflection on the ceiling acting as a form of natural light, structural columns resembling tree trunks, faux grass, and two wind towers beaming up from below distributing air through ventilation.

5.4 The Overall Picture

Retracting from all that was covered, within the details of the walls, programs, and facility, this program will foster feelings of peace, hope, safety, imagination, as well as other positive emotions to embark on the child's journey of healing and protection. The small moments within this village is what truly affects the experience of the child. This can be seen when children create their own story and life intertwined with many others.



Figure 82: This image is a rendering of the outdoor courtyard with the parametric canopy in the center of the living quarters.

An example can be the rock-climbing wall designated in certain play pockets within the living quarters, or the various indents in the wall that holds one child to just read a book and dissolve into their surroundings. Even the connections they make within a play space with others, or in nature such as within the private courtyard sitting under a tree or gathering with other members while making a meal. These spaces aim to evoke feelings of safety, positivity, connection, and belonging, all to provide help in the healing journey of a child.



Figure 83: This image shows the wall space dedicated to larger communal murals that the children work on as a team as a form of group art therapy.

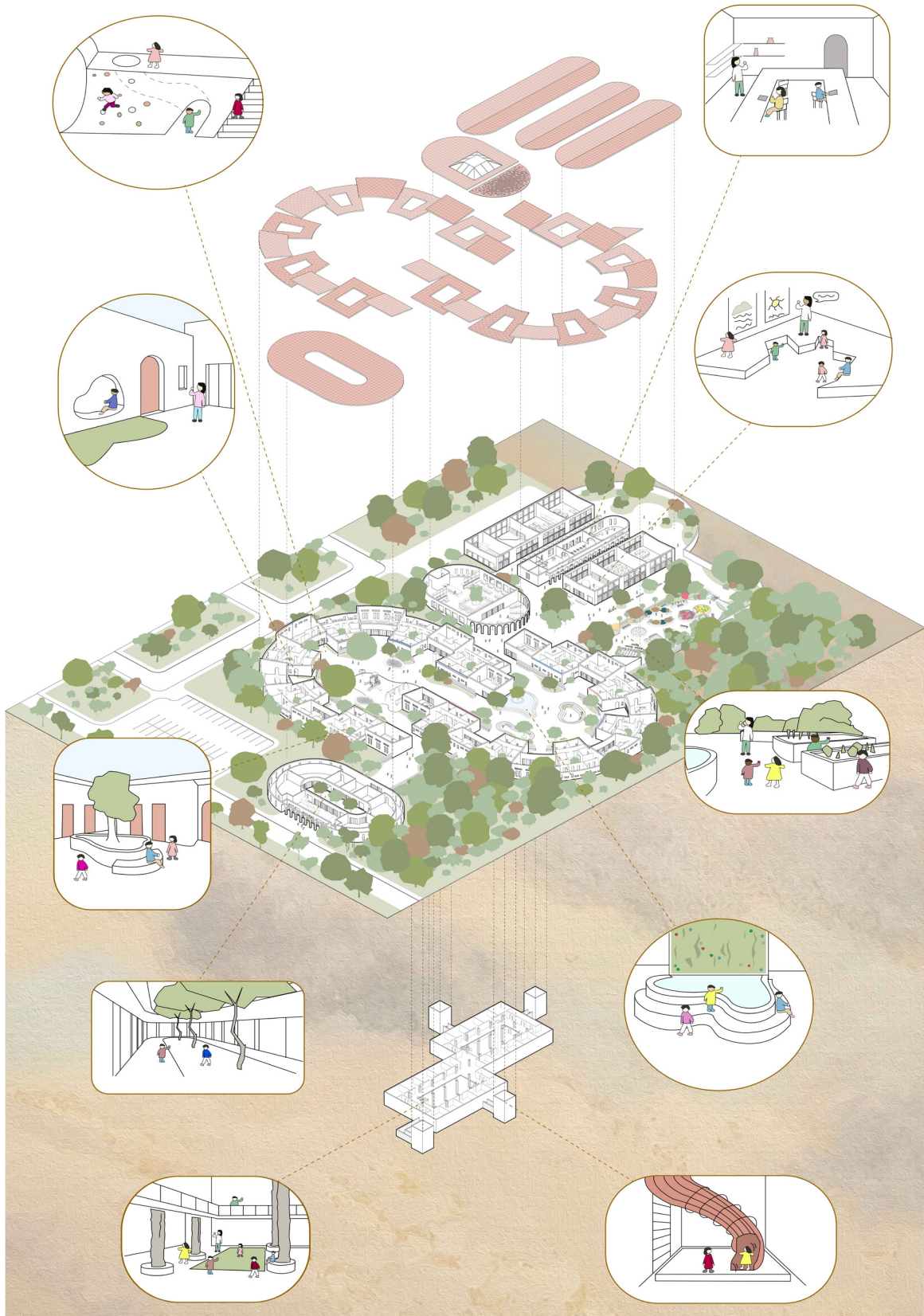


Figure 84: This blown-up axonometric drawing explains the characteristics of the programs and playful form through cartoon-drawn illustrations expressing how the spaces are inhabited.



Figure 85: In this major section we get to see all the interior spaces throughout the village, as well as exterior courtyards and nature pockets. In the first part of the section cut, we see the main entrance lobby, the welcome center, and the the path leading to the living quarters.



Figure 86: In the second part of the section, we see one of the entrance/exits into the bunker, as well as the Mass courtyard and another house.



Figure 87: In the third/middle part of the major section, we have the Majless as well as the bedrooms and courtyard of a single house cut through.

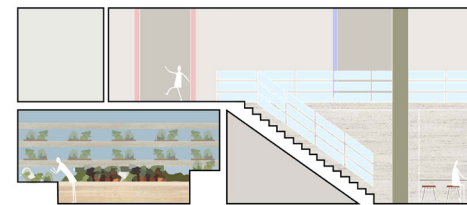
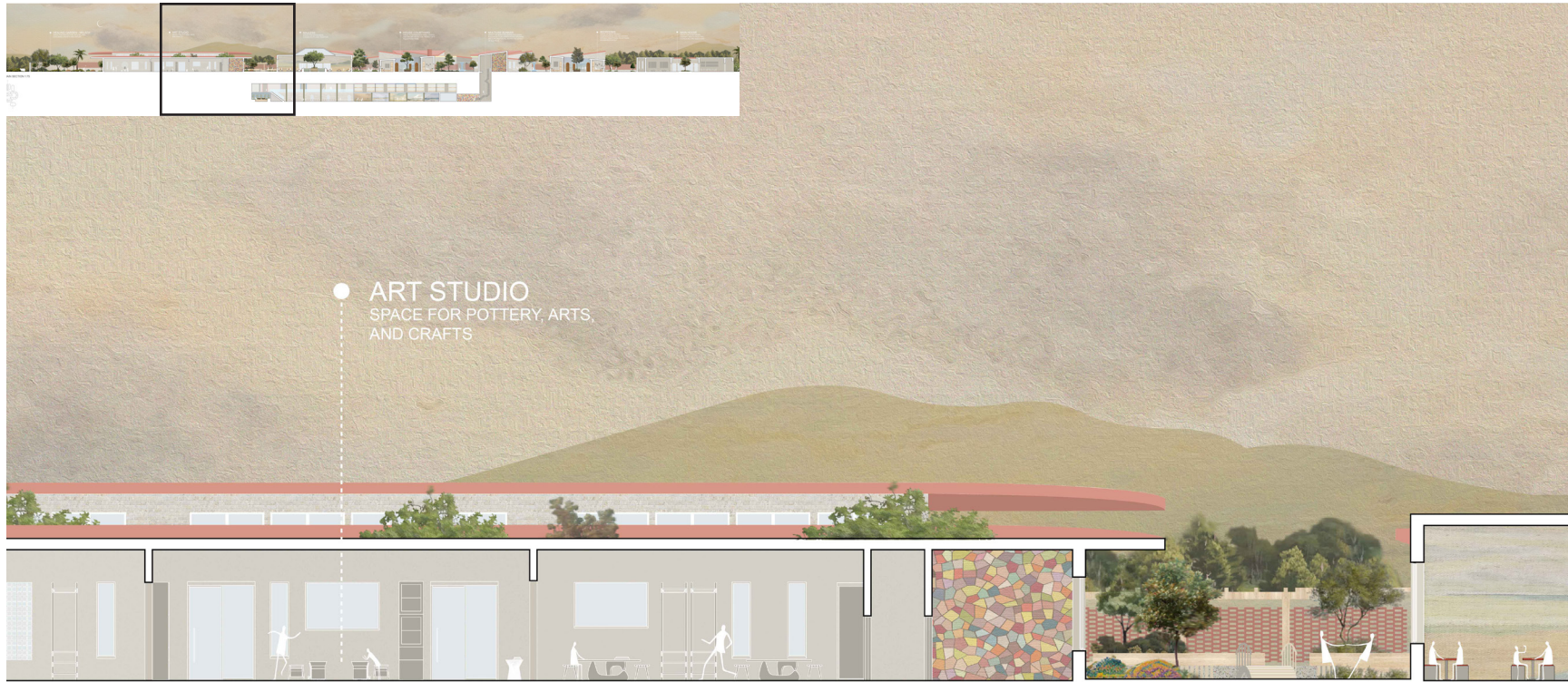


Figure 88: In the fourth part of the section, we can see the end of the art studio that is cut through as well as the beginning of the Majless.

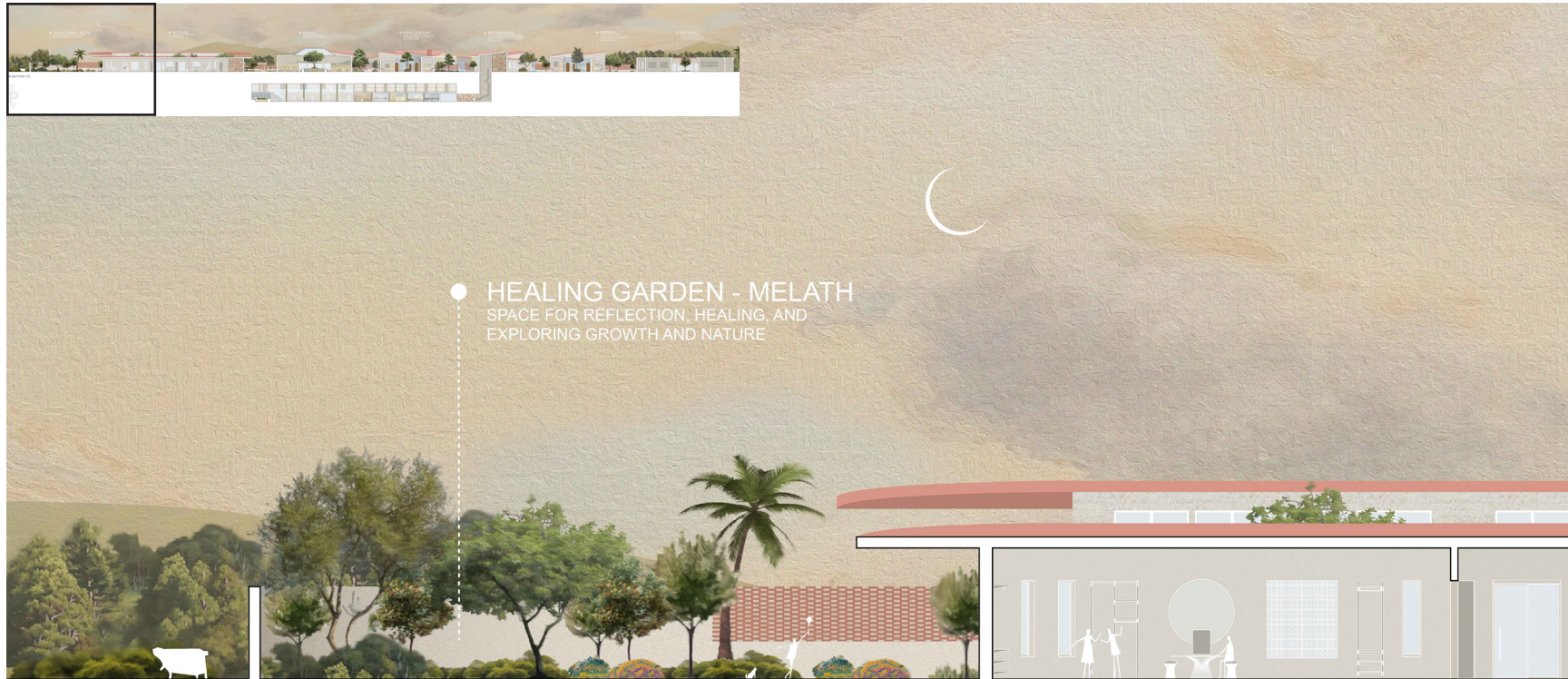


Figure 89: In the last part of this section on the far right, we are able to see a glimpse of the healing gardens behind the class halls and art studio.

As a final attempt to represent the playfulness and extruded masses in the village design, a 3D model was constructed to show the negative spaces where nature lies, as well as the filled voids where the program and design are integrated. Taking a step further in detail, openings such as arches, windows, and doors are displayed on the model to understand the circulation and direction of viewpoints and movements.



Figure 90: This physical 3D model is at a scale of 1:500. The model is made from resin printing, and expresses form and openings. This view is taken from a bird eye view showing the entire village aligned North.



Figure 91: This image of the 3D model shows the village's main entrance on the South side.



Figure 92: In this image of the physical 3D model, it shows the North side of the village where the classrooms and studio are situated.



Figure 93: In this image of the physical 3D model, it shows the East side of the village where the garden and part of the living quarters are situated.

Chapter 6: Conclusion

Palestinians have faced many atrocities and suffering due to war crime trauma and loss of their land. The impacts have been hard on the past and new generations as they all lack the reassurance of not having to worry about their home being taken from them, their children being hurt, and having to wonder what struggles they will have to face as every day passes. All this has inflicted trauma, PTSD, and many more negative mental health scenarios and emotions. The next generation of children fail to hope for a better future and they struggle to care about anything but the war and being martyrs. Day by day, they fight for freedom in hopes that this war will end and life will go back to normal, but even if that were the case, the lingering trauma and fear would follow for many more generations.

In response to what has been happening, these children need to be allowed to heal and feel safe within their own spaces. The journey of healing will be the first step into recovering and protecting their minds and beings from the harsh realities of war, and give them a chance to dream for a better future and work towards positive goals in their life. This thesis introduces healing architecture through different programs and methods. In doing so, methods such as nature therapy, art therapy, therapeutic spatial qualities, and bringing back that sense of home and belonging are introduced through different programs and architectural characteristics.

With the different tools and principles discussed in the context of Jenin, Palestine, they hold the potential for helping children heal and express themselves, as well as feel safe and protected within their new home. The

program facilitates orphans and parented children into the facility to help integrate them into new activities, education, family, and hope. In the facility, the traditional architecture of Palestinian homes within a village layout will foster that sense of community, connection, and exploration the children need for their healing journey.

These tools and principles hold the potential to be applied within many other communities in the world suffering from trauma and PTSD, however with such ambitions, it is important to recognize the challenges that will come with applying these methodologies to a new village, such as political and social complexities, resource constraints, and adaptation to the environment and culture. This project was done specifically for the context of Jenin, interweaving its traditions within the spaces, however, if these principles were to be applied elsewhere it is possible with the correct adaptation and customization to their cultural, social, and political dynamics, as well as their resources and local expertise.

References

- AbdulHadi, Rami. 1994. "Construction and Housing in the West Bank and Gaza Strip". UNCTAD consultant. Accessed September 30, 2023. <https://www.un.org/unispal/document/auto-insert-189903/>.
- Abuarkub, Mumen. 2017. "Traditional Building Materials and Techniques in Palestine". *Prostor*, 25, no.1. Sveuciliste U Zagrebu. Accessed through Gale Academic OneFile. https://www.researchgate.net/publication/348760450_Traditional_Building_Materials_and_Techniques_in_Palestine.
- ArchEyes. 2023. "The Amsterdam Orphanage by Aldo van Eyck: Post-War Architecture" *Architecture, Educational and Sports facilities*. Accessed October 12, 2023. <https://archeyes.com/the-amsterdam-orphanage-by-aldo-van-eyck-post-war-architecture/>.
- ARCH-GYAN. 2024. "The Power of Palestinian Architecture: Transforming the Landscape". <https://archgyan.com/the-power-of-palestinian-architecture/>
- Awad, Ola. 2022. H.E. Dr. Ola Awad, President of the Palestinian Central Bureau of Statistics (PCBS), highlighted the Palestinian children's situation on the Occasion of the Palestinian Child Day.
- Bachelard, Gaston. 2014. *The Poetics of Space*. Translated by Maria Jolas. New York: Penguin Books.
- Biddiss, Elaine, Amy McPherson, Geoffrey Shea, and Patricia McKeever. 2013. "The Design and Testing of Interactive Hospital Spaces to Meet the Needs of Waiting Children". *Health Environments Research and Design*. Journal 6, no. 3: 49–68.
- Bomber, L.M. 2011. *What About Me?: Inclusive Strategies to Support Pupils with Attachment Difficulties make it Through the Dchool Day*. Duffield: Worth Publishing.
- Boyatzis, Chris. J., and Reenu Varghese. 1994. "Children's Emotional Associations with Colors". *The Journal of Genetic Psychology*. 155, no. 1: 77–85.
- Brice, W. Charles, Arnold Hugh Martin Jones, Peter Marshall Fraser, William Foxwell Albright, Kathleen Mary Kenyon, Walid Ahmed Khalidi, Rashid Ismail Khalidi, Nabih Amin Faris, Ian J. Bickerton, and Glenn Richard Bugh. 2024. "Palestine." *Encyclopedia Britannica*, . <https://www.britannica.com/place/Palestine>.
- Butterfield, David, Jad Isaac, Atif Kubursi, and Steven Spencer. 2000. *Impacts of Water and Export Market Restrictions on Palestinian Agriculture*. Hamilton: McMaster University and Econometric Research Limited. Applied Research Institute of Jerusalem (ARIJ).
- Channon, Ben. 2019. *Happy by Design: A Guide to Architecture and Mental Wellbeing*. United Kingdom: RIBA Publishing.

- Contosta, David. 1997. *Philadelphia's Progressive Orphanage: The Carson Valley School*. Pennsylvania: Pennsylvania State University Press.
- Dudek, Mark. 2005. *Children's Spaces*. Amsterdam: Elsevier.
- Dyer, Emma. 2020. "Designing Therapeutic Spaces in Schools 3" *How to Communicate Safety, Security and Stability*. ArchitectureandEducation.org.
- Ecologist. 2024. Informed by Nature. TheEcologist.org.
- Eisen, S.L., Roger Ulrich, Mardelle Shepley, James Varni, and Steven Sherman. 2008. "The Stress-reducing Effects of Art in Pediatric Health Care" *Art preferences of Healthy Children and Hospitalized Children*. *Journal of Child Health Care* 12, no. 3: 173–190. <https://worldwidescience.org/topicpages/c/care+pediatric+hospital.html>.
- Ellis, Mary Ellen. 2022. "The Role Art Therapy Can Play in Healing PTSD". *Bright Quest Treatment Centers*. Accessed October 21, 2023. <https://www.brightquest.com>.
- Fanack Society. 2020. "Population of Palestine". <https://fanack.com/palestine/population-of-palestine>.
- Farge, Emma. 2024. "UN Expert says Israel has Committed Genocide in Gaza, Calls for Arms Embargo". REUTERS. [https://www.reuters.com/world/middle-east/un-expert-says-israel-has-committed-genocide-gaza-calls-arms-embargo-2024-03-26/#:~:text=GENEVA%2C%20March%2026%20\(Reuters\),sanctions%20and%20an%20arms%20embargo](https://www.reuters.com/world/middle-east/un-expert-says-israel-has-committed-genocide-gaza-calls-arms-embargo-2024-03-26/#:~:text=GENEVA%2C%20March%2026%20(Reuters),sanctions%20and%20an%20arms%20embargo).
- Francis Kéré Architects. 2016. Lycée Schorge Secondary School. Accessed October 21, 2023. <https://www.dezeen.com/2017/10/17/movie-diebedo-francis-kere-gando-school-burkina-faso-interview-video>.
- Gaminiesfahani, H., M. Lozanovska, and R. Tucker. 2020. "A Scoping Review of the Impact on Children of the Built Environment Design Characteristics of Healing Spaces". *HERD*. 98-114. <https://pubmed.ncbi.nlm.nih.gov/32077757>.
- Ghadban, Shadi Sami. 2008. "Architecture in Palestine". *Encyclopaedia of the History of Science, Technology, and Medicine in Non-Western Cultures*, edited by Helaine Selin. 225–238. Dordrecht: Springer.
- Grabar, Oleg, and Gülru Necipoğlu. 1998. "Muqarnas". *An Annual on the Visual Cultures of the Islamic World*. Accessed October 23, 2023. <https://brill.com/display/serial/MUQ?language=en>.
- Guhl, Amy. 2022. "5 Principles of Trauma-Informed Design". Neumann-Monson Architects. Accessed November 3rd, 2023. <https://neumannmonson.com/blog/principles-trauma-informed-design>.
- Hall, Edward. 1966. *The Hidden Dimension*. Anchor Books Editions. New York City: Knopf

- Doubleday Publishing Group.
- Harden, Jeni. 2012. "Good Sitting, Looking and Listening: The Regulation of Young Children's Emotions in the Classroom". *Children's Geographies* 10, no. 1: 83–93.
- Hassouna, Mohammad, and Zoe Sinclair. 2012. "Environment and Security In the Occupied Palestinian Territory". *Zoi Report*, Otto Simonette. <https://issuu.com/zoienvironment/docs/palestine>.
- Impression. 2024. Impression Artisans of Limestone. <https://www.limestone.com>.
- Interrelate. 2023. "How Art Can Heal Trauma". Bella Vista. <https://www.interrelate.org.au/news-media/blogs/november-2021/how-art-can-heal-trauma>.
- Jafar Tukan and Partners. 2000. SOS Children's Village. <https://www.archnet.org/sites/1278>.
- JLG Architects. 2023. "Trauma-Informed Design". *New Directions in Health Care Architecture*. <https://jlgarchitects.com/trauma-informed-design>.
- Joseph, Anjali. 2006. "The Impact of Light on Outcomes in Healthcare Settings". *Center for Health Design*. https://www.healthdesign.org/sites/default/files/CHD_Issue_Paper2.pdf.
- Kenkmann, Andrea. 2011. "Power and Authenticity. Moving from the Classroom to the Museum". *Adult Education Quarterly*, 61 no.3. 279-295. <https://journals.sagepub.com/doi/10.1177/0741713610392766>.
- Kittaneh, Mohammad. 2018. "Disruption of West Bank's Land Based on the Agriculture Value". Research Gate. https://www.researchgate.net/figure/Disruption-of-West-Banks-land-based-on-the-agriculture-value-Source-Based-on-data-from_fig2_329329179.
- McCarter, Sheila and Woolner. 2011. "How Listening to Student Voice can Enable Teachers to Reflect on and Adjust their use of Physical Space." *Educational and Child Psychology* 28, no.1: 46-63. <https://architectureandeducation.org/2020/03/12/designing-therapeutic-spaces-in-schools-3-how-to-communicate-safety-security-and-stability>.
- McClelland, D., and C. Gilyard. 2019. "Calming Trauma: The Brain and The Limbic System." Accessed January 5, 2024. <https://www.phoenix-society.org/resources/calming-trauma>.
- McHarg, Ian. 1971. *Design with Nature*. New York: Wiley.
- Medd, Todd and Tracy Nicholson. 2023. "Trauma-Informed Design" *New Directions in Health Care Architecture*. Minnesota: Physician Publishing INC. MPP. https://www.mnphy.com/0623_story_one_todd_medd_tracy_nicholson.
- Medd, M. 1976. *A Right to be Children*. York: University of York, Institute of Advanced Architectural Studies. <https://architectureandeducation.org/2020/03/12/designing->

- therapeutic-spaces-in-schools-3-how-to-communicate-safety-security-and-stability.
- Muhaisen, Ahmed. 2016. "Development of the House Architectural Design in the Gaza Strip." *Athens Journal of Architecture*, 2, no. 2: 131-150.
- Ott, Clara. 2021. "City Kids Educational Center". Barker Associates Architecture Office. United States. <https://www.archdaily.com/977600/city-kids-educational-center-barker-associates-architecture-office>.
- Park, Jin Gyu. 2009. "Color Perception in Pediatric Patient Room Design." *Health Environments Research and Design*, 2, no. 3: 6–28.
- Pearson, Michelle, Kristi Gaines, Debajyoti Pati, Malinda Colwell, Leslie Motheral, and Nicole Adams. 2019. "The Physiological Impact of Window Murals on Pediatric Patients." *Health Environments Research and Design*, 12, no. 2: 116–129.
- Pietromarchi, Virginia. 2023. "Why do some Palestinian Teens in Jenin Dream of 'Martyrdom'?" *Israel War on Gaza*. Al Jazeera. <https://www.aljazeera.com/news/2023/7/14/why-do-some-palestinian-teens-in-jenin-dream-of-martyrdom>.
- Plan International. 2023. "Child-Friendly Spaces in Emergencies." *A Child-Friendly Space is a Safe Place Set up for Children Affected by Emergencies*. Accessed January 22, 2024. <https://plan-international.org/emergencies/child-friendly-spaces>.
- Reeve, Angela, Katharina Nieberler-Walker, and Cheryl Desha. 2017. "Healing Gardens in Children's Hospitals: Reflections on Benefits, Preferences and Design from Visitors' Books." *Urban Forestry and Urban Greening* 26: 48–56. <https://www.sciencedirect.com/science/article/abs/pii/S1618866716303089>
- Rong, Weihang, and Azizi Bahaudin. 2023. "Heritage and Rehabilitation Strategies for Confucian Courtyard Architecture: A Case Study in Liaocheng, China." *Buildings* 13, no. 3: 599. <https://www.mdpi.com/2075-5309/13/3/599>.
- Rowland, Reese. 2015. "Experimental Architecture for Children: Designing on a Bent Knee." Video, 23:56. TEDxMarkhamSt. Accessed January 22, 2024. <https://www.youtube.com/watch?v=TSKfw5FJERo>.
- Rustom, Reema. 2023. Photographs of Jenin. Private Source.
- Scott, Sarah. 2010. *Architecture for Children*. Australia: ACER Press.
- Shafiei, Mehr. 2018. "Veiled in Secrecy" *The Habitat for Orphan Girls by ZAV Architects, Iran*. The Architectural Review. <https://www.architectural-review.com/awards/ar-house/veiled-in-secrecy-the-habitat-for-orphan-girls-by-zav-architects-iran>.
- Shamisti, Fadi. 2023. "Humanitarian Shelter Impact Of The Israeli Forces Operation In Jenin -Dashboard". Global Shelter Cluster. ShelterCluster.org.
- Sherman, Sandra, Mardelle Shepley, and James Varni. 2005. "Children's Environments

- and Health-Related Quality of Life: Evidence Informing Pediatric Healthcare Environmental Design". *Children, Youth, and Environment. Environmental Health, and Other Papers*, 15 no. 1, 186-223. Children Youth and Environments. Cincinnati: University of Cincinnati.
- Sherman, Sandra, James Varni, R. S. Ulrich, and Vanessa Malcarne . 2005. "Post-occupancy Evaluation of Healing Gardens in a Pediatric Cancer Center". *Landscape and Urban Planning*, 73 no. 2, 167–183. <http://doi.org/10.1016/j.landurbplan.2004.11.013>.
- Sinclair, Z. and Mohamad Hassouna. 2012. "Environment and Security: In the Occupied Palestinian Territory". ZOI Reports. <https://zoinet.org/wp-content/uploads/2018/02/Palestine.pdf>.
- Sternberg, Esther. 2010. *Healing Spaces. The Science of Place and Well-Being*. Cambridge, MA: Belknap Press Of Harvard University Press.
- The Hindu Data Team. 2023. "How Israel Controls Movement of Men and Material In and Out of Gaza". The Hindu. Archived from the original on 2 November 2023. <https://www.thehindu.com/data/how-israel-controls-movement-of-men-and-material-in-and-out-of-gaza-data/article67484056.ece>.
- The National Child Trauma Stress Network. 2023. "Complex Trauma: Effects". <https://www.nctsn.org/what-is-child-trauma/trauma-types/complex-trauma/effects>.
- Tse, Mimi, Jacobus Ng, Joanne Chung, Thomas Wong. 2002. "The Effect of Visual Stimuli on Pain Threshold and Tolerance". *Journal of Clinical Nursing*, 11 no. 4, 462–469. <https://europepmc.org/article/med/12100642>.
- Ugurlu, Nilay, Leyla Akca, and Ceren Acarturk. 2016. "An Art Therapy Intervention for Symptoms of Post-Traumatic Stress, Depression and Anxiety among Syrian Refugee Children". *Vulnerable Children and Youth Studies*. ResearchGate 11. 1-14. https://www.researchgate.net/publication/301663258_An_art_therapy_intervention_for_symptoms_of_post-traumatic_stress_depression_and_anxiety_among_Syrian_refugee_children.
- Ulrich, Roger, Zimring, C., Joseph, A., Choudhary, R., and Quan, Xiaobo. 2004. "The Role of the Physical Environment in the Hospital of the 21st Century". The Center for Health Design.
- United Nations. 2024. Global Perspective Human Stories. "UN World Court Calls for Prevention of Genocidal Acts in Gaza". <https://news.un.org/en/story/2024/01/1145937>.
- UNICEF (United Nations International Children's Emergency Fund). 2022. "Palestine Education Fact Sheets: Analyses for Learning and Equity using MICS data". MICS-EAGLE.
- UNICEF (United Nations International Children's Emergency Fund). 2024. "Urgent Appeal to Protect Palestinian Children's Future." *Education Cluster, Save the Children*.

- ReliefWeb. OCHA Services. <https://reliefweb.int/report/occupied-palestinian-territory/urgent-appeal-protect-palestinian-childrens-future>.
- UNRWA (United Nations Relief and Works Agency). 2015. "Jenin Camp". *United Nations Relief and Works Agency for Palestine Refugees in the Near East*. <https://www.unrwa.org/where-we-work/west-bank/jenin-camp>.
- Villaba, Milena. 2021. "Photographs of Nursery School". Salas Arquitectura + Diseno. <https://divisare.com/projects/436325-salas-arquitectura-diseno-milena-villalba-nursery-school>.
- Welcome to Palestine. 2016. "Jenin City". <https://www.welcometopalestine.com/destinations/jenin/jenin-city>.
- Whitehouse, Sandra, James Varni, Michael Seid, Clare Cooper-Marcus, Mary Ensber, Jenifer Jacobs, and Robyn Mehlenbeck. 2001. Evaluating a Children's Hospital Garden Environment: Utilization and Consumer Satisfaction. *Journal of Environmental Psychology*. 21. 301-314. 10.1006/jevp.2001.0224.
- Yeung, Sandy. 2009. "An Architecture of Belonging: Housing for New Canadians." University of Waterloo. Accessed January 22, 2024. https://uwspace.uwaterloo.ca/bitstream/handle/10012/4421/yeung_sandy.pdf;sequence=1.