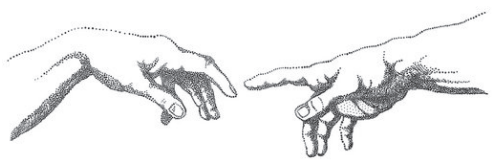

ARCHITECTURE AND HEALTH

THE CARE.FUL MANIFESTO

A research about the effect of architecture on health and wellbeing

2020 - 2021

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UCLouvain
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Année 2020 - 2021

Atelier de recherche en & sur l'Architecture 2020-2021

THE CARE.FUL **MANIFESTO**

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Unacknowledgment

I am not thankful to every government that has not yet imposed health standards in architecture, every architect who believes that he does not have the power to change, and every developer and agent accepting to market unhealthy buildings. The completion of this thesis is no thanks to you. Although I must say, the repulsion of your work has fueled me to prove you all guilty.

Acknowledgments

All that I am or hope to be, I owe to my mother.

To my expert Maider Llaguno, whom I have met during my research and who has instantly become an idol for me, thank you for your guidance and feedback; you never ceased to motivate and support me in my academic and business endeavors.

To my professors for their high standards that pushed my work further when I thought that it reached its full potential.

To Joe, Lynn, Joey, family and friends who have accompanied me through the last five years.

To Ryan, for his advice, faith, and excellent listening capabilities when I have an hour-long monologue about how I plan to advance in my thesis and work.

ABSTRACT

If it is proven that our architecture has curative effects, should architects share the responsibility with doctors when it comes to the general well-being of our society?

Aiming to bridge the gap between architecture and health, this manifesto regroups the collective efforts of authors, whether architects or inhabitants, who take action towards better care and well-being. This is a series of heartfelt true stories that are lived by people like my grandmother, my neighbor, my friend, and maybe you… the reader. In the Middle East, and over the years, there has been an increase in cancer and terminally ill patients requiring care. In Lebanon, care units like palliative care and cancer centers are placed within the dull walls of a hospital built to cure and not heal. This paper explores the notion that space has an integral role in accompanying a patient throughout his journey.

Questions on whether a hospital can become hospitable or even an intriguing place for exchange in the city became the basis of the first architectural approach. While questions on whether care can become the city itself brings us to test the theory of home care pushed to its limits.

I hope that by showcasing successful precedent-based designs like Maggie's and experiments such as Ulrich's *"view through windows"* prove the correlation between architecture and health. Finally, this thesis calls for action on all practitioners of the built environment and sheds light on their duty toward the health of our communities.

To my grandmother and in memory of my grandfather,
thank you, because you showed me the true essence of
care through your love and affection...

Fig.1 - Yasmine preparing her lunch on the fireplace, Qartaba village, 2022
Photography by Author

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Fig.2 - Reconstruction of Hanna's room, his view, and his walnut tree in the village Lebanon, 2022. *Photography by Author*

1 INTRODUCTION

1.1 Take Care

On the 17th of June 2018, my grandfather was diagnosed with liver cancer[1]. After extensive treatments and several visits to the operation room, he was diagnosed as a terminally ill patient with as little as two months to live. His children, wanting him to be in a supervised environment, ironically kept him in a dull hospital room under robotic surveillance for weeks. For Hanna, my grandfather, this was not the way he planned to spend the last moments of his life. He dreamt of being in his sunbathed room in the mountains lying on his warm bed under his large bay window that opens up to his fruitful agricultural land and Lebanese cedars on the facing cliffs*(fig.2)*. For Hanna, all he wanted in his last few days on earth was to be home close to his family and church, and insisted on pursuing his day-to-day activities, farming. His children refused to take him out of the hospital's care, disregarding his wishes, aiming to keep him in the most recovering environment possible. However, lacking the knowledge and awareness, they did not understand that what my grandfather needed was not a place of cure but rather a place of care.

Luckily for Hanna, one day, a doctor went into his room and urged his children to take him home and explained that they not only can't cure him, but his environment was affecting his health and thus could not care for him. The following day Hanna woke up at sunrise in his sunbathed bedroom as he did for the past 80 years, walked down the smudged pathway to his fertile land and cultivated its goods, had lunch under the walnut tree in front of his house, and then went back inside to sleep in his calm and fresh linen. For him, this was his ideal place between life and death, his

1 The following paragraph will narrate the story of my grandfather to let the reader enter the healing dimension that will be explored in this thesis. The descriptions will be useful to understand the origin of this thesis questioning and reflection that is strongly influenced by Hanna.

place of care, his home.

Nature, natural light, the autonomy of space, materiality, and many other elements create a *'positive distraction,'* explained Roger Ulrich, professor of architecture for Healthcare Building Research Center in Sweden. Experiments show that a positive distraction is possible thanks to a careful design that incorporates those healing elements to reduce stress levels in patients and ultimately make their healing process more manageable[2]. This incident that incited my grandfather to choose a natural selection of his healing place, surrounded by positive distractions, his home, led me to question our duty, as architects, toward people's wellbeing. Throughout this research, I have discovered the taboos and the lack of awareness when talking about health.

Based on the discourse of healing architecture and my conviction that architecture can affect both our body and soul, it felt natural to undertake one of the most vulnerable healthcare systems in the Middle East, palliative care for cancer patients in Lebanon. This study began with the investigation of the current healthcare industry and healing design practices to find that we currently have a gap between the hospital environment and the home. A care center shouldn't be perceived as a deadhouse, it is not only a hospital, it is not just for patients, and it is not just for the old. A healing architecture constitutes the place that improves the life quality of patients and enables them to efficiently pursue their day-to-day activities without having their health as an obstacle. **How can architecture overturn institutional norms of the care industry and engage elements that can contribute to health?**

1.2 Methodology

If our architecture has healing effects, must architects bear the same accountability as doctors when it comes to the general welfare of our society? With that in mind, this thesis aims to manifest the power of healing architecture by investigating how architectural manipulation can enhance various healing techniques to achieve health-conscious spaces. Ultimately this thesis calls for action on all actors in the building environment to start taking responsibility for our user's health by supporting its claims through two different acts of care, the first manifested by inhabitants themselves in a vernacular approach and without necessarily being intended. In contrast, the second is an act of care carefully assembled by architects in the case of Maggie's centers through evidence-based design. The often comparison done throughout the thesis between Europe and the Middle East, specifically Lebanon, is to show the reader the strong deficiency of care in the latter.

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2 Ulrich *"View Through a Window May Influence Recovery from Surgery"*

This paper bases itself on various studies and interviews. On the one hand, when talking about a therapeutic environment and what care is, impromptu and conversational interviews were conducted with Lebanese citizens to unravel their knowledge and subjective perceptions of the subject. The interviewees vary from 20 to 80 years old; they are people from the village of Qartaba, patients and doctors that I have met in the hospital of Notre Dame des Secours, and others. Viewing this subjective understanding of care allows the thesis to grow on a personal and human-oriented scale needed for the topic of care. On the other hand, when investigating the case studies, an official interview with an architect[3] working on one of the projects was made to understand their conceptual, practical, and architectural approach to the subject. The questions established covered the main topics of 'for who is care?', 'what is the future of care?', and 'obstacles encountered in the realization of the project.' This type of interview allows the concretization of the ssubject and proves the effectiveness of the healing toolbox set in this thesis.

1.3 Thesis structure

The following paper will first briefly explore a historical perspective of health and palliative care to understand its origins, values, and how it has evolved to what it is today. Second, it will explain what care is and why re-thinking the spaces of care in the Middle East, specifically *Lebanon*, is crucial in developing a country on a medical, financial and political systems. Also, this notion of care will be pushed further in this chapter by stating the organizations that have been working towards wellbeing today. The chapter Toolbox will manifest all the influential experts that have preceded in exploring this topic by presenting all the experiments on architectural design principles that revolve around the relationship between architecture and health. Then, by examining 3 case studies, 2 of which are the precedent-based design cases of *Maggie's centers* and a third case which looks at the use of those elements in a vernacular context in the *village of Qartaba in Lebanon*. Also, a chapter on architecture and patients will help us put ourselves in the shoes of a cancer patient and understand his typical day at a hospital and see how architecture caters (or not) to his needs throughout his day. Finally, two main directions for the notion of care will be proposed to answer the question, what is the future of care?

3 Online interview done on the October 8,2021 through Zoom by the author with Darron Haylock, architect on the team of Foster+Partners that built Maggie's Center in Manchester UK

Fig.3 - Architecture used as a tool to immerse the patient in positive distractions; reflective ceiling to reflect natural light, curtain partition allowing flexibility of space, large opeing towards the forest, movable chairs.
Tuberculosis Sanitarium by Alvar Aalto

2 CARE

2.1. What is a Therapeutic Environment?

When asked what is a healing environment in a conversational interview conducted with forty individuals, thirty-two people mentioned hospitals. Only eight people considered that healing could occur in alternative spaces like gardens, forests, and thermal baths for example[4]. The contradiction between our needs as hospital users and the architectural qualities of those spaces is impressively blatant. Therefore, it was no surprise that people started questioning this relationship in the past decade.

A therapeutic environment is characterized by having the power to eliminate environmental stressors[5] and favor the creation of a *positive distraction* in space[6]. These positive distractions are mainly needed in stress areas of hospital waiting rooms, corridors, and patient rooms. These can vary from healing gardens to ocean views, from meditation rooms to chapels, pets to children, enabling social support by allowing a sense of control. For example, architects that propose to integrate design elements that can incorporate open spaces without any fixed seating *(fig.3)* can encourage the individual to seek social integration and receive the adequate support that they can get from colleagues and patients with the same medical difficulties[7].

This paper does not propose that architecture has the power to heal on its own but rather to facilitate the creation of a healing environment. Architecture makes way for the integration of healing elements such as light, views, and privacy… As a result, it becomes an essential tool for health.

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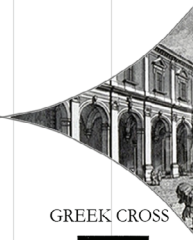
4 Survey with forty lebanese citizens about healing spaces as mentioned in the methodology

5 Environmental stressors include noise pollution, crowds, rush hours, air quality…

6 Stenberg, *Healing Spaces,* 8

7 Smith and Watkin, *Therapeutic Environment Forum*, 1

ARCHITECTURE

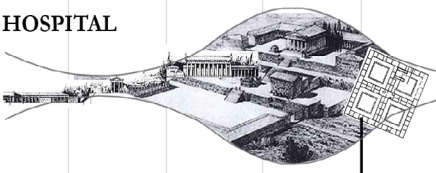


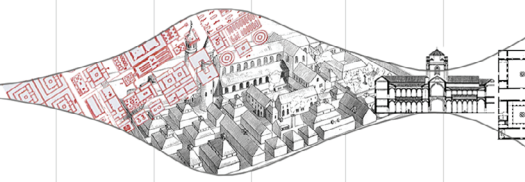
QUADRANGLE

GREEK CROSS

GEOMETRY OF HOSPITAL FLOOR PLANS

HOSPITAL





Roman Empire converted to christianity

420BC	300BC	45AD	4th century	1451	151

In acient Greece & Rome, Asklepion became the healing temple of the god of medicine Asklepios. The temple offered what we call today hollistic healthcare. The sanctuary with its natural surroundings invited people to explore the forces of nature.

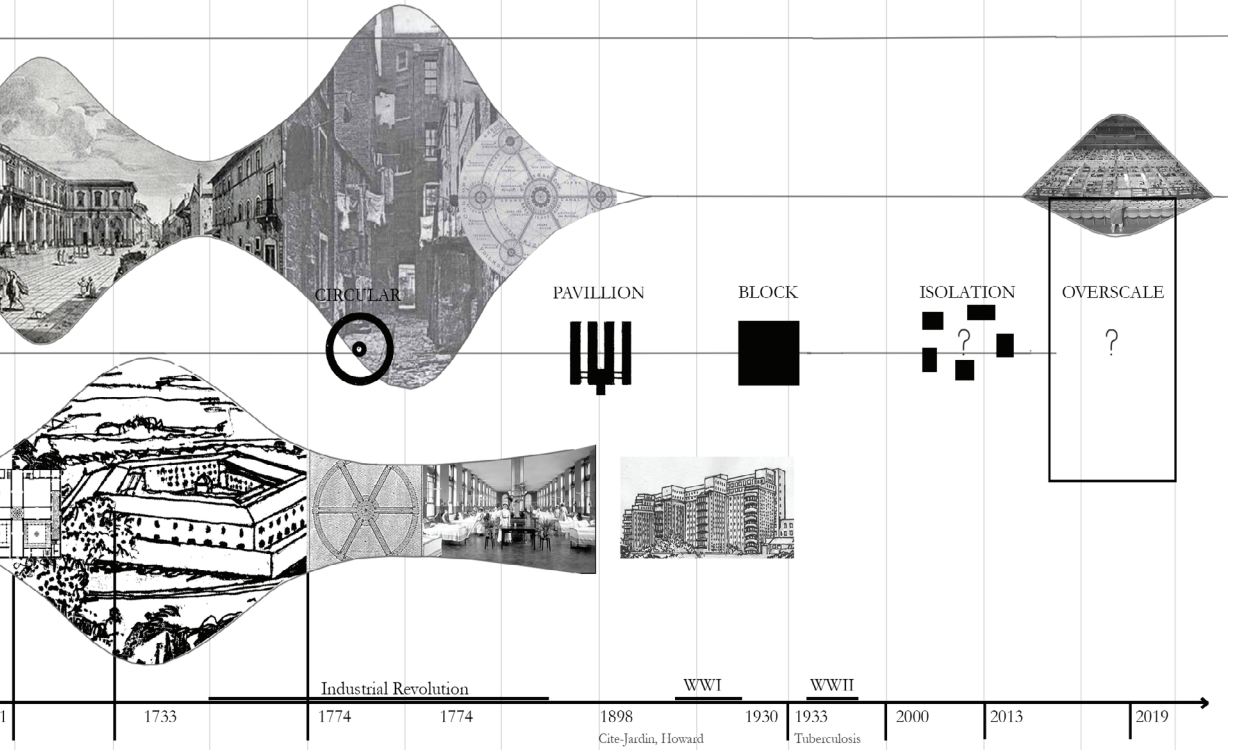
The katagogion in Epidauros, erected in the fourth century BC, was a healing center with a rectangular ground plan, consisting of four courtyards surrounded by colonnades. Used as a blue print for the building of hospitals.

With Roman Empire, military hospital, was a regular barrack adapted for the sick and wounded soldier

The catholic church became the main health providor. Establishments for the travelers, pilgrims and poor, were associated with the monasteries. General care became part of the communal life of the monks and indicated a shift away from their more individualistic lifestyle.

The medieval (cloister) hospitals were mostly built as elongated rooms. The ground plan of the church and hospital in Cues reveals a tetradic spirit, in which a sense of enclosure is dominant.

The greek cross-shaped plan became a popula architectonic device They followed religious-politica reasons. The *Hospita Real in Granada* cruciform layout has 4 enclosed areas and a central tower, the ultimate tetradic design.



Industrial Revolution

WWI

WWII

1733

1774

1774

1898

1930

Cite-Jardin, Howard

1933

Tuberculosis Sanitarium Alvar Aalto

2000

2013

2019

With plagues, *The Laemocomium (Italy)* started its existence as a hospital. The pentagonal building was intended to protect the military authorities from the risk of contagious diseases.

Hospital design reached a new phase with the introduction of a circular building, which had different wards, radiating from a center point. Antoine Petit took the first exploratory steps in 1774. He proposed, in his *'Mémoire sur la meilleure manière de construire un hôpital de malades',* a circular hospital lay-out with six spokes.

Florence Nightingale bestowed with her experiences in the Crimean War, gave advice to minimize the spread of disease by creating adequate space and sufficient ventilation. However, it shortly failed because of the need for space. This configuration became the basis for high-rise hospitals.

The Beaujon Hospital Paris, by the architect J. Walter was a 13 story high, cast-west orientated building is described, as a *'composition horizontale de type pavillionnaire et la disposition verticale fonctionelle'*, but seems a long distance away of the original intentions of the pavilion-type of hospitals.

It was up until 1948 that British doctor Dame Saunders established the first hospice welcoming terminally ill patients. Healthcare started taking forms different than curing patients.

Emergence of the WELL certification to evaluate the himpact of space on wellbeing

With the emergence of Corona Virus people started looking to isolate spaces and patients together. Basketball courts, train stations, and concert halls were trasnformed into hospitals to aid the ill.

Fig.4 - Summary of the evolution of hospitals in parallel to what was happening in the the city's architecture
Timeline by Author

Fig.5 -Collage showing the hospital *(left)* of yesterday that evolved to become the hospitals that we know today *(right)*
left: pavillion hospital of yesterday having abundance of light, ventilation and view to the exterior
right: hospital beds of today having more privacy but losing the natural aspects that were present before
Collage by Author

2.2. From a care perspective

2.2.1. Evolution of Care

From a historical perspective, healthcare workers' and home caregivers' primary goal has been the contraction of patients' suffering, thus evolving into a constant search for an environment of comfort that promotes healing and wellbeing. This act of relieving pain took the title of care.

Early on, homes were the first place of caregiving where the sick would lay in their bedroom, which emitted a sense of familiarity and comfort. Feeling at home was thus at the root of the healing process of patients. In general, the architectural typology of early bedrooms included a window or even a large bay that allowed the natural illumination and ventilation of the space. The openings were frequently oriented towards a scenic view of the property's garden, giving a fresh sensation. Although, at the time, humans did not have advanced architectural knowledge, they established the importance of utilizing those primary natural elements to provide a sensation of warmth and comfort inside homes. The spaces offered personalized qualities where family life practices and professional help were intertwined[8].

As the Roman Empire converted to Christianity, it became mandated that the church was responsible for caring for the infirm. Religious establishments, such as monasteries, opened their doors to welcome the sick and wounded and provide support for the travelers and those who did not have family members or funds to get a caregiver at home. The catholic church became the leading healthcare provider. In these spaces, patients would typically find themselves in a room with high ceilings and extensive spans going from one column to the other. The facades are generally punctured with repetitively large bays that allow an abundance of sunlight to warm the hall's inside *(fig.5- left)*. The hall could accommodate many patients at once, which created a collective notion of care but lacked all forms of privacy needed to heal[9]. The notion of collective care later became the basis of public hospitals that eventually became more separated from the church and gradually required an independent structure for its well-functioning. Following the evolution of technology, hospitals started integrating x-ray machinery, and therefore care became more and more focalized within those institutions rather than at home. The monarchs of the 6th century, notably Charlemagne, mandated that all hospital wards must be connected to a church. The wards were created in a way that all patients could see the altar so that religion stayed at the center of healing. Years later, this spatial organization became

8 Alves, *"Healthcare architecture: History, Evolution, and new vision"*.

9 Gormley, *"The history of hospitals and wards"*, 27.

Fig.6 - Patient wing with sun terrace, 1930, *Tuberculosis Sanitarium by Alvar Aalto*

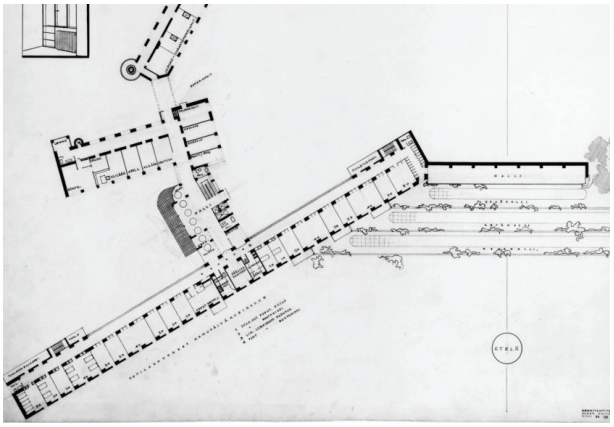


Fig.7 - Plan of Paimio Sanatarium showing the orientation of each wing, *by Aalto*

Fig.8 - Sun Therapy, Patients in the top floor sun terrace, 1933, *by Aalto*

a hospital replacing the altar with the nurse's station[10]. In the late 1700s, a movement for reevaluating this distribution based on hygiene started with Florence Nightingale, who developed a ward plan allowing all patients access to natural light, ventilation, and landscape. However, this pavilion system shortly failed because of the need of space[11]. In the name of medical advancement, people hastily started the machine hospital, where white walls and ambient fluorescent light became the primary mood throughout the hospital spaces.

2.2.2. Healthcare

Men and women have been searching for a meaningful place to heal because the design characteristics that we have accepted as part of our rehabilitation and treatment, birth and death, are not the ones we obtain as a setting for healing. Therefore, the notion of care roots in a traditional understanding of home by utilizing domestic ideals of familiarity through architecture.

"During the modern era, … the hospitals became more machine than a monument, a stripped-down, functional series of boxes accommodating the increasingly complex technical apparatus for prolonging life. Architecture flat-lined[12]".- Edwin Heathcote, Architect

Decades after World War II, few health-conscious architects and practitioners questioned the designs of those institutions. Human-oriented strategies were slowly starting to become the focus after an era of destruction and losses. *Palliative care, Hospice, Cancer Centers, and Asylums* became unique terms characterizing the new age of care.

In Piamo, Finland, Alvar Aalto built a Tuberculosis Sanitarium that yields a healing environment to Tuberculosis (TB) patients. Knowing that TB is a lung affecting disease due to unsanitary ventilation, Aalto aligned his healthcare center on a North-South axis, forging *"sun balconies"* that enabled the patients' full access to sunlight, natural ventilation, and views *(fig.6-8)*. Although the disease started acquiring resistance to TB drugs, solar therapy proved effective as patients responded positively to this health-focused environment. As a result, scientists investigated the efficiency of this low-cost prescription through clinical trials. However, it was not until 2006 that Science magazine proved its credibility by explaining that the retention of vitamin D from the UV rays was the key to healing patients[13]. The Piamio floor plan emerged from a function-tailored approach; rooms of similar nature are grouped in the same wing, while standard functions are located in the center of the building. Orientation

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10 Ibid. 28

11 Burpee, *"History of healthcare architecture"* .

12 Lubis, *"History and Theory in Spatial Design: The Maggie Centres".*

13 Hobday, "*The Light Revolution: Health Architecture and the Sun",* 57

was a crucial aspect of this healing architecture as each branch was oriented to the optimal orientation needed for the type of patient occupying it. Ventilation was a critical aspect of the design, as the windows were double opening; when required ventilation, the window opened from the top, reminiscent of a 'health window' as Aalto calls a window in the vertical position.

2.2.2a *Hospice*

In 1948, British doctor Dame Saunders established the first hospice welcoming terminally ill patients[14]. On the one hand, this initiative opened new doors never yet explored and shed light on the importance of respecting patients' end-of-life wishes. On the other hand, hospitals of that time were often designed with a standardized approach looking more like commercial office blocks than healing spaces; when decided to open a care unit within the hospital grounds, it was the same rooms that were nonchalantly painted with brighter colors to greet the terminally ill. Therefore, hospice and hospitals share the same architectural peculiarities used at once for recovery and healing. In 2007, the King's fund and prince's foundation launched a competition as part of the King's *Healing environment program* that focused on evaluating and redesigning healthcare spaces. After several studies, they published a set of principles for hospice design that included titles such as *natural environment, natural materials, legibility, arts and crafts, respecting time (through the scale of architecture), comfort, dignity, and economy.*[15]

2.2.2b *Palliative care center*

Palliative, derived from the Late Latin root *"palliate,"* first recorded in 1540 and defined as to cover up, *"to relieve or lessen without curing",* thus without any medical intervention[16]. It is essential to note the difference between palliative care and hospice as explained by VITAS healthcare:

"Hospice is comfort care without curative intent; the patient no longer has curative options or has chosen not to pursue treatment because the side effects outweigh the benefits. Palliative care is comfort care with or without curative intent".[17]

Although several palliative care units have opened their doors since 1950, many still regarded them as ugly spaces to hide the ill. With this mindset, palliative units were hidden in the back of hospitals and failed to meet their goals. It was up until 1989 that the World Health Organization recognized

14 UPMC, *"palliative and supportive institute".*

15 The King Fund, *"principles of hospice design".*

16 Oxford dictionary, *"palliative care".*

17 VITAS healthcare, *"hospice and palliative care".*

the palliative care act as a distinct movement[18]. Independent palliative care centers started to emerge in structures outside the hospital buildings, such as Maggie's centers which proposed design principles that embedded open kitchens and dining to allow the shared laughter around the table, natural light, greenery, and access to nature. As explained further in chapter 4, Maggie's Center is an NGO that was formed by a cancer patient and architect Maggie Jencks after her battle with cancer that taught her what she needed to acquire from architectural space and how her surrounding had an effect on her psychological and physiological well-being. Slowly but surely, the bed capacity of palliative care has increased by 157% in US hospitals between the years 2000 and 2011, according to the Center to Advance Palliative Care, making it prevalent in 75% of hospitals[19].

2.2.2.c *Cancer Care*

In this thesis, a cancer care center merges two disciplines of care: oncology and palliative care. Contrary to the past two terms, the cancer center is tailored specifically for cancer patients only and allows the patient to pursue chemotherapy, radiation, counseling, and various treatments. Like palliative care, it gives the patient a choice to either perceive medical intervention or receive support.

To narrow down the endless possibilities of care, this thesis will explore the future of careful spaces in the case of a cancer patient by merging the healing design principles set for palliative care with applicable design standards needed for cancer treatment.

2.3. Carelessness; care in Lebanon

As Verderber and Refuerzo wrote, *"Palliative architecture rejects the machine for healing and pure rationalism.[20]"* Worldwide it is estimated that 40 million people need Palliative care (PC) each year, yet only 14% receive the services[21]. The WHO assembly recognized palliative medicine as a fundamental component of integrated, people-centered health services, not as a supplement or an option. However, the impact and acceptance of this topic differ in the different geographic locations.

In Europe, the notion of palliative care has become more popular. In Belgium, for

18 Salima, *"A concept analysis of palliative care in the United States".*

19 Ibid

20 Verderber and Refuerzo, "*Innovations in Hospice Architecture".*

21 American University of Beirut. Integrating palliative care into the health system in Lebanon

example, studies that compared the reception of PC in 2008 and 2015 showed that more than half of terminally ill patients received care in 2015, representing a 10% increase from 2008. Also, when studying the choice of place of death, it was shown that in 2008 63% of cancer patients died in hospitals, 23% at home, and 7% in facilities, while in 2015, the number of hospitals decreased, and facilities increased[22]. Countries in the eastern Mediterranean region, on the other hand, suffer from a shortage in PC which are not fully integrated into their health systems[23], where roughly an estimated 5% of terminally ill patients receive this service. According to a report published by the American University of Beirut in 2017, an estimated 15,000 patients need PC each year in Lebanon[24], a number that is still increasing. In contrast, around 100 beds in PC units are available.

On a demographic level, Lebanon had the highest percentage of people aged 65 years and older (7.3%) in the Arab region, a number that is estimated to reach 12% by 2030[25]. The rapidly aging population makes PC an essential component of the health system, relieving the government and medical facilities from such expenses. Despite these observations, few patients who need PC receive the care they need[26]. Most PC services are only provided in main cities, **making it impossible to be treated while living in rural areas despite the presence of most healing elements required for care.**

On an economic level, the Lebanese government cannot fund 'luxury' units such as the palliative services resulting in the privatization and challenging access to them in private hospitals. However, Roger Ulrich synthesizes that although building a healing architecture might cost 5% more, it will give 20% operational savings and thus heal the patients faster, making it less of a monetary issue to the government[27].

In conclusion, palliative care services are not a familiar topic to be discussed in Lebanon, which has led this thesis to study the notion of the future of care in this specific context by investigating two reflections, *'care in a hospital' &'care at home.'*

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22 Belgium.be, "end of life care"

23 Zeinah, Al-Kindi, et al. "Middle East experience on palliative care", 94

24 AUB. Integrating palliative care into the health system in Lebanon

25 Mehio and Kronfol. Aging in Lebanon : Perils and Prospects

26 AUB. Integrating palliative care into the health system in Lebanon

27 In light of the current economic crisis that Lebanon is facing and the pandemic that has worn off the health systems around the world, considering the integration of palliative care services might alleviate the overwhelming pressure that the government has on the long run.

2.4. How are we cared for today?

In the last quarter-century, actors of the built environment started accounting for the impact of architecture on health. Many certifications emerged to study architecture footprint on the environment, such as BREEAM *(1990),* LEED *(1998)*... However, it was up until 2013 that the WELL AP certification assessed the impact of architecture on its users. *"The WELL Building Standard is a road map for creating and certifying spaces that advance human health and well-being… by including ten design concepts: air, water, nourishment, light, movement, temperature, sound, materials, light, and community*[28]*."*

According to WELL organization, when it comes to Europe, the May 2020 numbers indicate 1,822 WELL projects in 25 countries, about 11.7 million sqm dedicated to wellness. While, when it comes to the Middle East and North Africa, the statistics show that there are considerably fewer projects that are WELL accredited, being 28, spanning six different countries,[29] and a rough 0.3 million sqm. Lebanon does not have any WELL accredited project that fortifies this thesis's claim on the urgency to progress Lebanon's health and wellbeing.

Although there are positive attempts to pave the way between architecture and health, no one has addressed the importance of local specificity that dictates the familiar environment needed for patients. Organizations are stuck in setting standards and norms for the healthy construction of this subjective dimension of care and well-being. People perceive space with their entire bodies through movement, memory, and imagination that forges a sub-conscious dialogue between an individual and architecture[30]. Health in architecture should be tailored to the local person's needs and comfort, allowing the user to create his own standards through the flexibility and adaptability of architecture.

However, what can be done on a governmental level is awareness. Ministries of education must integrate the notion of healing spaces in their curriculum. In most architecture faculties, courses about healing architecture are null, graduating students with a tunneled vision approach to health = hospitals as we know them today. This thesis aims at broadening the horizon and test the different systems of healing spaces in hope to show the stakeholders the urgency of the topic.

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28 WELL. "what is well certification"

29 The countries are: Saudi Arabia, UAE, Qatar, Turkey, Egypt, and Morroco

30 Osea "Exploring sensory design in therapeutic architecture"

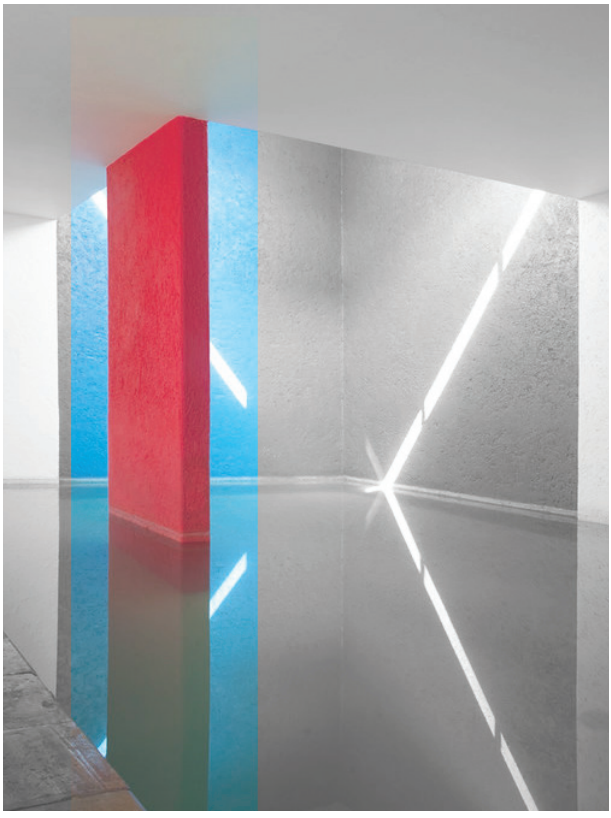

Fig.9 - Contemplation and infinity in Casa Guillardi, Mexico, by *Louis Barragan, edited by Author*

3 A HEALING TOOLBOX

The body has an amazing ability to 'self-heal' when it is in a positive environment. This power is due to our body's ability to tap into the *"body's pharmacies*[31]*"*, as Stenberg explains[32]. In the early 1800s, the notion of the placebo effect surged. *"A placebo pill is a sugar pill, a fake surgery, among many other 'fake' treatments that doctors use to make the patient feel better on a psychological and physiological level"* explained MD Lissa Rankin[33] in a 2012 TED Talk. In an article published by Harvard Medicine, Ted Kaptchuk defines its biological and psychological mechanism as the release of *'happy hormones'* like serotonin and dopamine[34]. He notes that *"Your mind can be a powerful healing tool when given the chance...and thus stimulating healing has been around for millennia."* Consequently, they all infer that there is an environmental factor in play to harness the brain's healing power. Architecture can manipulate space to manifest health. Therefore, can you give yourself a placebo without even taking a pill? What are the surrounding design principles and elements that promote self-healing?[35]

3.1. Water

The water source has been a critical element in the history of settlements. Water symbolizes life and, with it, health. Water forms a place for social integration around which people assemble, walk, and bathe. An architect can manipulate the effects created by the reflection of water and its movement in space. A simple water sur-

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31 By pharmacies, Stenberg means the release of endorphins such as dopamine and serotonin, which allow the body to feel less pain and make way for faster healing.

32 Stenberg Healing Spaces

33 Rankin, "Is there scientific proof we can heal ourselves?"

34 According to Kaptchuk, the essential part is the nurturing care of a healthcare provider, even more than the mind's power, for example, the doctor is the placebo

35 Kaptchuk, "The Power of Placebo Effect"

Fig.10 - Forest Bathing *Photo by Rafaela Lima*

face placed next to or under a wall can play with notions of limits making it seem infinite. The composition of the soft element of water with harder ones like walls and ceilings creates a spatial tension by multiplying the physical space. This effect can be seen in the architecture of Louis Barragan's Casa Guillardi in Mexico, *(fig.9)* where the column placed inside a water surface seems infinitely sinking under the surface. Also, the sound of water and waves have been proven to have a calming effect, having a contemplative power on the brain by drowning a person's gaze into infinite space to meditate.

Aside from the psychological effect, the contact or proximity of water relieves tension in the body. The Romans valued this healing tool by incorporating it in their thermal baths. The thermal temperature of those spaces not only opened the body to heal but also served in the sustainability of their architecture.

3.2. Land

"The term Shinrin-yoku was coined by the Japanese Ministry of Agriculture, Forestry, and Fisheries in 1982, and can be defined as making contact with and taking in the atmosphere of the forest," explained Park Bum Jim in an article where he studied patients in 24 forests[36]. Humans have spent 99% of their evolution in contact with nature, so we are adapted to it. However, more and more people started adapting to urban environments, although their physiology is still linked to a natural atmosphere. In a study, Dr.Berman Marc realized that the urban environment places much stress on our bodies; the comfort state of our bodies comes when it is harmonized with the environment. In forests, trees and other woody plantations release a chemical called phytoncides, responsible for slowing down brain activity and thus putting us in a relaxing state, decreasing stress[37]. As such, the experiment of Park recorded the pressure of individuals walking in 24 different forests. This showed that wood scent and immersion in a natural environment decreased systolic blood pressure. Trees create involuntary attention that allows us to gaze peacefully into them. In contrast, buildings in urban environments create directed attention that asks a person to move around them with care, thus increasing stress *(fig.11)*. Given this recent literature, must people consider more natural building materials like wood? Must they mandate that every room should have the right opening to a view?

In a continuous research done by UCLouvain, Dr. Maider Llaguno and Sergio Altomonte have conducted a study that *"quantify stress level reduction induced by urban greenery perception"*. This study acknowledges the effect of nature but rather studies the design

36 Park, Bum Jin et al. "The physiological effects of Shinrin-yoku". vol.15

37 Ibid.

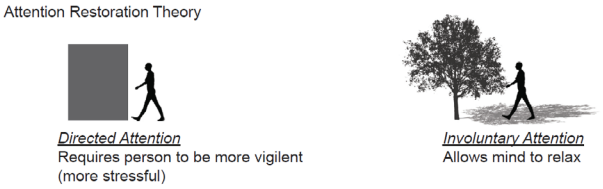

Fig.11 - Attention restoration theory of Dr. Marc Burman

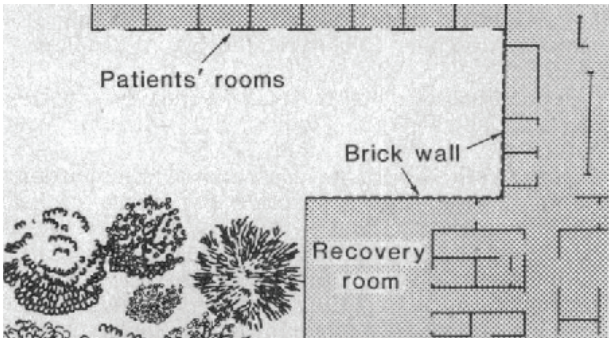

Fig. 12 - Plan of the second floor of the study hospital showing the trees versus wall window views of patients. Data were also collected for patients assigned to third-floor rooms. One room on each floor was excluded because portions of both the trees and wall were visible from the windows. *by Ulrich*

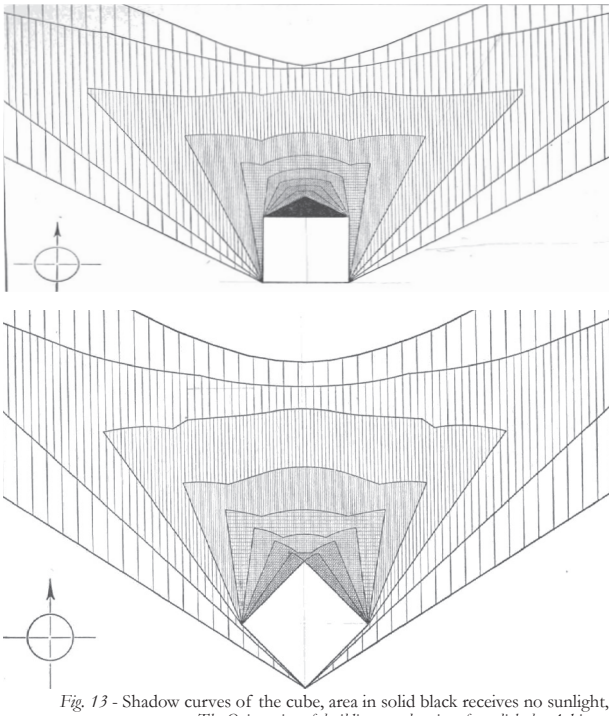

Fig. 13 - Shadow curves of the cube, area in solid black receives no sunlight, *The Orientation of buildings or planning of sunlight by Atkinson*

characteristics of urban green infrastructure and their effect on people's stress level reduction. Through eye tracking data, the results showed an important difference between green and non-green blocks that affects stress levels in a person.[38]

3.3 Air

In Healing Spaces, Esther Sternberg says that Healing is a *"turning point of your mind's awareness from a focus of your inner self to a focus of the outer world.[39]"* Therefore, windows pose as a primary element that allows sounds and smells to come through air, providing the patient with an awareness of his external surroundings, anticipating healing.

3.3.1. Views Through Window

In 1984, Roger Ulrich led a study to explore the effect of windows on 23 patients in a Pennsylvanian hospital. His study divided patients into two groups, the first, he called the *"wall view group,"* had their windows open to a brick wall, and the second, the *"tree view group,"* had their windows open to natural scenery as seen in figure 12. Ulrich compared the length of hospitalization and the need for pain-relief medications in members of each group post-surgery. This showed that the tree view patients with fresh ventilation coming from plants had shorter hospital stays and were in less need of analgesics. The group members also showcased a better mood and attitude throughout their stay. Ulrich noted that *"because most natural views elicit positive feelings, reduce fear in stressed subjects, hold interest, and may block or reduce stressful thoughts, they might also foster restoration from anxiety or stress[40]."* In conclusion, the study implied that the design process of hospital rooms must consider the quality of the patient window view, providing a positive distraction[41].

3.3.2. Orientation

The orientation of roads and cities is a vital parameter in determining sun penetration. Historically, it was believed that to characterize a building as healthy, its occupants must be able to watch the sunrise. This reasoning was based on the fact that sun rays dry the damped concrete and brick surfaces during rainy days preventing humid unhealthy outcomes such as asthma and allergies. To test this theory, William Atkinson formulated a shadow mapping system of 2 squares[42], the first of which

38 UCLouvain, Quantifying stress level reduction induced by urban greenery perception

39 Sternberg. Healing Spaces. 23

40 Ulrich. Healing Gardens: Therapeutic Benefits and Design Recommendations. 420-1

41 Positive distraction, term used by Ulrich to describe the effect exerted by views on patients

42 Hobday, The Light Revolution, p.82

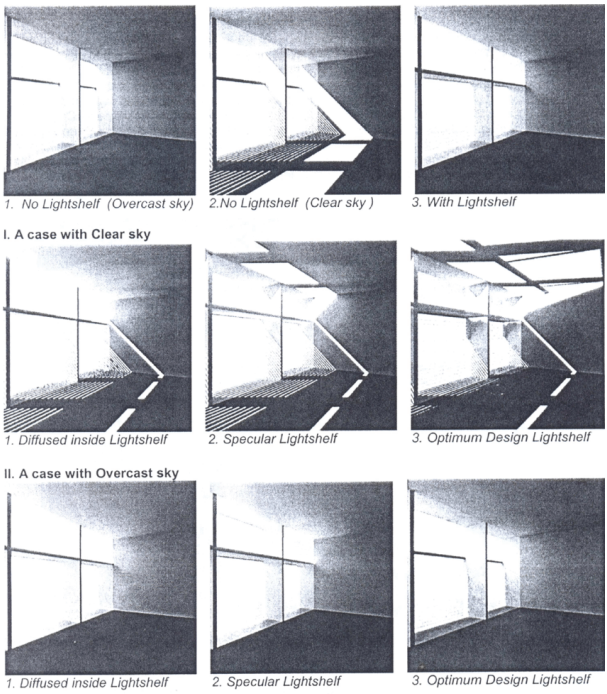

Fig.14 - Shows different types of light shelves set up at both clear and overcast sky conditions, *experiment by Aboulnaga, 2003*

was aligned to the meridian and the other set at 45 degrees from the meridian, as shown in *fig.13*. The outcomes revealed that the north facade of the first square did not have access to sun rays from winter till spring, keeping it humid. Whereas in the second square, all facades were hit by sun rays throughout the seasons, concluding that this orientation presents the most favorable light solution in cities.

3.3.3. Window size & Window to Wall ratio (WWR)

Window to wall ratio is *"the relation between the openings surface and exterior wall surface area."* This ratio is an important criterion that affects views, lighting, heating, and ventilation. Calculating the WWR in therapeutic spaces is essential to understanding the level of comfort offered to patients. Also, it is generally practiced to keep the WWR below 27% to limit overheating and glare effects that might cause a disturbance[43]. Light from windows is dependent on the sky conditions of the outside and the height, width, and depth of the window and room. A window must be 1.5 times its height to supply effective daylighting[44]. Components such as light shelves and mirrored louvers are some architectural ways to promote this distribution and diverge light deeper inside rooms. Light shelves also become interesting components to integrate in a south facade because they ensure a light penetration while blocking the heat waves *(fig.14)*, suitable in warm countries like Lebanon.

3.4. Light

In 2005, professor Johan Muhan and the Institute for Cancer Research in Norway established a link between cancer and UV exposure. They concluded that a colon cancer patient debuting his treatment in summer has a higher survival rate due to his higher exposure to the sun[45].

Light has been proved to directly affect mood and attitude, where a series of experiments show that a biological explanation is the basis of this affiliation. One study explains that UV rays emitted by the sun trigger the body to produce vitamin D signals the bones to absorb calcium and boosts the immune system, which results in a speedy recovery. Another study lays out the importance of the day/night routine on mood. The brain, specifically the hypothalamus, operates as the body's clock and manages the circadian cycle through a 24 hours interval by melatonin secretion. However, the body must secrete serotonin, the enzyme responsible for happiness,

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43 Green Garage, *"sustainable window design"*

44 Boubekri, Daylighting Architecture, and Health, p.114

45 Hobday, *The Light Revolution*, p.62

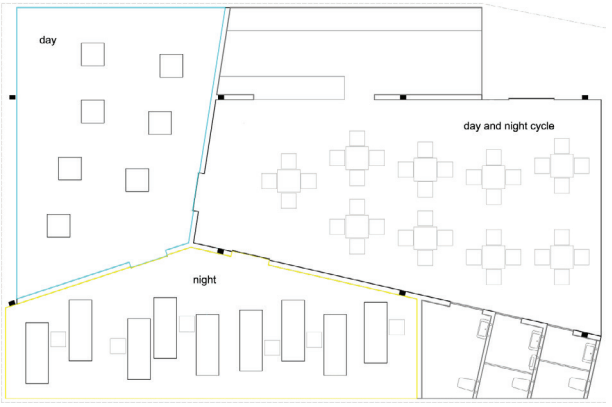


Fig.15 - Plan showing the three spaces from Split time Cafe , 2007 *by Philipe Rahm*

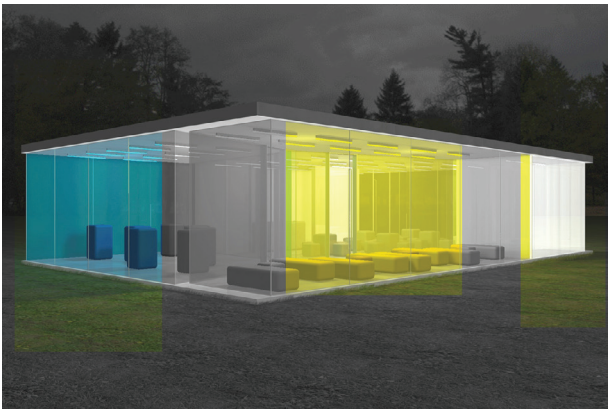


Fig 16 - Split time cafe *by Philippe Rahm, editd by Author*

to produce melatonin[46]. Experiments concluded that being exposed to a significant level of light during the night perturbates the body clock. Thus, when repeated regularly, the secretion of both enzymes caused health problems, proving a biological link between health and light. So how much sunlight do we need? Therefore, creating more openings is not as an obvious solution to getting adequate natural light; factors such as streetlight, neighboring building's light should be taken into consideration. By using proper design tools, architecture must be able to regulate the exact amount of light that a patient needs to heal.

3.5. Materiality

Materials have been proven to affect the perception of space. They affect sound penetration, movement, and the reflection of natural light and surroundings *(as shown previously in the reflective ceiling of figure 3)*. Usually, in hospitals materials such as concrete are used for economic and practical reasons. However, when exploring the new age of care, using local materials can result in social integrations and feeling authentic, thus making the patient feel at home. Therefore, this element in the toolbox differs depending on its context and its local culture.

Philippe Rahm dives deeper into the question of the materiality of light by studying its different colors. In his experiment Split Time cafe, he proposes a space divided into three, each having different color of light *(fig.15-16)*. His experiment aims to study the release of melatonin, a hormone responsible for making the body feel tired and ready for sleep, according to the different colors in space[47]. The first has a blue light and tall furniture that prompts the users to stay standing. He realized that the blue color blocked the release of melatonin, making the person feel more awake. The second space had a yellow light and soft-edged low furniture. In this space, users lay down, and their melatonin level was high, making them ready for sleep and recovery. In the last area, the ambient light color was white, and it allowed users to be thus influenced by the exterior light of their surroundings instead of the light of the room itself. This experiment proved that light color substantially affects a person's alertness.

46 Ibid, p.28

47 Rahm. *"Split Time Cafe"*

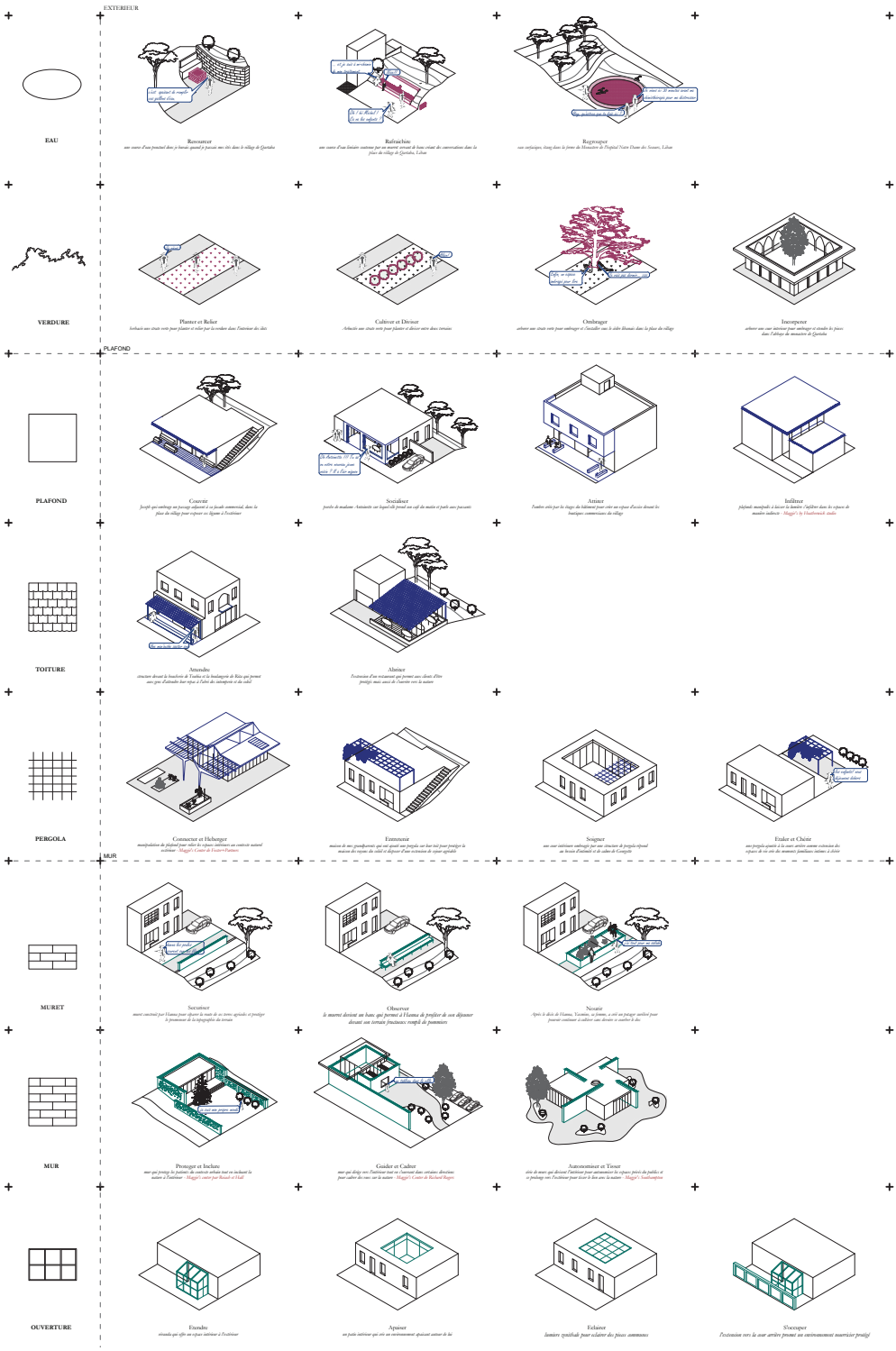


Fig.17 - Catalog of the different elements that promote health and wellbeing, *Geste du Care, Gaelle Mouaykel - TFE 2022*

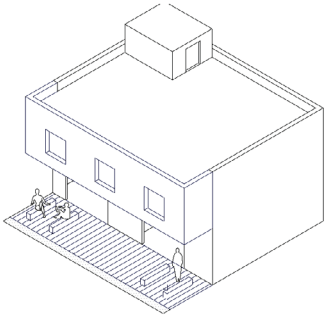
4 PRECEDENT DESIGN

Witnessing how a water source can reunite people of the same village, madame Antoinette shifting her ceiling forward forming a front porch initiates a dialogue between her and the passerby to make her feel alive, my grandmother Yasmine's raised vegetable garden allows her to continue cultivating easily and makes her feel independent...The catalog of typologies illustrated in *Fig.17* is a collection of actions taken by authors, whether citizens or architects, to manifest a healing space to advance health and wellbeing. The elements of this catalog can be categorized under three titles: exterior, ceilings, and walls. Different types of ceilings can create different activities under them and at different paces for wellbeing. For example, a pergola structure is intended to create a seating space under it to enjoy the calm outside and extend the living area. In comparison, a 1m wide ardoise structure is meant to temporarily shield an individual from the rain for a short time.

This chapter will first show examples of existing architectural elements found in village of Qartaba in Lebanon to show how people care for themselves, in a vernacular approach. Second, this chapter will compare two of Maggie's Centers to concretely view how architects used elements mentioned in the care toolbox.

4.1 Vernacular Architecture in the Village of Qartaba, Lebanon

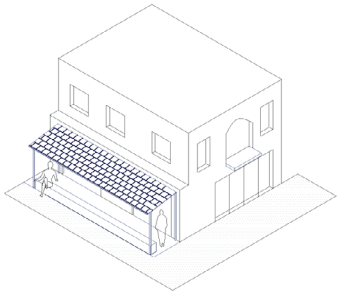
The following are images taken by the author in February 2022 of the village of Qartaba in Lebanon to show the reality of these illustrations.



ATTRACT

The shadow created by the balcony of the building's upper floors create a shielded area for pedestrians to walk under. Also, this passage doubles as a protected space to display groceries outside and interact with clients passing on the main road of the village.

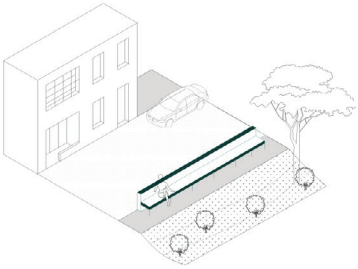
OPENINGS: the balcony shields the interior from direct sun rays
ORIENTATION: protection not necessary since it is oriented north
MATERIALITY: Concrete with yellow ston cladding



WAIT

Ardoise structure added in front of the main facade of Toubia's butchery and Rita's bakery. This structure allows people to wait for their food, protected from the rain and sun. Also, since the bakery offers fast food, people tend to enjoy eating their lebanese flatbread man'oushe under the shade.

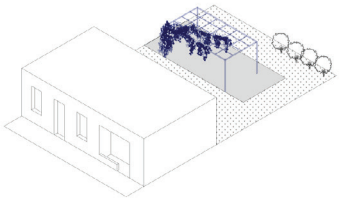
OPENINGS: the structure shields the interior from direct sun rays and heat
ORIENTATION: South-West
MATERIALITY: black metal and red slate tiles



OBSERVE

What was once just a fence that protected the pedestrians from falling on the steep side of the topography becomes a place of observation and serenity in front of the house of my grandparents. The act of adding a bench and a table under the walnut tree served as an outdoor lunch spot for Hanna.

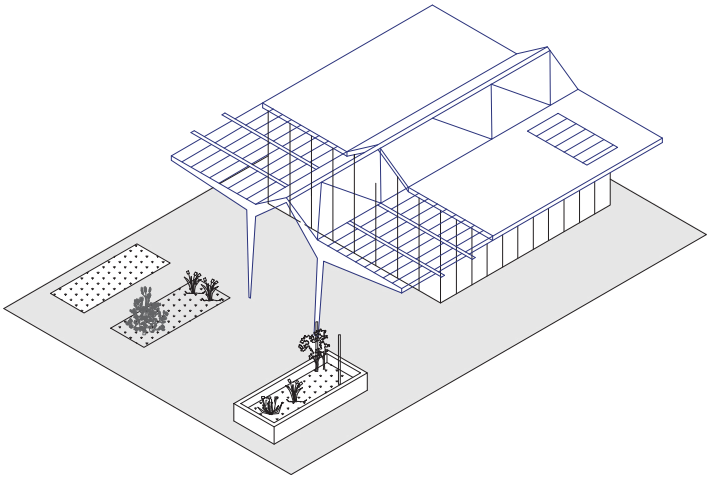
OPENINGS: to Hanna's agricultural land
ORIENTATION: South-East
MATERIALITY: wood structure



EXTEND AND CHERISH

A pergola added to the backyard as an extension of the living spaces creates intimate family moments to cherish. The pergola allows the direct integration of nature to the extended living space by allowing vine plants to grow on the structure and form an exterior protected space.

OPENINGS: the structure shields the interior from direct sun rays and heat
ORIENTATION: South
MATERIALITY: black metal and red slate tiles



Connecter et Heberger

manipulation du plafond pour relier les espaces intérieurs au contexte naturel extérieur - Maggie's Center de Foster+Partners

4.2. Maggie's Center

Maggie's Centres rely on the fundamental precept, often overlooked, that exceptional architecture and innovative spaces can make people feel better by kindling the curiosity and imagination fundamental to feeling alive." - Rem Koolhas[48]. Years after overcoming cancer, Maggie Jencks was diagnosed with cancer leaving her with a few months to live. Remembering windowless dark hospital rooms and cold white clinics, she decided, with the help of her husband, to create a place that was the opposite of the ones she spent her time in during her treatment. Maggie's are cancer care facilities designed for patients to retreat and heal outside the hospital environment. The centers are designed with elements, textures, and colors with the primary concept being the provision of a home-like atmosphere[49]. In total there are 14 centers, in this thesis will examine the application of the tools mentioned in th previous chapter in two of the centers

4.2.1. Maggie's Center Manchester, *by Foster+Partners*

Inspired by the new aspect of care set out by Maggie's, Foster+Partners aimed for a domestic approach when conceiving the project in 2016. In an interview with Darron Haylock, architect on the team of Maggie's Manchester, he explains that, *"everyone has a different perception of what a healing place like Maggie's means to them. It could be a distraction, a place to forget about issues, a place to help them recover. It could mean different things to different people... It is not about sitting with a nice view, it is much more than that."*[50]

The interview questions aimed at understanding the practical obstacles that present themselves while designing this new age of care to understand whether the toolbox set in the previous chapter was practical.

Haylock explains that the hospital is very institutionalized; having a lot of signs and flat surfaces. However, since Fosters+Partners looked at maggie's like a home, signs were not an option. The floor plan was an open plan, connecting rooms together visually and physically by sliding doors and light partitions, allowing a sense of communication between the patients and the staff. *"There is no signage, not even on the toilet door. We want people to engage with each other,"* said Haylock.

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48 OMA. Maggie's Center Gartnaval

49 Jencks Keswick. A view from the front line

50 Interview done on the October 8,2021 by the author with Darron Haylock, architect on the team of Foster+Partners that designed and built the Maggie's Center in Manchester. A series of questions regarding the healing toolbox and whether the concept design found any class with the hospital requirements were asked to better understand the practical side of designing a health center.

Fig.18 - a. Overlap of 2 images showing the greenhouse with people appropriating it. *Image by Foster+Partners, overalap by author*
b. Center open to the exterior with covered terraces and interior greenhouse, Ground Floor *Maggie's by Foster +Partners*

a. Land

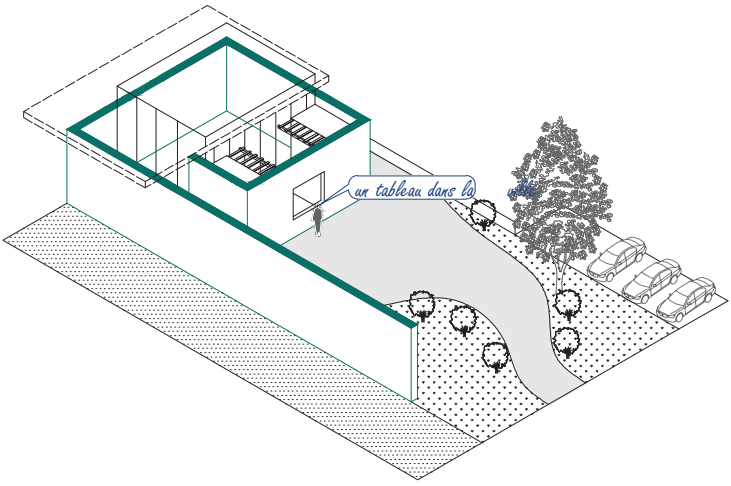
The strategic use of views and access to nature plays an integral part in the center's architecture. The architects aimed at integrating the project in nature by designing a glazed greenhouse in the South that offers warmth throughout the year's seasons, and by sliding doors that extend the interior to the outside environment.
Haylock states that *"a difficult part is to get people to cross the threshold and come into the center, thus the location of the building is very important."* In fact, when commissioned the project, they did a site analysis that showed that the best site for this program was not the one allocated to them. They successfully proceeded to convince the hospital board for the new potential site which connected Maggie's to a neighborly landscape. Maggie's thus becomes a real home in a neighborhood.

b. Air

The design presents a complex composition of layering openings and partitions. The structure was made to be light and porose, infiltrating light and air from the peripheral sides as well as the triangular roof openings. The cantilevered roof protects the glazed facade from overheating, making the WWR adequate for the patients.

c. Light & Materiality

The Centre has a greenhouse and rectangular rooftop openings that filter natural light inside. The rectangular configuration is based on a light perforated wooden structure that holds the roof and partitions to cantilever on the West-East sides, creating a veranda. The roof rises in the middle to allow a mezzanine dedicated to calm reading and support area to bathe with sunlight while overlooking the common spaces below. *"The selection of the timber material was natural; it is evident to everyone. It provided a solid connection to nature"* said Haylock. The timber gives a warm feeling to the patients and makes them feel cared for. As one patient says *"it sort of gives you a hug"*.



Guider et Cadrer

mur qui dirige vers l'intérieur tout en s'ouvrant dans certaines directions pour cadrer des vues sur la nature - Maggie's Center de Richard Rogers

4.2.2. **Maggie's Center,** *by Richard Rogers Harbour + Partners*

a. Land

The center is built at the corner of a parking lot, juxtaposing the hospital and surrounded by streets, contrary to the other centers that are built in a green milieu. Nevertheless, the architect blurs the boundary between interior and exterior by creating inside spaces that make part of an exterior landscape and exterior sitting areas within the peripheral wall of the facility[51]. Elements such as wooden trellis are employed to project forest-like shadows, giving a sense of being in nature and offering patients an accessible, positive distraction *Fig.18a.* This approach encourages patients to submerge themselves in greenery and light while preserving the intimate feel they request for healing. We can deduct that the center's design promotes vitamin D intake, thus advancing recovery.

b. Air

The center is designed as a glass box offset from an impenetrable periphery wall that shields it from the city's noise. Therefore, having double glazed windows spanning a double height and a perforated rooftop, this center's WWR is deemed the highest of two examples. The patient is sure to access daylight throughout his entire day, even when inside the center's walls.

c. Light & Materiality

Aligned to the South-East axis, the center detaches its rooftop from the facade to allow daylight penetration. The spatial layout recalls a traditional domestic house where the common spaces are open and face out to a south direction, offering high levels of light during the day. The double-height ceiling and ramp perching over the kitchen and dining area suggest visual connectivity in the center, making them the focal point of the *"house."* The patient becomes an active spectator of the activities happening at the heart of the house, having more intimate nukes that favor his healing pace and wellbeing. Thus, the spaces are bright, personal, private and public, and communal, adjusting to the patient's mood.

51 Richard Rogers Harbour + Partners, Maggie's West London

Fig.19 - a. Overlap of 2 images showing the greenhouse with people appropriating it. *Image by Richard Rogers, overalap by author*
b. Play between interior exterior aspect of the building using walls, *Maggie's West London by Richard Rogers+Partners*

4.3. Synthesis

Analyzing the two Maggie's centers stressed the importance of Architecture and orientation, Window size, and views that the different architects employed to gain the optimum level of natural light and tranquility. We can notice that even when the site does not offer suitable views, the center's design becomes a tool to respond by creating spaces like in the case of West London. The case studies gave us an 'Avant-gout' of the infinite ways to deploy the healing toolbox suggested throughout this study and confirm the effectiveness of a light-conscious architecture.

Could we benefit more from design principles set by Maggie's in hospitals? In our contemporary hospitals, waiting rooms are spaces where seats are closely attached one to the other. This small but significant act dictates the actions of the patients that can not but sit next to other patients and feel distress. Some days patients feel like they need some time alone, and on other days they feel like they want to engage in small talks. Spatial configurations like Maggie's allow this volatility in mood and attitude. Mobile furniture, walls, and glazing gives the patient a sense of control over what he is doing. A glass door can be pushed extending the living room outdoors on a sunny day. A wall can be retreated opening up the kitchen to the dining room... small actions like this can be found in all Maggie's centers. Why not integrate them in our hospitals?

When people are feeling anxious, the architecture subliminally communicates that they matter and that they're of value and that life is still worth living. There is also a **DISTRACTION ELEMENT** when people come in and they think they're going to have to talk about how they're feeling, THE SPACE DISTRACTING YOU SLIGHTLY MEANS IT'S EASIER TO OPEN UP. So the buildings work really hard for us. They aren't frivolous. It's not just doing something fancy for the sake of it. They actually do a job of supporting people." - *Maggie's Chief*

'TESTIMONIALS'

'It's a sensible place somehow. You know? A fairy light free zone'- laughing.

"When you walk in you feel like you have been transported to a tranquil, peaceful and beautiful space in the world away from the busy streets of Manchester. You can walk in and make yourself a brew in the lovely kitchen and sit at the massive table chatting to other visitors or take it out to the garden to sit and gather your thoughts. It really is exactly what people need, it offers so much in terms of emotional and practical support" - *Pauline*

'I can't believe somebody thinks I deserve all this.'

'IT'S SO LIGHT AND OPEN. I feel I can actually breath in here'

‘It sort of gives you a hug’

‘It feels amazing. The smell. All the **WOOD.** It makes me want to touch it all’

‘The glass house is my favorite place. I sit in there to remember my husband.’

A very very poorly lady came in and was supported by her husband in the pause space. She said ‘I just wanted to see it. To see if it is true what they say about it. It’s all true. Thank you. It’s beautiful. I won’t see it again. Thank you for making this for us’

‘I don’t know what’s wrong with me. As soon as I walk in I feel emotional. It makes me want to cry. I love it here’.

“From the outside the Maggie’s Centre reminded me of **A HOUSE IN THE COUNTRY.** I immediately felt at home when I walked through the door. It means everything to me to be able to come to Maggie’s. It really helps to get out of the house into a space for me where the support provided is so good. Here I can cry or smile but will always feel the warmth, the only thing I need at the moment is to feel secure and I have this at Maggie’s.” - *Analyse*

Fig.20 - Maggie’s Patient quotes about Maggie’s Manchester, *provided by Foster+Partners*

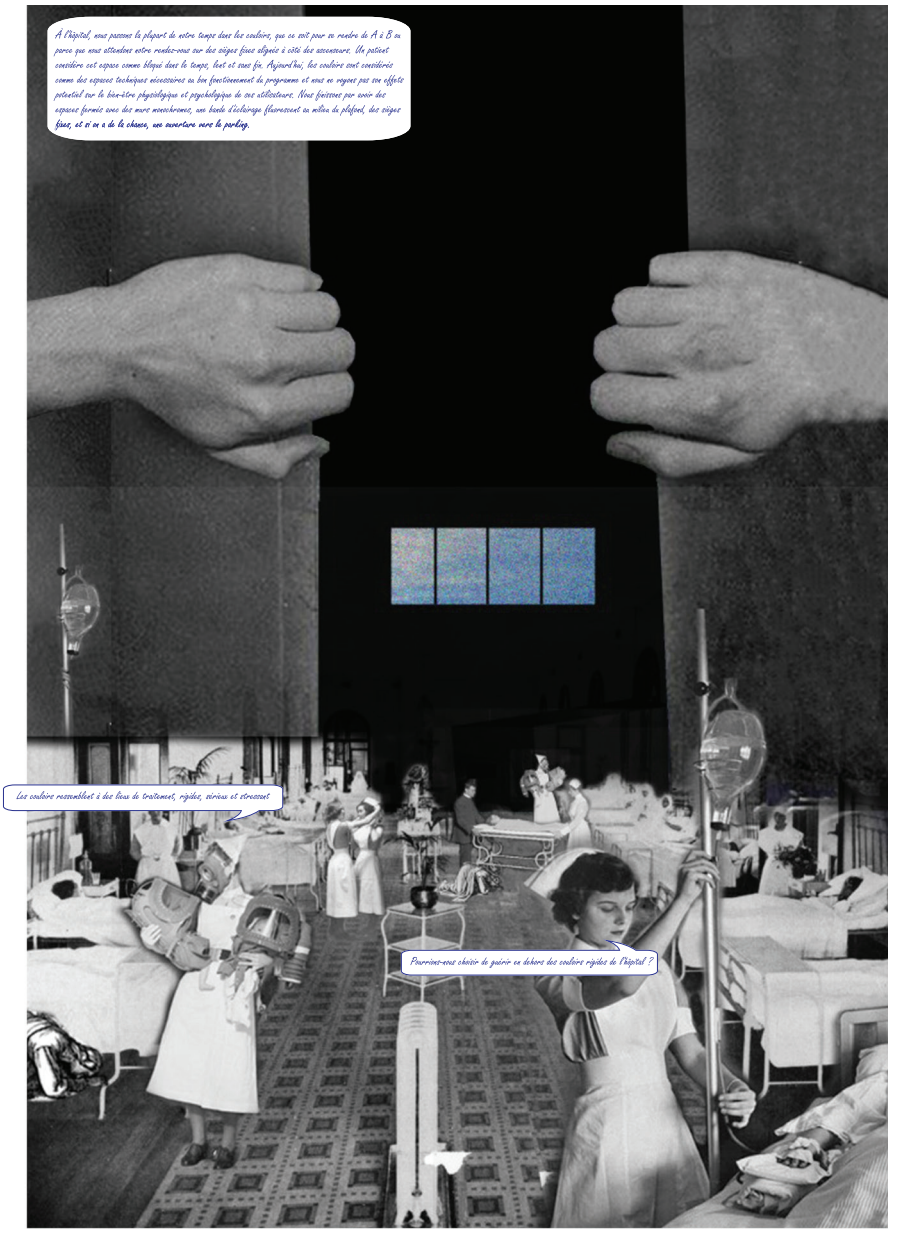


Fig.20 - Reality, Corridor: introverted spaces, artificial, and closed - Collage by Author

5 ARCHITECTURE AND PATIENT

Numbers show that fifty hospitals offer chemotherapy in Lebanon[52]. Contrary to the idea of Maggie's centers, 0/55 medical institutions have a palliative care center that can support cancer patients during their hospital days. The palliative care centers in Lebanon are private and found in main cities, targeting the support of patients after treatment and not throughout their day in the hospital. Also, these centers take the architectural peculiarities of the building structure that they inhabit, not making space to integrate elements from the healing toolbox that is needed for care.

5.1. Through the eye of a patient: understanding cancer

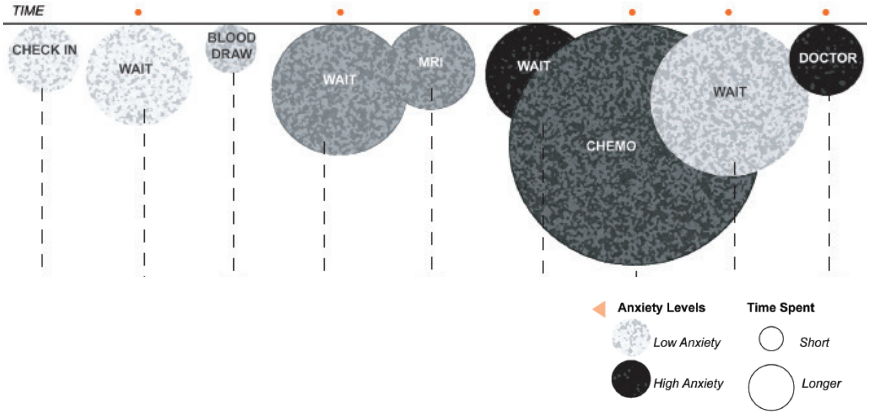
After being diagnosed with cancer, patients usually start treatment right away. Treatment duration differs depending on diverse variants, can architecture also affect the healing pace of a patient? Cancer fatigue is an essential obstacle to patients' performance in daily activities throughout treatment. It is one that is rarely treated because of our inability to measure it and the patient's silence over the subject. Can architecture and space be carefully planned to facilitate patients' everyday activities and make fatigue less of an obstacle? Maggie Jencks surely believed so. She believed that architecture is at the basis of healing and facilitating the treatment process of a patient.

"An old fashioned lady's room- not a partitioned toilet in a row- with its own basin and a proper door in a door frame- supplied privacy for crying, water for washing the face, and a mirror for getting ready to deal with the world outside again[53]"- Maggie Jencks

Cancer treatment alone often causes damage to the body and places it under extreme stress and anxiety. A patient typically spends all of his day in the hospital to

52 Lebanese Society of Medical Oncology. "Hospitals with cancer departments"

53 Jencks Keswick. A view from the front line



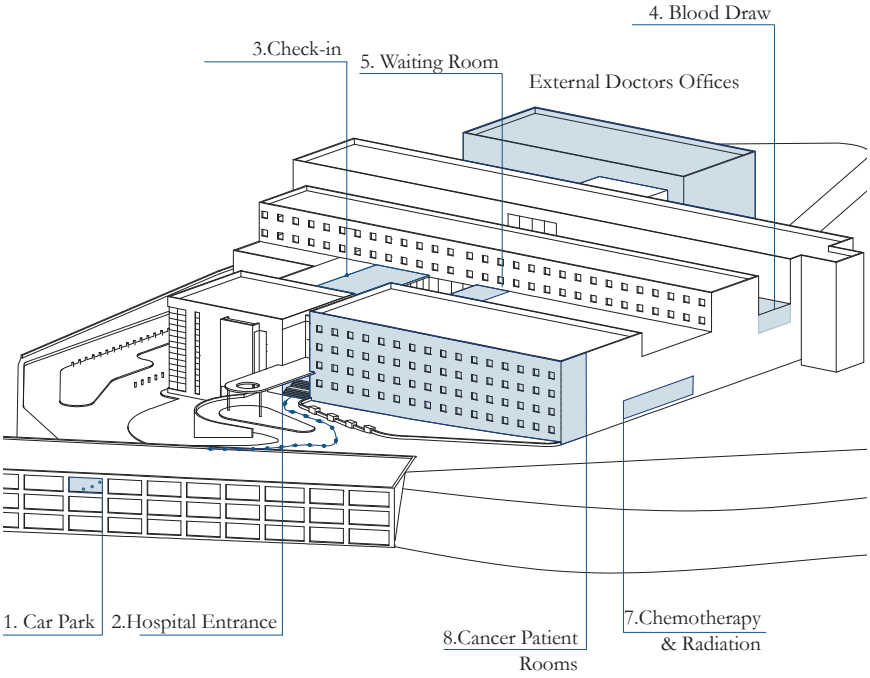


Fig.21 - a.Timeline of patient's day measuring stress im each space.
b. Large ditance between the rooms, resulting in patients waiting next to elevators, *case of Notre Dame des Secours hospital Lebanon, illustrations by Author*

get treated, several times a week. Figure 21 is a representation of a patient's timeline during the day and the stress levels that he has through each phase of his treatment. What are the characteristics of the spaces that a patient waits in for treatment and during treatment? And more importantly, what is the architectural sequencing of spaces from the moment he checks in point A to the last procedure and checkout at point B?

5.2. Wait Space: Corridor

To answer the question of what is the future of care, it is crucial to understand the component that has been an essential element in its development and that played a vital role in how we see hospitals today. When seeking medical help, we spend most of our time in corridor spaces, whether because we need to get from point A to B or because the waiting areas are mainly in the corridors themselves.

Corridors reference a connection between buildings, neighborhoods, and infrastructures. Whether we are talking about an impressive gallery rhymed with colons in commercial centers and palaces or smaller private passageways, the corridor has played an essential role in articulating public and private spaces. They are elements that link and divide spaces, hide and show off people and actions. The cancer patients perceive hospital corridors as a space that divides between space and time. A patient considers the corridor, the place where he waits all day, as blocked in time, slow, and never-ending. Before moving into the doctor's office, chemotherapy, radiotherapy, counseling, and others, this space is a compulsory step where we often spend a lot of time waiting in.

Initially, the term corridor did not refer to a place but a person, a messenger. As time evolved, the corridor became a secret passageway, an escape route, to go in and out of a palace. Often those hidden spaces had few to no openings like the Passetto di Borgo that connected the Vatican with Castel S. Angelo *Fig. 22* and the Vasari Corridaio built by the Medicci to connect the Pallazo Pitti with the Pallazo Vechio in Florence. *Fig.23* They first began outside a building to link two places together and were not readily accepted as spatial requirements inside an edifice. In the late 18th century, corridors built in English countries were mainly adopted in the cases of prisons, for example, Kilmainham Gaol, Dublin. Later on, William Chambers defined corridors as *"an element of domestic architecture, no doubt creating the illusion - and to some degree the error- that corridors are primarily a feature of houses."* Although people of that time resisted the concept of corridors considered dark and lonely places, they slowly started emerging inside buildings, notably in hospitals.

Fig.22 - Passetto di Borgo that connected the Vatican with Castel S. Angelo, *by source*

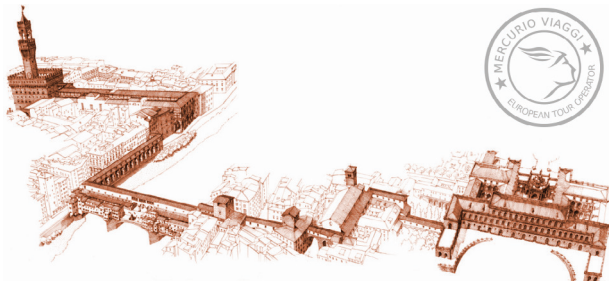


Fig.23 - Vasari Corridaio built by the Medicci to connect the Pallazo Pitti with the Pallazo Vechio in Florence, *by source*

The problem with the evolution of the corridor was its lack of proper ventilation, which raised concerns in the case of hospitals. *"The corridor… by communicating directly with two or more wards having different ventilation, allowed one ward to ventilate itself in the other, thus became the means of general contamination*[54]*."* Grandiose staircases were the obvious solution to bring in light and take the air outside. However, mechanical ventilation surged shortly after, and corridors were the perfect space to use them. With time, anti-corridors movement started.

Although they have contributed to negative feelings, Corridors are essential to the functioning of any medical institution and cannot be dismissed. Therefore, to have a functional care center, corridors must be disguised by manipulating their width, heights, and the addition of activities that can make it a place we go to instead of a place we pass through and wait in.

"Today, we talk of corridors of power, urban corridors, rail corridors, and pipeline corridors. In all its meaning- the word with its emphasis on speed- has managed to survive.[55]*"* The term Corridor in space has evolved with the different realities faced by each era. From a corridor that characterized the body to one that represented the building to technical elements. Also, corridors, in its sense, evolved from the power of a messenger to the architectural realm to go once again back to geopolitics, such as corridors of migration… What is the new meaning of corridors in healthcare? How can corridors contribute to the improvement of health and wellbeing?

5.3. Conclusion

From Urlich's study of views through windows proving how greenery can affect our bodies to Park's research on forests and their contribution to positive distractions. From Rahm's experiment on the color of light and how it affects our alertness to seeing how different architects explored healthcare in Maggie's centers by proposing unique variations branching out from the same toolbox. We can confidently say that the built environment contributes significantly to how we go about our day-to-day activities. Imagine how much easier a careful architecture sensible to the everyday obstacles in patients' lives can make their treatment more manageable and feasible. Patients have a million stressors and emotional trauma that they have to deal with daily. Let us not have architecture be part of these stressors.

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54 Walker Gill Wylie, 1877 *"hospitals: their history, organisation, and construction"*. New York p.205]

55 Jarzombek Corridor Spaces. Critical Inquiry. 36

Fig.24 - Vision, Why don't we open up to the Mediteranean?, *Collage by Author*

6 FUTURE OF CARE

This thesis's evidence proves our ability as architects to create a micro-atmosphere that promotes healing outside the hospital, re-questioning the hospital of today and dreaming of a better understanding of the hospital of tomorrow. Could we choose to heal outside the rigid corridors of the hospital? In a hospitable environment open to a view of olive groves and Lebanese cedars? Could it become a home for exchanges in the city? Or Is it a healing city in itself?

As concluded after the interview with Haylock, the intervention site for such projects is a crucial element in healing, as important as the architecture itself. In the context studied in this thesis, Lebanon, it was evident that such an intervention is much needed outside of main cities where palliative care services are non-existent. Therefore, two sites with two different scales emerge from this reflection, the first suggesting an intervention in an existing hospital context, Notre Dame de Secours, while the other pushing the idea of home care to its extreme by exploring care at the scale of a village.

6.1. A place in the city

The new palliative care center for cancer patients is a place in a city, a meeting point for support, awareness and exchange. In Lebanon, this type of cultural non-intervention healthcare center does not exist resulting in people only going to hospitals to get treated. Support is usually given through one-on-one psychology where few people who need it seek it because of the stigma around mental health. Therefore, building an extension to an already existing hospital was a chance to ameliorate the conditions surrounding care by making it a public place, accessible to anyone.

From afar, the new center is designed as a grove of trees in the middle of the city of

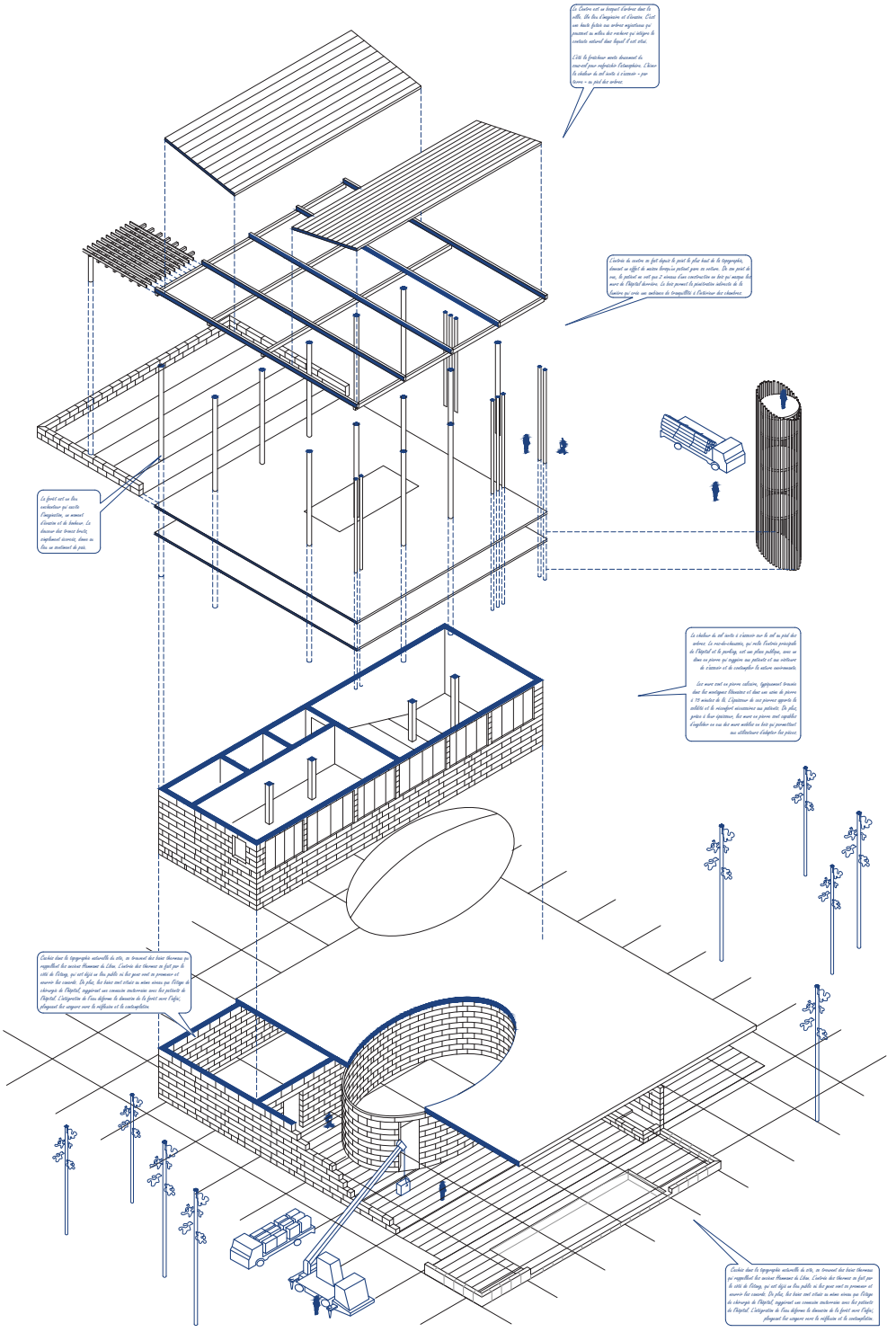


Fig.27 - Exploded diagram showing the diverse composition of the center, *done by Author , TFE 2022*

Byblos, merging with its natural context. A place of imagination and escape, it poses as is a high grove of majestic trees (wooden structure) growing among rocks (stone structure on the ground) and olive trees (found in the context).
The forest is an enchanting place that excites the imagination, a moment of escape and happiness. The softness of the raw, simply barked trunks gives the center a feeling of peace. The soft light that radiates from all sides envelops the user in maximum comfort. The project thus becomes a project in the city, for the citizens.

Architectural Organization[56]

This project is proud of its diversity and inclusion, creating different spaces for different people, an aspect lacking from the current medical establishments.

Hidden in the natural topography of the site (ref. annexe), there are thermal baths reminiscent of the old Hammams in Lebanon. The baths' entrance is made from the East. They are located at the same level of the hospital's surgery floor, suggesting a connection with the patients. The integration of water distorts the dimension of the forest towards infinity, sinking the users towards reflection and contemplation.

The warmth of the ground invites you to sit on the ground at the foot of the trees. The ground floor, connecting the hospital's main entrance is a public plaza, with a stone dome that encourages visitors to sit and contemplate the surrounding nature. A Library on this level becomes the beating heart for awareness, where conferences and talks about palliative care and support take place. The walls are made of Limestone, typically found in Lebanese mountains and in a stone factory 15 minutes away. The thickness of these stones provides the solidity and reassurance needed for patients, however by keeping adaptability and flexibility thanks to wooden mobile walls.

Looking up, there are two levels for the palliative care center. The entrance of the center is made from the highest point of the topography to play on the perspective of a home-like effect. From the entrance point of view, the patient only sees 2 levels of a wooden construction that masks the hospital walls behind and the public functions below. The wood allows the indirect penetration of light to create a mood of tranquility inside the rooms. Also, the wood beams form pergolas on balconies and terraces creating a shading pattern that resembles the forest leaves. At the heart of the center, an interior patio that refreshed the climate of the center, allowing the patients to feel outside on days where they cannot be in direct contact with sunlight.

The center thus becomes an escape, a place in the city.

56 Reference to annexe at the end for architectural drawings that elaborate the projects

Fig.28 - View From the hospital parking sharing the same perspective as the new healthcare project that is located adjacent to it, *photography by Author, 2022*

Fig.29- View from parking building terrace towards the Mediteranean, *photography by Author, 2022*

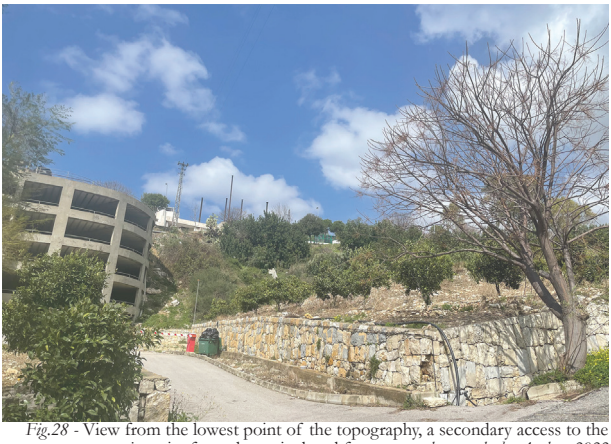


Fig.28 - View from the lowest point of the topography, a secondary access to the project site from the agricultural farm gate, *photography by Author, 2022*

Fig.29 - View of the hospital and new project site from the terrace of church on the parallel cliff, *photography by Author, 2022*

Fig.30 - View of the Lebanese green mountains and the protected forest from the project site towards the East, *photography by Author, 2022*

Fig.31 - View on the Mediterranean from the project side towards the West, *photography by Author, 2022*

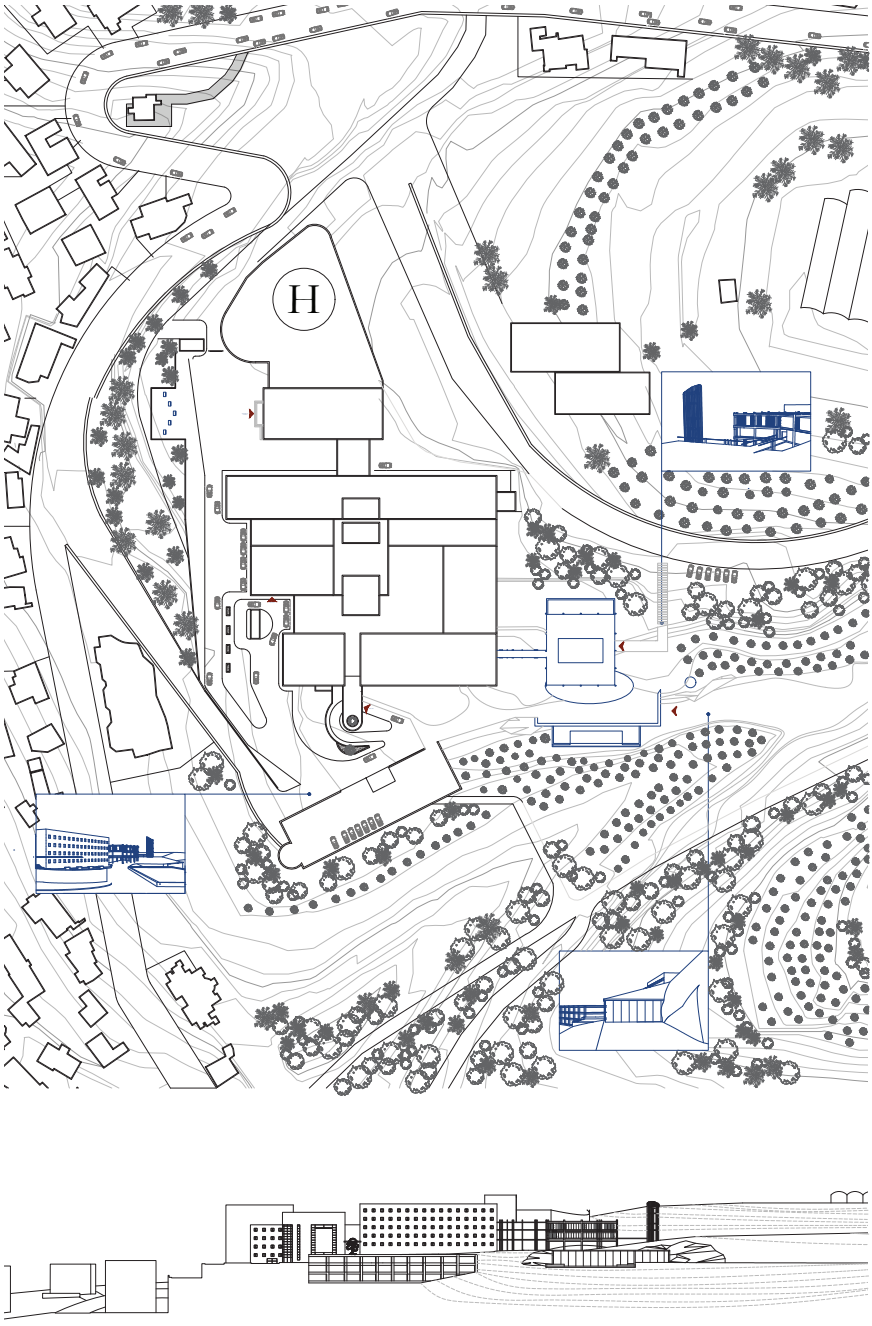


Fig.32 - Master Plan of Notre Dame des Secours hospital and the new adjacent healthcare. The topography is used to give different scales for the building from each entrance, *done by Author , TFE 2022*

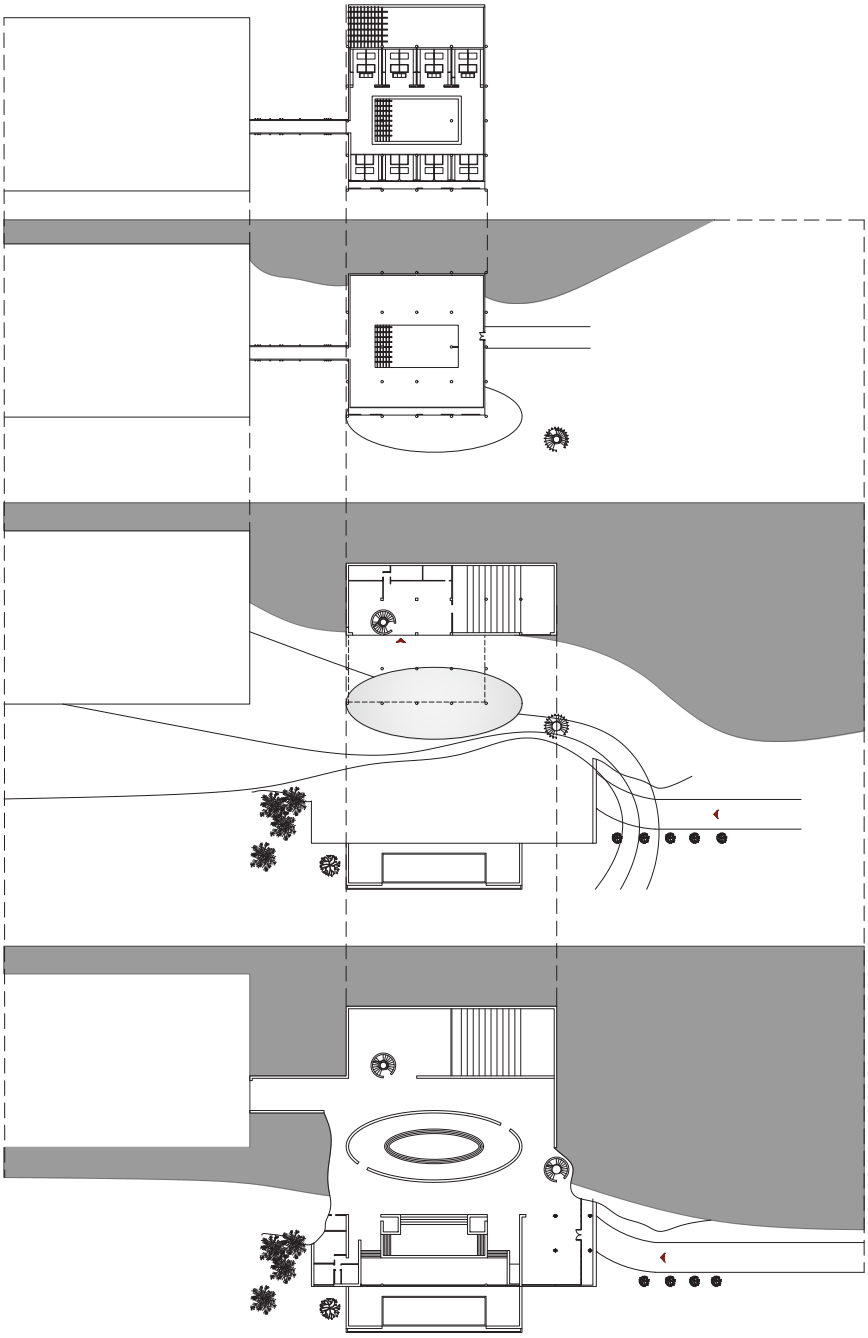


Fig.33 - Floor Plans, *done by Author , TFE 2022*

Fig.34 - Image from immersive physical model showing the characteristic space that best represents the intentions of this project, *built and edited by Author , TFE 2022*

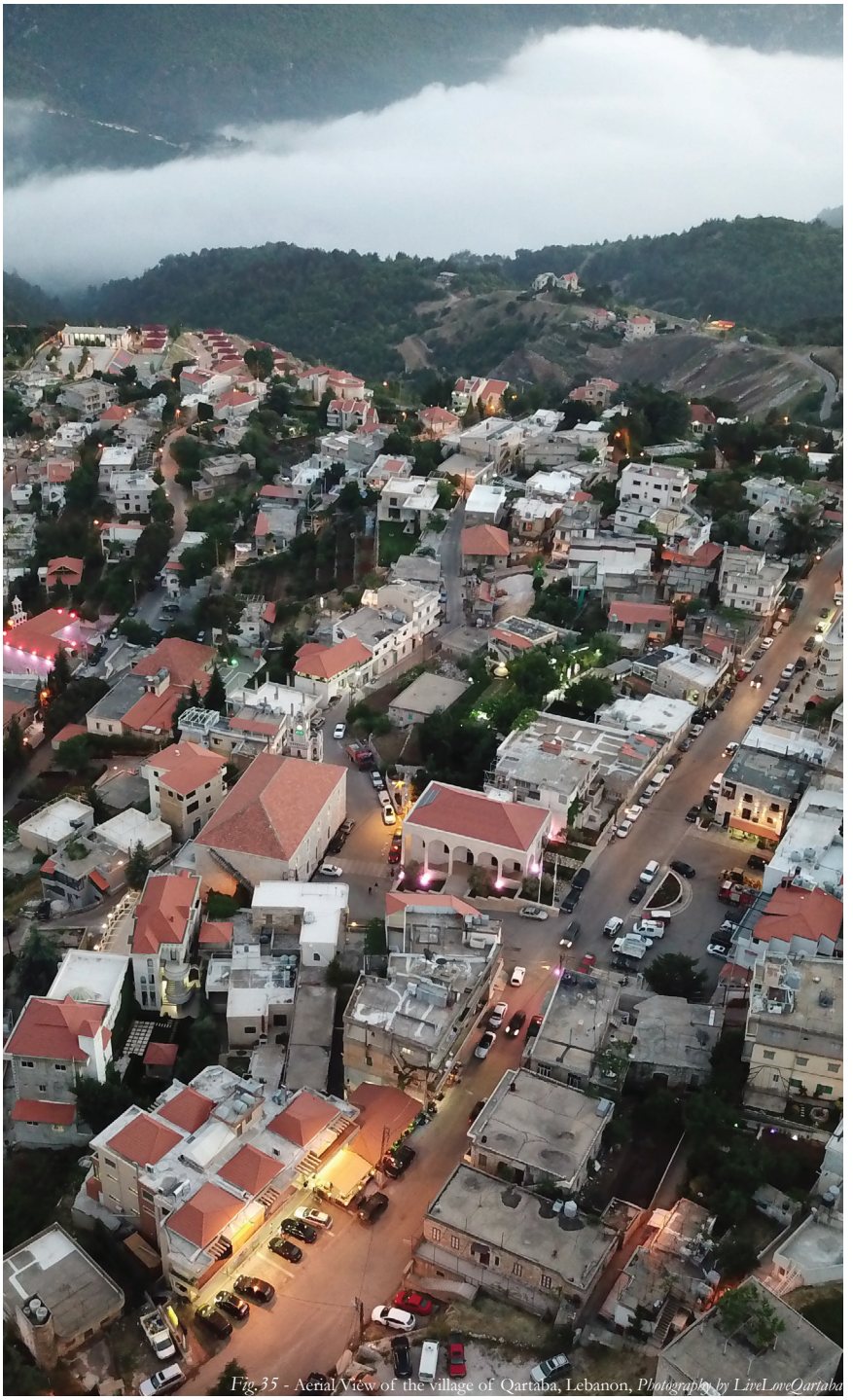


Fig. 35 - Aerial View of the village of Qartaba, Lebanon, *Photography by LiveLoveQartaba*

6.2. A city in itself

Throughout this thesis, elements in the healing toolbox as well as projects proposed by Maggie's centers targeted to offer a home-like effect in a hospital environment. This project proposes the opposite, reinforcing the ideas of how architecture can tailor to its users needs in a familiar setting, their own homes.

The village of Qartaba is located at 1,250m altitude in Lebanon. During summer, it is full of familiar faces, kids playing football under the house, parents having chats on the side of the road, and people reuniting in church. However, the strong sun does not allow the full immersion in nature, and because of the lack of shading and planning the village becomes hard to walk in. During winter, it becomes a ghost town; everyone leaves to their homes in the cities. This demographic migration and the lack of support given through architecture and urbanism results in older people, born and raised in the village, to become nomads moving from one child's house in the city to the other, causing discomfort.
When talking about health in architecture it is crucial to highlight those conditions and work on creating a city that makes citizens feel independent. The aim is to create a village where one can retire and be cared for at home.

Architectural & Urban Planning

Through the personal stories of citizens, and the method of tactical urban planning, this project attempts to solve the typical problems that people in my grandparent's village encounter in their daily lives and prevent them from seeking care at home.

Two main axis are created. The First, functional band, rethinks the commercial strip and creates a shading system, allowing a secure pathway independent from cars. This way, Yasmine, complaining that she cannot live alone because she has a hard time getting her groceries, can now take this pathway to fulfill her tasks at ease. The second, recreational loop, links people by a walkable path with punctuated activities. This is created through topographic analysis to take out the points that are the closest to connect to each other, forming an internal path that varies less than the veicular roads. Also, through a solar analysis, the zones flooded with sun were treated by adding shading elements like trees and pergola. Thanks to this, Antoinette, who was complaining about not being able to walk every morning to her sister's house to have coffee because of her cancer fatigue, is able to do so without any difficulty.

The village of Qartaba becoming a care village, makes us rethink the need for hospitals nowadays and more importantly urges us to re-qualify all of our villages to better allow care at home.

YASMINE, 75 ans

Bonjour, je suis Yasmine. J'ai vécu toute ma vie à Qartaba, il y a quelques années on m'a diagnostiqué un cancer du sein et j'en ai été guérie. Mais depuis, j'ai l'impression que je ne peux plus marcher sous les rayons du soleil forte, ce qui me rend difficile de faire mes courses chaque semaine.

Trajet de Yasmine pour faire les course

①

CHARBEL, 53 ans

Au fil des ans, j'aimé l'emplacement de ma maison qui est directement relier au commerce et qui m'aide à exposer mon travail artisanal sur la façade de cette rue. C'est pour cela j'ai decider de quitter ma maison a Beyrouth et faire ma retraite dans le village. Cependant, Qartaba devient une destination de plus en plus populaire, j'ai l'impression de manquer d'intimité dans ma maison située entre la route d'entrée principale du village et le parc public. J'aime être à l'extérieur dans la nature, mais j'aime aussi de pouvoir être seule sans que personne ne me voie.

②

ANTOINETTE, 55 ans

J'avais l'habitude d'aller voir ma sœur tous les jours les dernier 30 ans pour le café du matin, mais maintenant je crois que je n'ai pas la force de marcher les mêmes distances et les monter tous les jours. Nous limitons donc notre ritual à 2 fois par semaine. Aussi, j'habite du côté le moins peuplé du village et me sens des fois donc déconnectée de toute interaction humaine.
J'aime aller à l'église qui se trouve au centre pour retrouver ma famille et mes amis. Cependant, comme il n'y a pas de place pour s'asseoir à côté de l'église, nous limitons notre conversation à 10 minutes sous le soleil frappant.

Trajet de chez Antoinette a sa soeur

③

CLAUDE, 40 ans

J'ai 40 ans, et malheureusement déjà en phase terminale. Les médecins ont décidé que je ne pouvais plus rien faire. Par conséquent, j'ai décidé de me retirer dans ma maison d'enfance au village. Toutes les 2 ou 3 semaines, je m'injecte une perfusion qui me fournit l'énergie et l'hydratation dont j'ai besoin pour rester debout dans mes dernières années. Pour cette injection, je dois faire un trajet de 45 minutes pour me rendre à l'hôpital le plus proche et passer généralement 1 à 2 heures assise dans une pièce enneigeuse pour que mon corps absorbe le liquide.

Trajet vers elie pour le soutenir

④

ELIE, 60 ans

Je suis un patient du cancer et j'ai toujours la chance de me battre contr cette maladie. J'ai décidé de rester au village et de m'occuper de mes agricultures comme je le fais habituellement, au lieu de rester dans une chambre d'hôpital formée a rien faire. Cependant, je dois demander à un membre de ma famille de venir de la ville au village toutes les deux semaines pour m'emmener à l'hôpital pour ma chimiothérapie. J'aimerais pouvoir rester chez moi et ne pas avoir à passer 3 heures branchée à une intraveineuse dans un espace fermé.

Chemin vers son champs agricole

⑤

LEGENDE:

- Arracher plan d'intervention
- Point de raccordement de niveaux
- Entree Commerciale
- Eau souterraine
- Pave
- Route Sableuse
- Route Asphalte
- Beton Cire
- Jardin
- Terre Agricole

PLAN DE MASSE
Village de Qartaba
ech:1/1000

Fig.36 - Masterplan of Qartaba, *drawn by Author , TFE 2022*

Fig.36 - The local commercial road of the village dominated by cars and no side-walks, facing East, *photography by Author, 2022*

Fig.37- The local commercial road of the village, facing West, *photography by Author, 2022*

Fig.38 - View of the main place f the village, today it is a parking *photography by Author, 2022*

Fig.39 - Steep tpography leading from the main place to the church, The -1 level is partially abandonned , *photography by Author, 2022*

Fig.40 - Qartaba's main church made of limestone blocks, *photography by Author, 2022*

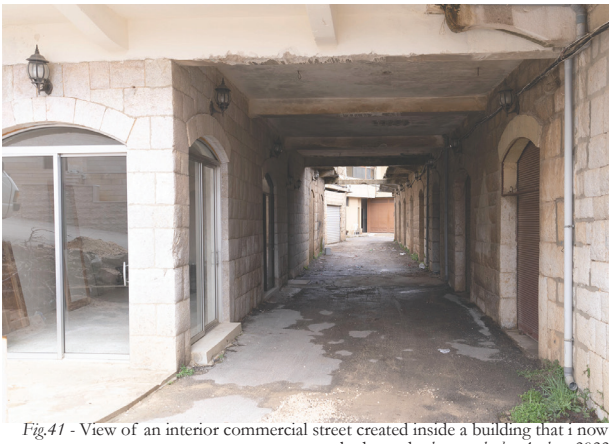


Fig.41 - View of an interior commercial street created inside a building that i now abadnoned, *photography by Author, 2022*

Fig.42 - View of the facing mountains from Hanna's bedroom in Qartaba, *photography by Author, 2022*

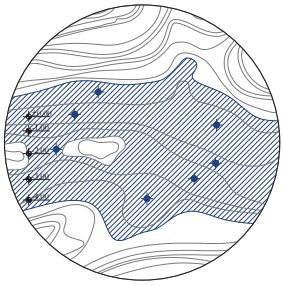
Fig.43- Pergola constrcuted from found materials on the terrace of my grandparent's house, *photography by Author, 2022*

Fig.44 - Yasmine sitting om the bench in front of her house, *photography by Author, 2022*

Fig.45 - Stairs used to relink the topgraphy are now abandoned, *photography by Author, 2022*

Fig.46 - Stairs leading into the entrance of the house that is now abandoned, *photography by Author, 2022*

Fig.47 - Internal passage leading from the church to a neighborhood that is now abadnoned *photography by Author, 2022*

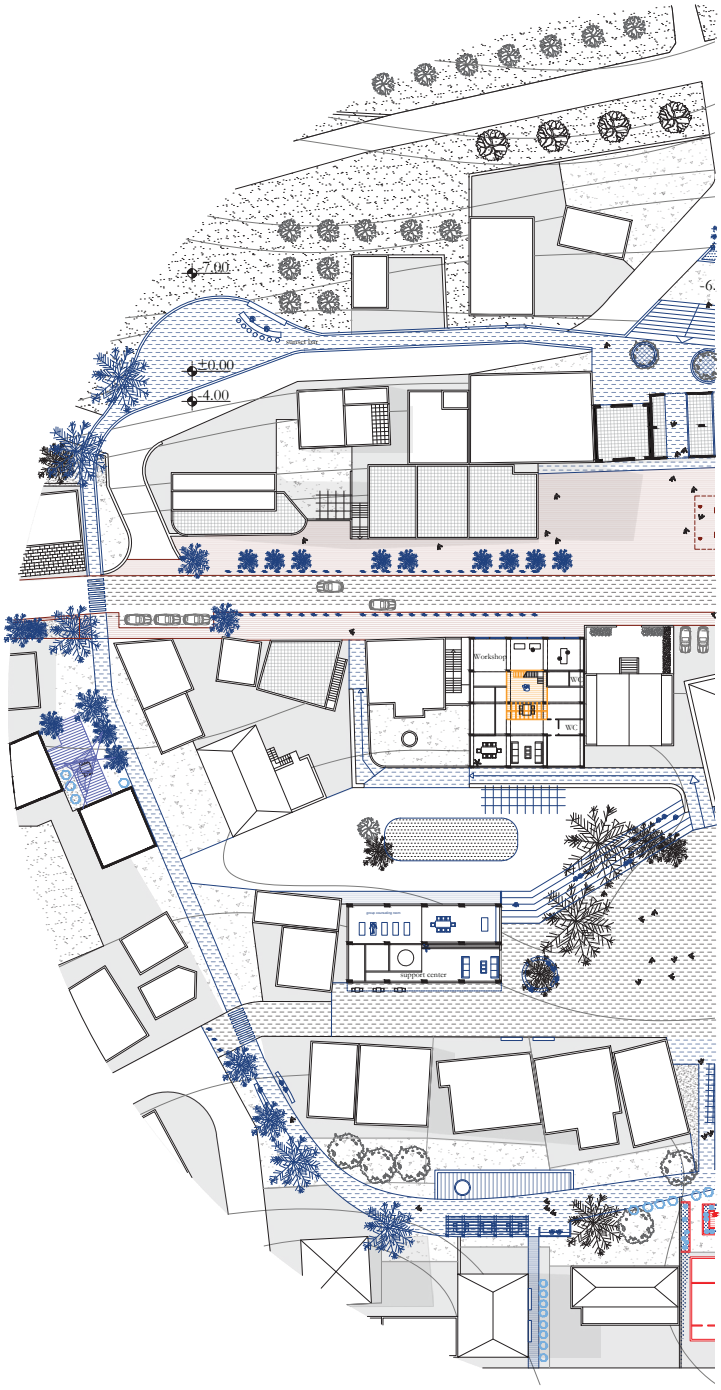


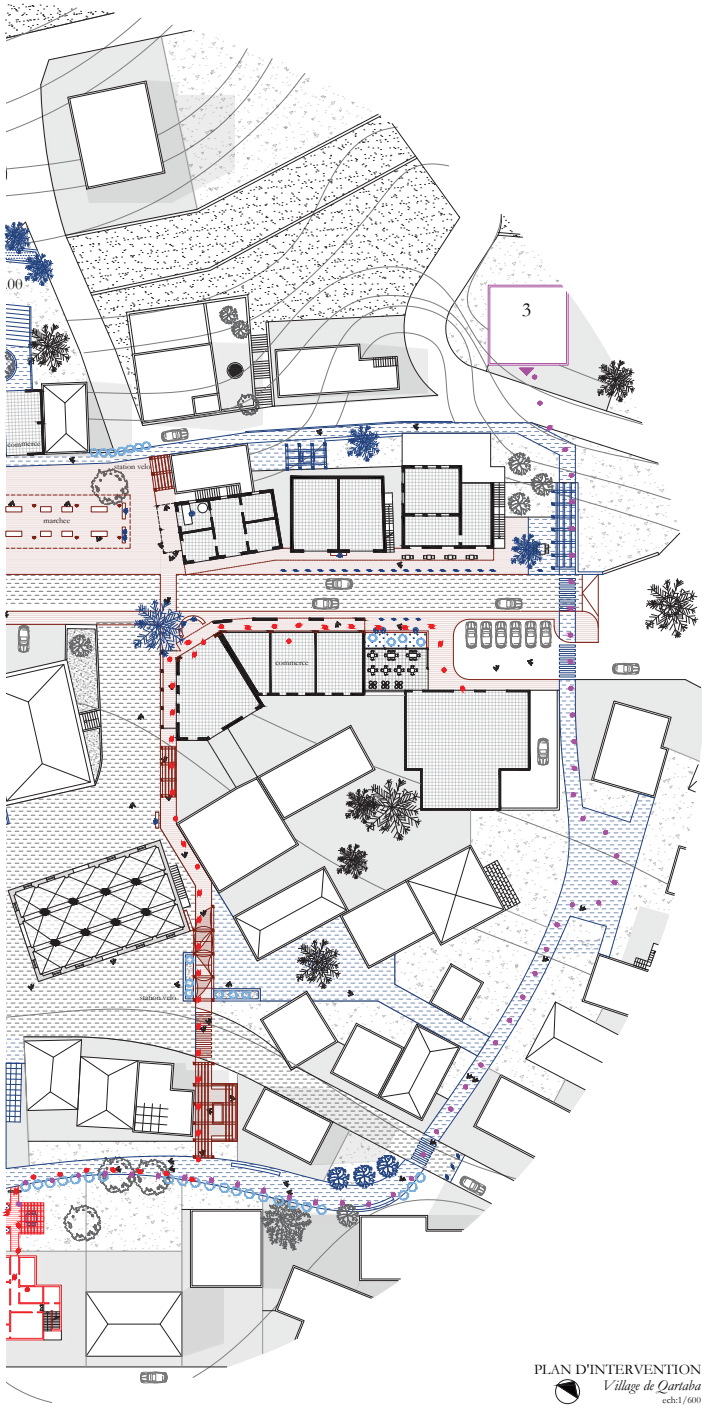
1- RACCORDEMENT DES NIVEAUX

Trouver les niveaux les plus équitable à relier et les points dans les courbes qui sont les plus éloignes pour créer une nouvelle topographie douce qui varie de 2 m.

2- ANALYSE SOLAIRE

Relier les espaces qui ont le plus d'ombre naturelle pour obtenir un chemin qui passe entre des espaces ouverts/ ensoleillés et ombragés a la fois.





PLAN D'INTERVENTION
Village de Qartaba
ech:1/600

3- BANDE RECREATIONELLE

Les regroupements de maisons étaient essentiellement former par les membres des familles qui construisaient des maisons les unes à côté des autres. La bande récréative est née de l'analyse topographique et solaire pour relier les différents regroupements

4- BANDE FONCTIONELLE

Distance entre les magasins commerciaux et les fonctions essentielles nécessaires chaque semaine afin de creer une bande fonctionelle.

Fig.48 - Intervention, the village becomes hospitable, a place for homecare, *drawn by Author , TFE 2022*

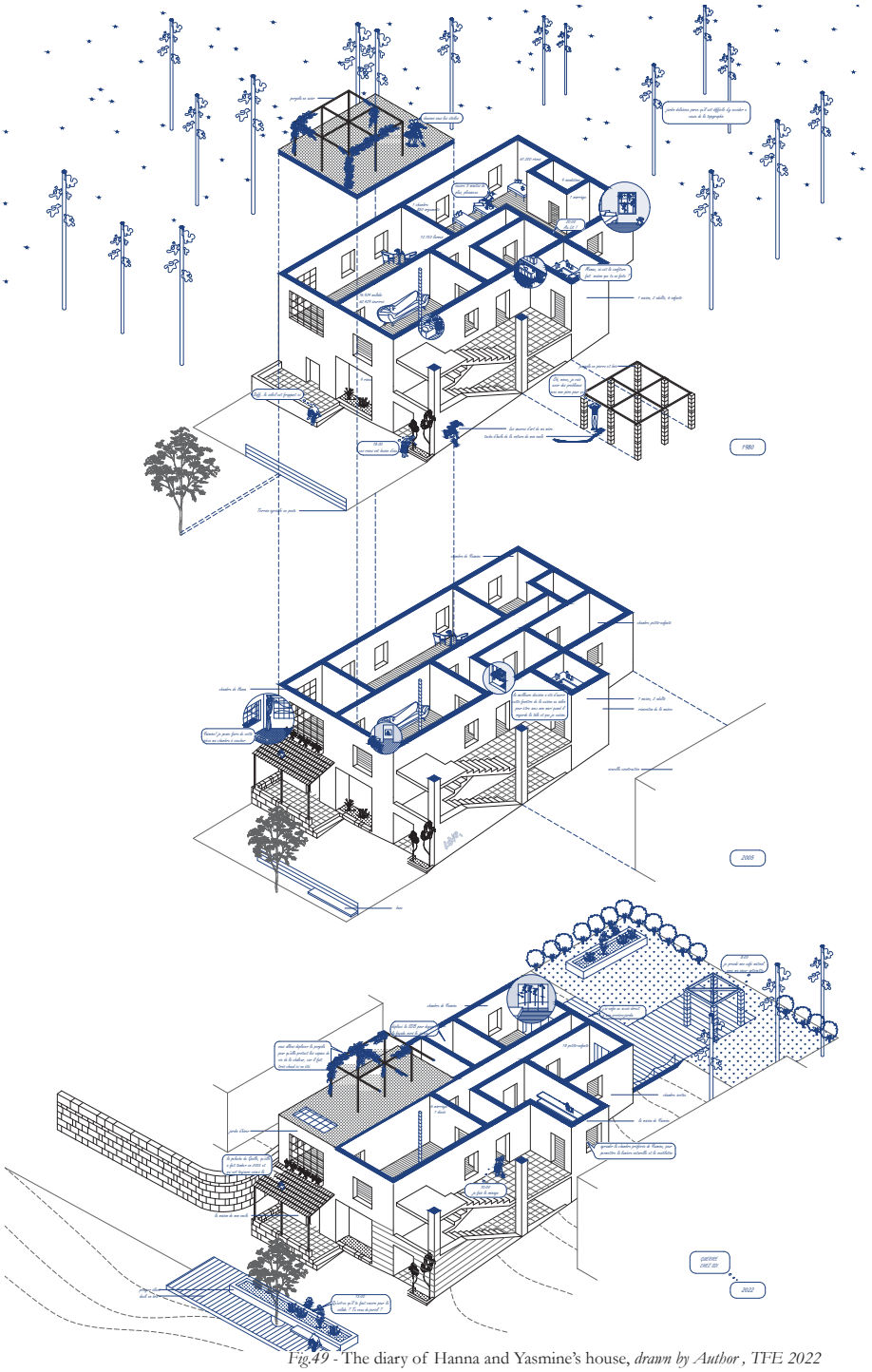


Fig.49 - The diary of Hanna and Yasmine's house, *drawn by Author , TFE 2022*

7 CONCLUSION

Healing is not only about treating physical symptoms as aimed by our contemporary healthcare facilities. Our ancestors, that relied solely on food and shelter to survive and protect themselves from enemies, understood their need to be in symbiosis with their environment. The dependence on sunlight was echoed in their dwellings where openings were chiseled in walls, and inner courts were conceived to allow a maximum volume of light and warmth into their homes to ensure wellbeing. The Roman Empire acknowledged for its avant-garde ideas regarding light created primitive glass coverings to warm homes, and baths. After establishing a greenhouse to cultivate their agriculture, they realized that sunlight was an absolute human right pushing them to establish a law that protected the access to natural light[57]. With the development of technology and the advancement of man's intellect, one would assume that there would be a progression on a holistic level. Nevertheless, our clinical spaces dismiss the use of the healing elements, prizing technical efficiency and hygiene over wellbeing and comfort.

This thesis shows that spaces, such as Maggie's Centres, translating the importance of light, views, and atmosphere into a unique design approach, can offer a better therapeutic environment than clinical spaces lacking them. **How can architecture overturn institutional norms of the care industry by engaging elements that contribute to health?** Views of nature have been proven to lower stress and anxiety by acting as a positive distraction, providing patients with an escape from their confined and cold rooms. Natural light proved to cause biological reactions in the body, preventing fatal diseases and helping in the curative process of others like tuberculosis. Windows have been installed at our architectural disposition to expedite natural light inside. The architectural elements have been proved to form a familiar milieu in a clinically functional context, endorsing freedom and control and helping patients feel psychologically rooted and ready to heal.

A manifestation for health and happiness must take place to advance our right to a wholesome living, just like the Roman Empire invested in the *"right to light"* law thousands of years ago. This dissertation emphasizes the role of architects in healthcare and calls for action upon us all to use those tools in our contemporary spaces, offering an architecture equivalent to a placebo effect, an architecture of hope. The themes of health and urbanity are blended into one to overcome spatial boundaries that were set for current healthcare institutions. A hospital can be in nature, a hospital system can exist in a village, and a hospital can be hospitable.

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57 Boubekri, *Daylighting, Architecture, and Health: Building Design Strategies, 20*

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The question of care developed in this thesis is one that is explored by likeminded individuals that have written **Books** exploring the topic and its different aspects such as:

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Jencks Keswick, Maggie. 1995 "A view from the front line", London
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Ulrich, Roger. 2002. "Effects of Gardens on Health Outcomes: Theory and Research." Chap. 2 In Healing Gardens: Therapeutic Benefits and Design Recommendations, edited by C.C. Marcus, and M. Barnes., 624. New York: John Wiley.
Ulrich, Roger. 1984. "View through a Window May Influence Recovery from Surgery". New York: Science: 420-1.
Llaguno Maider, and Altomonte Sergio. 2022. "Quantify stress level reduction induced by urban greenery perception." UCLouvain

Writing a **Manifesto** of care has been an opportunity to explore a new method to display my strong ambition and call for action on all architects. Some architecture manifestos that interested me throughout my research are:

Jacobs, Jane. 1993. "The Death and Life of Great American Cities". New York: Vintage Books.
Le Corbusier, and Frederick Etchells. 1986. "Towards a new architecture". New York: Dover Publications.
Loos Adolf. 2019. "Ornament and Crime". UK: Penguin
But it is important to note that the idea of publishing a set of fundamental beliefs did not reach its peak until the publishing of
Marx Karl, and Friedrich Engels. 2011. "The communist manifesto". New York: Penguin Books.
that made way to the freedom in publishing architectural manifestos that introduced Futurism, Cubism, Constructivism, Dada and notably De Stijl with the articles of
Van Doesburg Theo. 1922. "Manifest I of style". Amsterdam: De Stijl Journal
Venturi, Robert. 1966. "Complexity and contradiction in architecture". New York: Museum of Modern Art.
However before all of that, it is crucial to state that the first statement of architectural intent was
Vitruvius Pollio, and M. H. Morgan. 1960 "Vitruvius: the ten books on architecture". New York: Dover Publications.

Many **Thesis** projects have also been written about the subject:

Alves Costiera Elza. 2015. *"Healthcare architecture: History, Evolution, and new vision".* Researchgate. Accessed:April 20, 2022 https://www.researchgate.net/publication/282852376_Healthcare_Architecture_History_Evolution_and_New_Visions
Salima Meghani. 2016. *"A concept analysis of palliative care in the United States"* Wiley Online Library. Accessed: April 12, 2022. https://doi.org/10.1111/j.1365-2648.2003.02975
Osea Yvonne. 2014. *"Exploring sensory design in therapeutic architecture".* Carlton Univesity: thesis. Accessed April 12, 2022. https://doi.org/10.22215/etd/2014-10227

Talks about the matter have become more popular the past decade. People from different fields started to worry about their health and that of others and started asking the questions related to it. The **Videos** that have brought interesting evidence to my thesis are:

Rankin, Lisa. "Is there scietific proof we can heal ourselves?" TEDed, Md [Video] December 18, 2020, https://ed.ted.com/on/VrVLBxVB%20
Weller, Richard. "Could the sun be good for your heart?" Ted Talk, Video, December 21, 2020 https://www.ted.com/talks/richard_weller_could_the_sun_be_good_for_your_heart

Evidence that has been a crucial proof of the architectural credibility of my thesis being the Maggie's centers are furthermore detailed in **Website** of the firms themselves that has guided me through the thinking process of each project and led me to exercise the same fundamental elements in mine.

Foster + Partners. *"Maggie's Manchester".* Accessed 2 November 2020, https://www.fosterandpartners.com/projects/maggie-s-manchester/
Rogers Stirk Harbour + Partners. *"Maggie's West London Centre".* Accessed 2 November 2020 https://www.rsh-p.com/projects/maggies-west-london-centre/

Also, websites from the different NGOs and movements helped clarify the difference between various types of care notably hospice, palliative care, and cancer care. Local NGOs and hospitals in Lebanon have provided crucial proof through statistics to justify the need for such a project in this specific context.

American University of Beirut. *Policy Brief "Integrating palliative care into the health system in Lebanon"* Accessed on January 10, 2022 https://www.aub.edu.lb/k2p/Documents/K2P%20Policy%20Brief-%20Palliative%20Care-August%207%202018.pdf
Belgium Government. 2019. *"End of life care".* Accessed on December 12, 2021, https://www.healthybelgium.be/en/health-system-performance-assessment/specific-domains/end-of-life#EOL-1
Lubis Farah. *"History and Theory in Spatial Design: Dissertation The Maggie Centres: Architecture and Healing"* Academia. Accessed on April 12, 2022.
Lebanese Society of Medical Oncology. "Hospitals with cancer departments". Accessed on May 1, 2022. http://www.lsmo-lb.org/hospitals-with-cancer-departments?page=5
UPMC. 2014. *"Palliative and supportive institute"* Accessed on April 18, 2022. https://www.upmc.com/-/media/upmc/services/palliative-and-supportive-institute/resources/documents/psi-history-palliative-care.pdf
Oxford dictionary. *"definition of palliative care"* Accessed on April 18, 2022. https://www.dictionary.com/browse/palliate
The King Fund. *"principles of hospice design"* Accessed on April 29, 2022. https://www.kingsfund.org.uk/projects/enhancing-healing-environment/hospice-design
VITAS healthcare. *"Hospice vs. Palliative Care"* Accessed April 12, 2022. https://www.vitas.com/hospice-and-palliative-care-basics/about-palliative-care/hospice-vs-palliative-care-whats-the-difference#:~:text=Hospice%20is%20comfort%20care%20without,with%20or%20without%20curative%20intent
WELL. *"what is well certification"* Accessed April 14, 2022. https://www.well.support/what-is-well-certification~96811950-724f-4aec-9606-006b268591d9

ILLUSTRATIONS

Fig.1: Author
Fig.2: Author
Fig.3: https://www.architectmagazine.com/design/culture/the-enduring-legacy-of-paimio_o
Fig.4: Timetable created by Author, assembled from multiple sources
Fig.5: Collage by Author, base image source: https://www.civilwarmed.org/surgeons-call/pavilionhospitals/
Fig.6-7-8: Alvar Aalto Website https://divisare.com/projects/386217-alvar-aalto-fabrice-fouillet-paimio-sanatorium#lg=1&slide=15
Fig.9: Image of Louis Barragan as shown in source https://www.flickr.com/photos/pov_steve/4487101200/in/pool-29912871@N00/, edited by Author
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Fig.11: Dr Marc Brumann
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Fig.13: The Orientation of Buildings or Planning for Sunlight in William Atkins' book
Fig.14: by Aboulnaga, https://www.researchgate.net/figure/13-Shows-different-types-of-light-shelves-set-up-at-both-clear-and-overcast-sky_fig5_230728748
Fig.15-16: Split Time Cafe by Phillipe Rahm http://www.philipperahm.com/data/projects/splittimescafe/index.html
Fig.17: Catalogue Typologique, by Author
Fig.18: from Foster+Partners, edited by Author
Fig.19: from Richard Rogers, edited by Author
Fig.20: from Foster+Partners
Fig.21: 3D by Author
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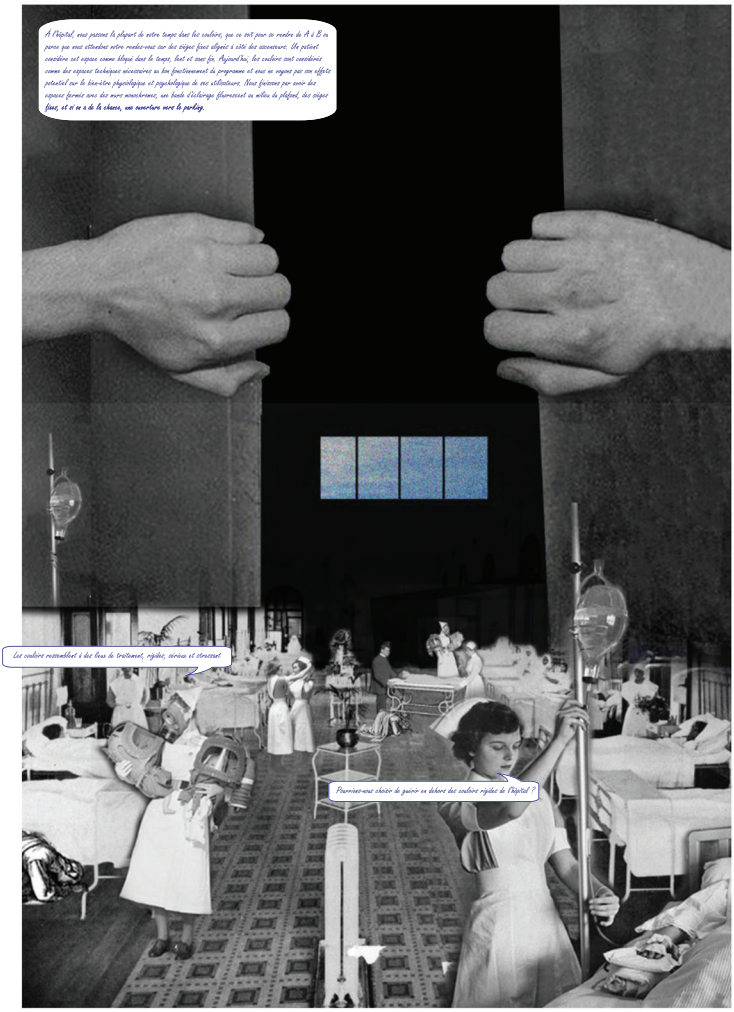
Fig.23: Vasari corridor https://mercurioviaggi.com/2019/04/01/vasari-corridor-open-in-2021/
Fig.24-36: Work done by Author in the course of TFE, 2022

ANNEXE

**writting on the following documents are made in French because the architectural project was presented in french conforming to school regulations in Brussels.*



COULOIR : ESPACE D'ATTENTE INTROVERTI, SOMBRE ET FERMER

Collage Réalité

Travail de Fin d'annee en & sur l'architecture | UCLouvain - LOCI - LBARC2239 - 2022

Mouaykel Gaëlle

ET SI ON S'OUVRAIT À LA MÉDITERRANÉE ?

Collage Vision

Travail de Fin d'annee en & sur l'architecture | UCLouvain - LOCI - LBARC2239 - 2022

Mouaykel Gaëlle

EXTERIEUR

PLAFOND

MUR

ELEMENT

PIECE

EAU

VERDURE

PLAFOND

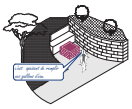
TOITURE

PERGOLA

MURET

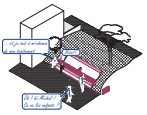
MUR

OUVERTURE



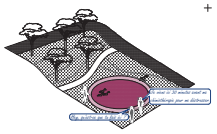
Ressourcer

une source d'eau potable dans le bureau général et puisoir mis très tôt dans le village de Gartaba



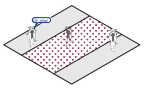
Rafraichire

une source d'eau fraîche entretenue par un nouveau terrasse de bana situant des conversations dans la place du village de Gartaba, Liban



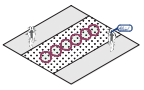
Regrouper

une architecture, étang dans la ferme du Monastère de l'Esprit Saint Notre Dame des Secours, Liban



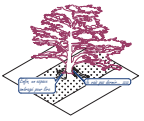
Planter et Relier

herbacée une strate vers pour planter et relier par la verdure dans l'intérieur des îlots



Cultiver et Diviser

Arbustes une strate vers pour planter et diviser vers deux terrains

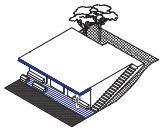


Ombrager

arbores une strate vers pour ombrager et s'installer sous le vider Bisnasi dans la place du village

Incorporer

arbores une canopée pour ombrager et entoure les places dans l'enlarge du monastère de Gartaba

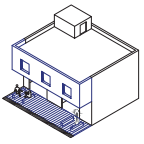


Couvrir

Joseph qui embrage un passage adjacent à sa façade commercial, dans la place du village pour exposer ses légume à l'extérieur

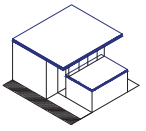
Socialiser

portche de madame Antoinette sur lequel elle prenait son café du matin et parle aux passants



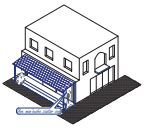
Attirer

Fenêtre créée par les élèves du bâtiment pour créer un espace d'accès devant les boutiques commerciaux du village



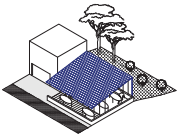
Infiltrer

plafonds manipulés à laisser la lumière s'infiltrer dans les espaces de manière indirecte - Maggie's by Heatherwick studio



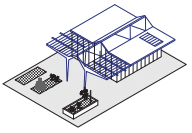
Attendre

structure devant la boulangerie de Tanbra et la boulangerie de Kfaa qui forment aux gens d'attendre leur repas à l'abri des intempéries et du soleil



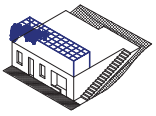
Abriter

l'extension d'un restaurant qui forment avec chemin d'être protégé mais aussi de s'ouvrir vers la nature



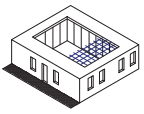
Connecter et Héberger

manipulation du plafond pour relier les espaces intérieurs au contexte naturel extérieur - Maggie's Centre de Frazer-Nashers



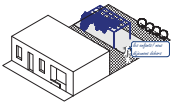
Entretenir

maison de mes grandparents qui ont ajouté une pergola sur tout toit pour protéger la maison des rayons du soleil et disposer d'une extension de espace agréable



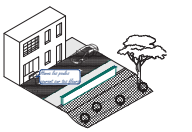
Soigner

une cour intérieure entourée par une structure de pergola reposé sur bosse d'enfance et de adulte de Georgette



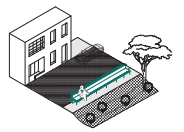
Etaler et Chérir

une pergola ajouté à la cour, arrière comme extension des espaces de sa vie où de nombreux familiaux actions à chérir



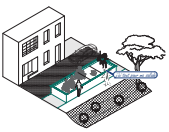
Securiser

muret construit par Hanna pour séparer la route de ses terres agricole et protéger la promenade de la topographie de terrain



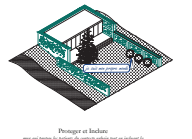
Observer

le muretd devient un banc qui permet à Hanna de profiter de son déjeuner devant son terrain fructueux rempli de fruitmiers



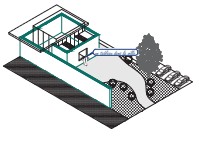
Nicourir

Après le décès de Hanna, Yasmine, sa femme, a créé un potager surélevé pour pouvoir continuer à cultiver ses denrées en souffrir le dos.



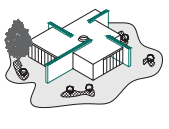
Protéger et Inclure

mur qui protège les jardinets de contrôle urbain tout en incluant la nature à l'intérieur - Maggie's centre par Reiach et Hall



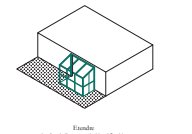
Guider et Cadrer

mur qui dirige vers l'intérieur tout en traversant dans certaines directions pour cadrer des vues sur la nature - Maggie's Centre de Richard Rogers



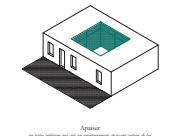
Autonomiser et Tisser

série de murs qui dessine l'intérieur pour autonomiser de espace privée du public et se prolonge vers l'extérieur pour lécer le lieu avec la nature - Maggie's Southampton



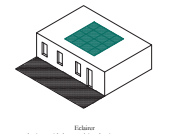
Etendre

rétendu qui offre un espace intérieur à l'extérieur



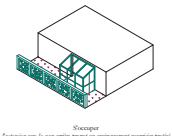
Apaiser

un patio intérieur qui crée un environnement épaissant autour de lui



Eclairer

lumière qualifiée pour éclairer des pièces communes



S'occuper

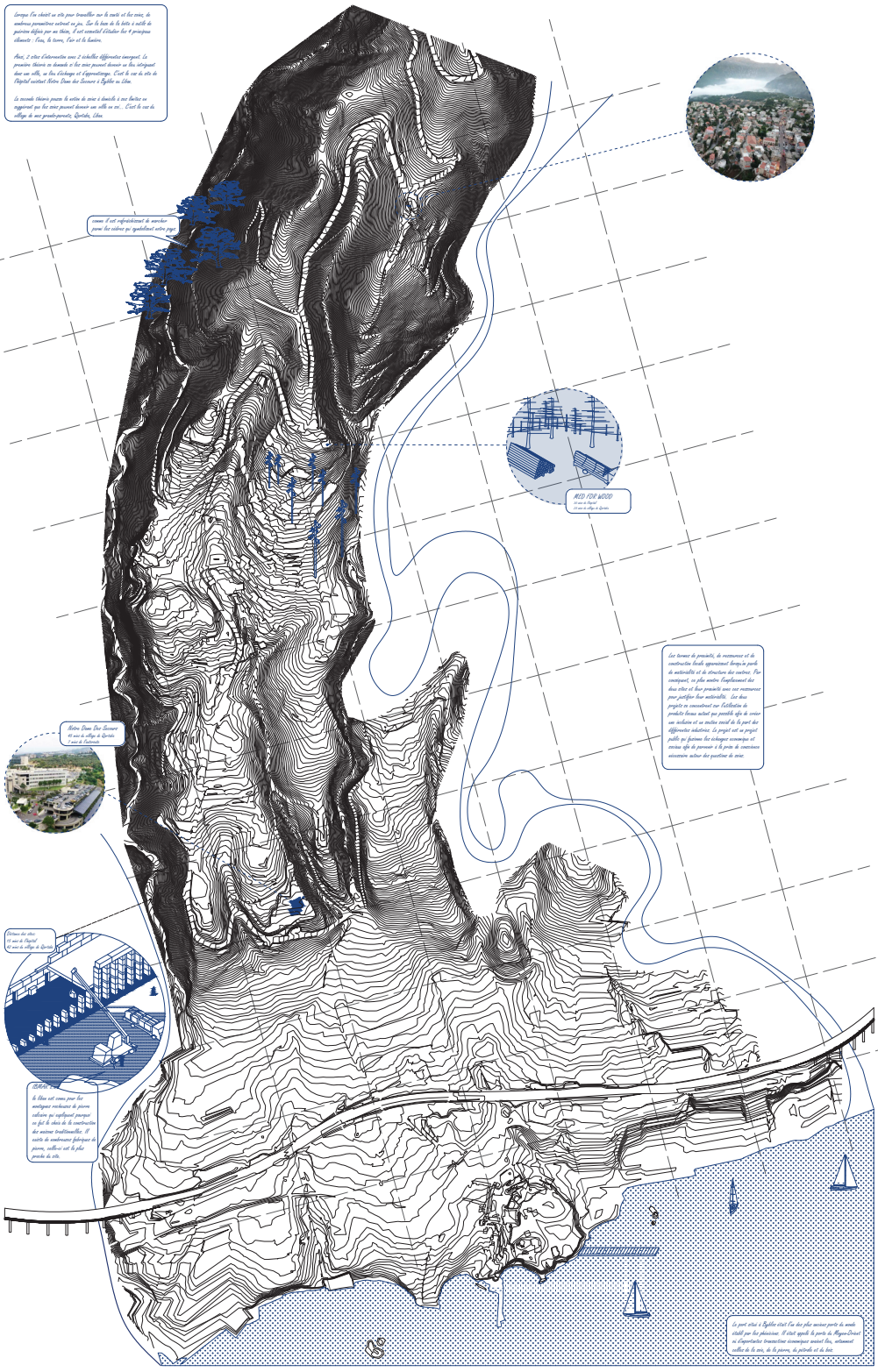
l'extension vers la cour arrière permet un environnement nourricier protégé

GESTE DE CARE

Catalogue Typologique des elements du soin vernaculaire du village de Gartaba et les cas des Maggie's Care Center

Travail de Fin d'annee en & sur l'architecture | UCLouvain - LOC1 - LBARC2230 - 2022

Mouaykel Gaëlle



RESOURCE

Topographie du terrain, proximité, et ressource locale bois et pierre calcaire

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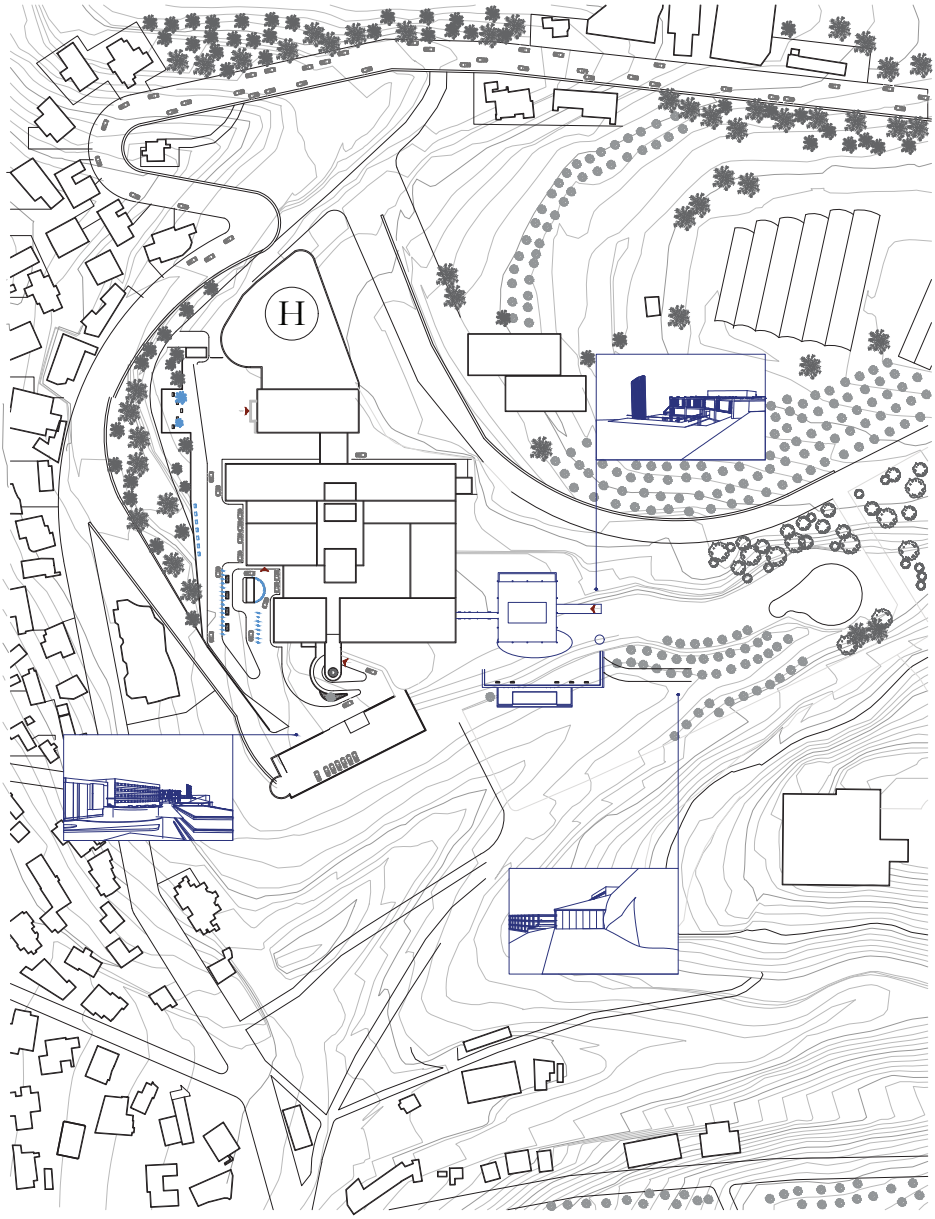
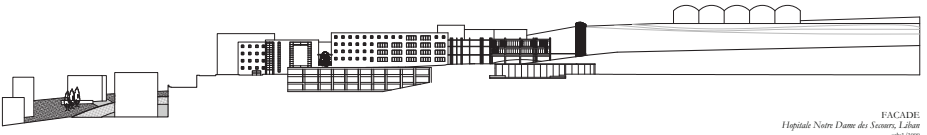
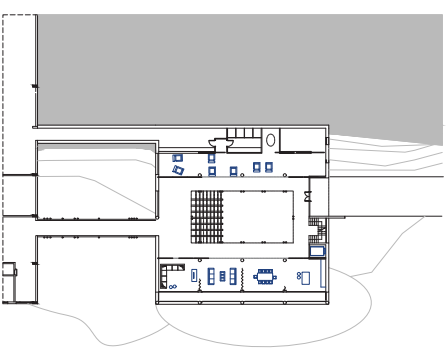
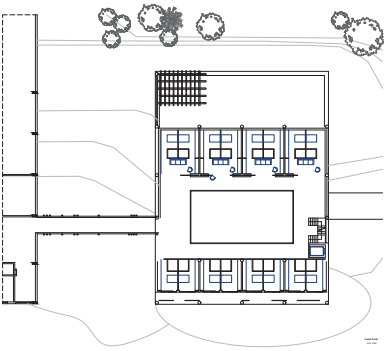


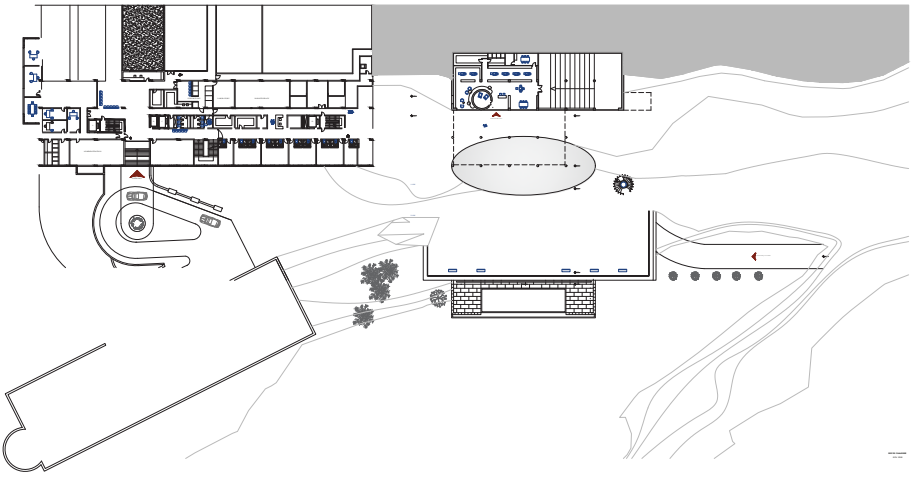


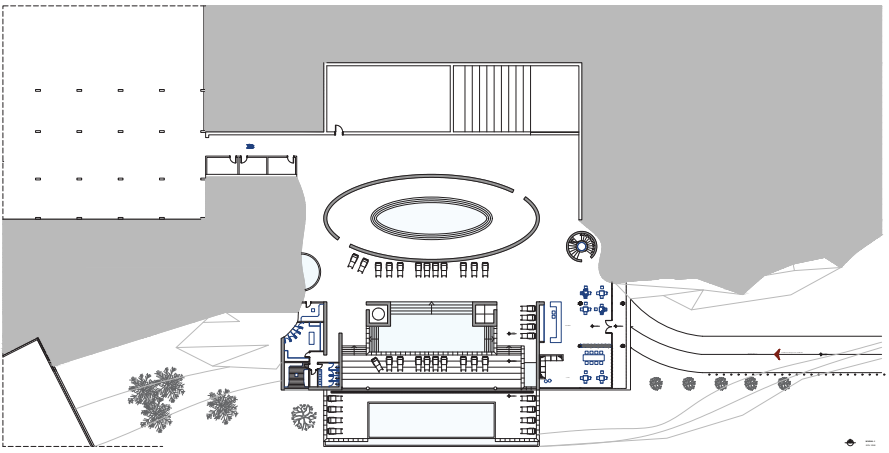
FACADE
Hopitale Notre Dame des Seoeurs, Liban
echt:1/1000

ET SI LE SOINS DEVENAIT UN ESPACE CONVIVIAL DANS LA VILLE ?
Un espace pour tout le monde - Vision d'implantation du centre de soin palliatif dans un contexte hospitalier
Travail de Fin d'annee en & sur l'architecture | UCLouvain - LOCI - LBARC2239 - 2022
Mouaykel Gaelle









UN LIEU D'ÉCHANGE DANS LA VILLE

Plans Echelle 1/150

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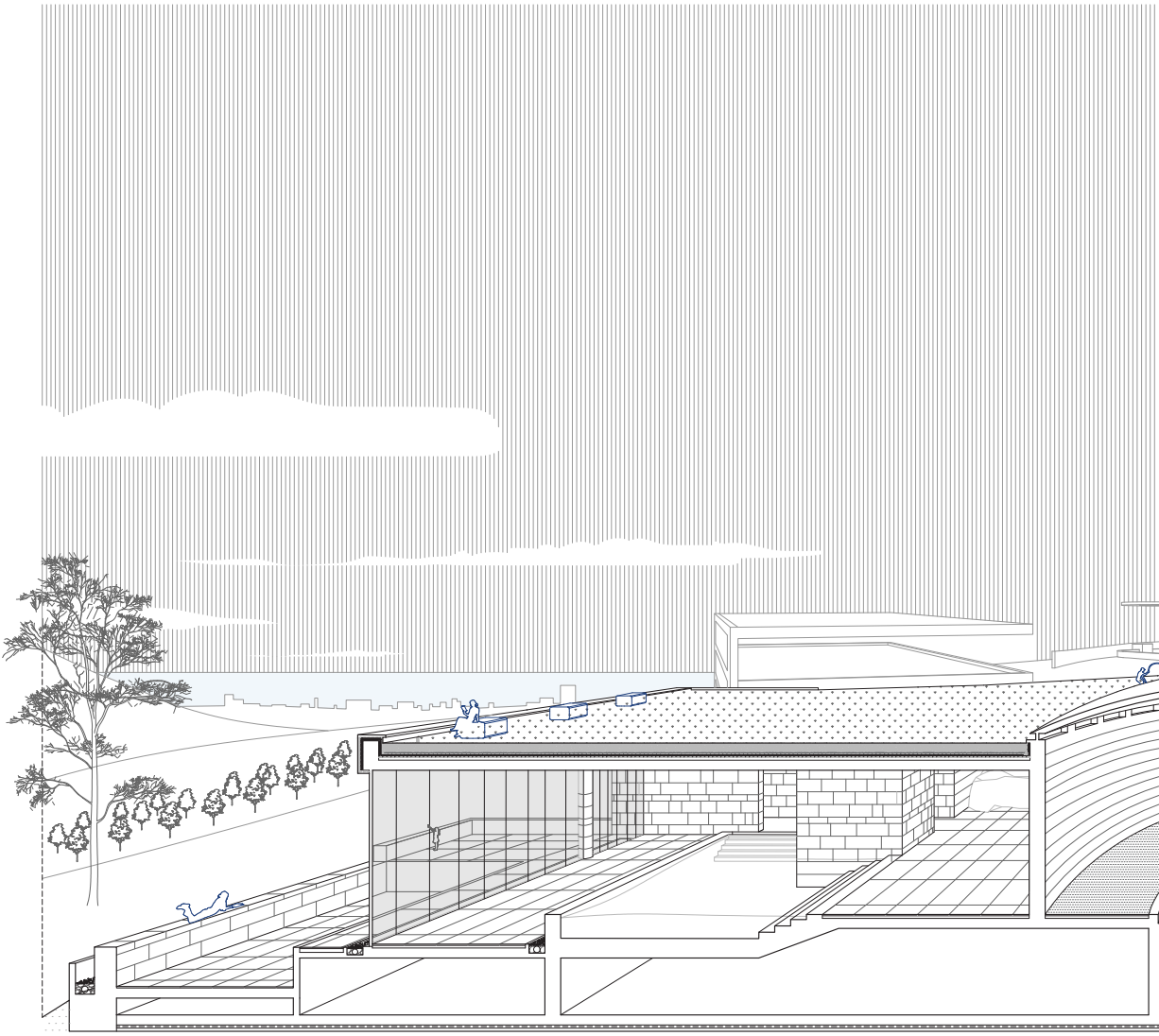
Mouaykel Gaëlle

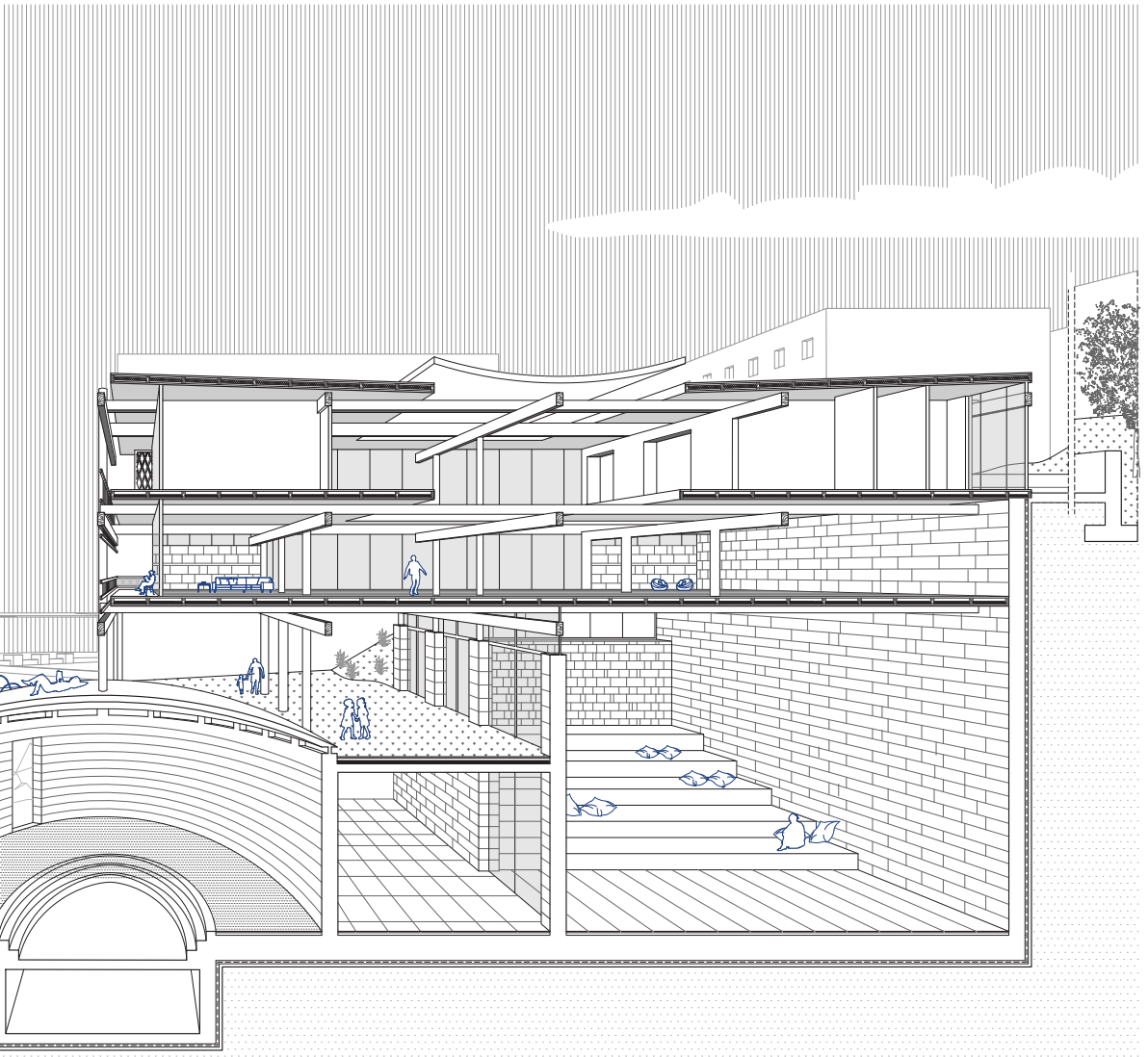


UN LIEU D'ÉCHANGE DANS LA VILLE QUI OFFRE DU BIEN-ÊTRE

Coupe Perspective

Travail de Fin d'annee en & sur l'architecture | UCLouvain - LOCI - LBARC2239 - 2022

Mouaykel Gaëlle

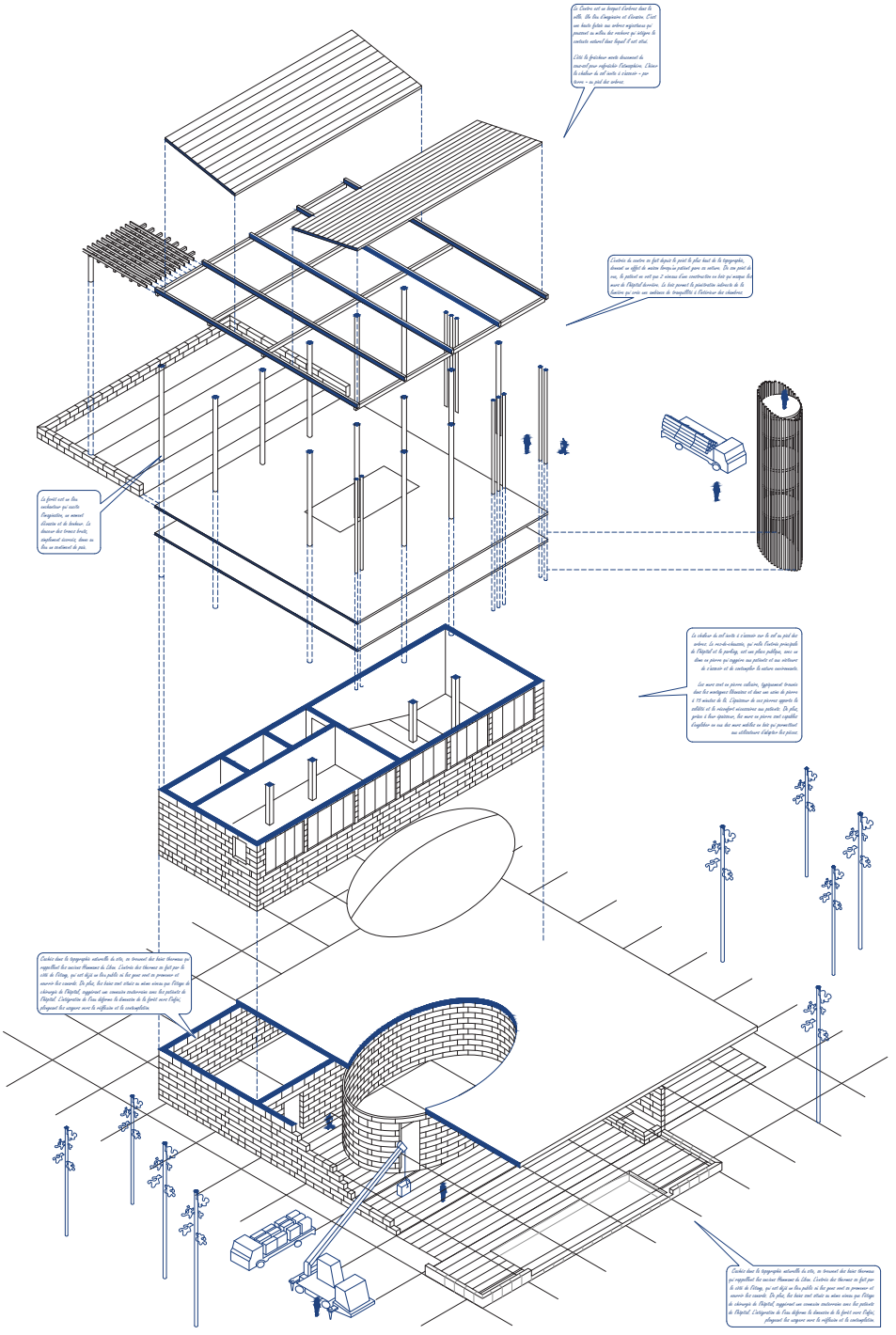


UN LIEU D'ÉCHANGE DANS LA VILLE QUI OFFRE DU BIEN-ÊTRE

Coupe Perpective

Travail de Fin d'annee en & sur l'architecture | UCLouvain - LOCI - LBARC2239 - 2022

Mouaykel Gaëlle



UN LIEU D'ÉCHANGE DANS LA VILLE QUI OFFRE DU BIEN-ÊTRE

Exploded Diagram

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UN REGARD SUR LE PAYSAGE

Point de vue du salon

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Mouaykel Gaëlle

YASMINE, 75 ans

Bonjour, je suis Yasmine. J'ai vécu toute ma vie à Qartaba, il y a quelques années on m'a diagnostiqué un cancer du sein et j'en ai été guérie. Mais depuis, j'ai l'impression que je ne peux plus marcher sous les rayons de soleil forte, ce qui me rend difficile de faire mes courses chaque semaine.

Trajet de Yasmine pour faire les course

①

CHARBEL, 53 ans

Au fil des ans, j'aimé l'emplacement de ma maison qui est directement relier au commerce et qui m'aide à exposer mon travail artisanal sur la façade de cette rue. C'est pour cela j'ais decider de quitter ma maison a Beyrouth et faire ma retraite dans le village. Cependant, Qartaba deviens une destination de plus en plus populaire, j'ai l'impression de manquer d'intimité dans ma maison située entre la route d'entrée principale du village et le parc public. J'aime être à l'extérieur dans la nature, mais j'aime aussi de pouvoir être seule sans que personne ne me voie.

②

ANTOINETTE, 55 ans

J'avais l'habitude d'aller voir ma sœur tous les jours les dernier 30 ans pour le café du matin, mais maintenant je sens que je n'ai pas la force de marcher les mêmes distances et les monter tous les jours. Nous limitons donc notre rituel à 2 fois par semaine. Aussi, j'habite du côté le moins peuplé du village et me sens des fois donc déconnectée de toute interaction humaine.
J'aime aller à l'église qui se trouve au centre pour retrouver ma famille et mes amis. Cependant, comme il n'y a pas de place pour s'asseoir à côté de l'église, nous limitons notre conversation à 10 minutes sous le soleil frappant.

Trajet de chez Antoinette a sa soeur

③

CLAUDE, 40 ans

J'ais 40 ans, et malheuresement deja en phase terminale. Les médecins ont décidé que je ne pouvais plus rien faire. Par conséquent, j'ai décidé de me retirer dans ma maison d'enfance au village. Toutes les 2 ou 3 semaines, je m'injecte une perfusion qui me fournit l'énergie et l'hydratation dont j'ai besoin pour rester debout dans mes dernières années. Pour cette injection, je dois faire un trajet de 45 minutes pour me rendre à l'hôpital le plus proche et passer généralement 1 à 2 heures assise dans une pièce ennuyeuse pour que mon corps absorbe le liquide.

Trajet vers elie pour le soutenir

④

ELIE, 60 ans

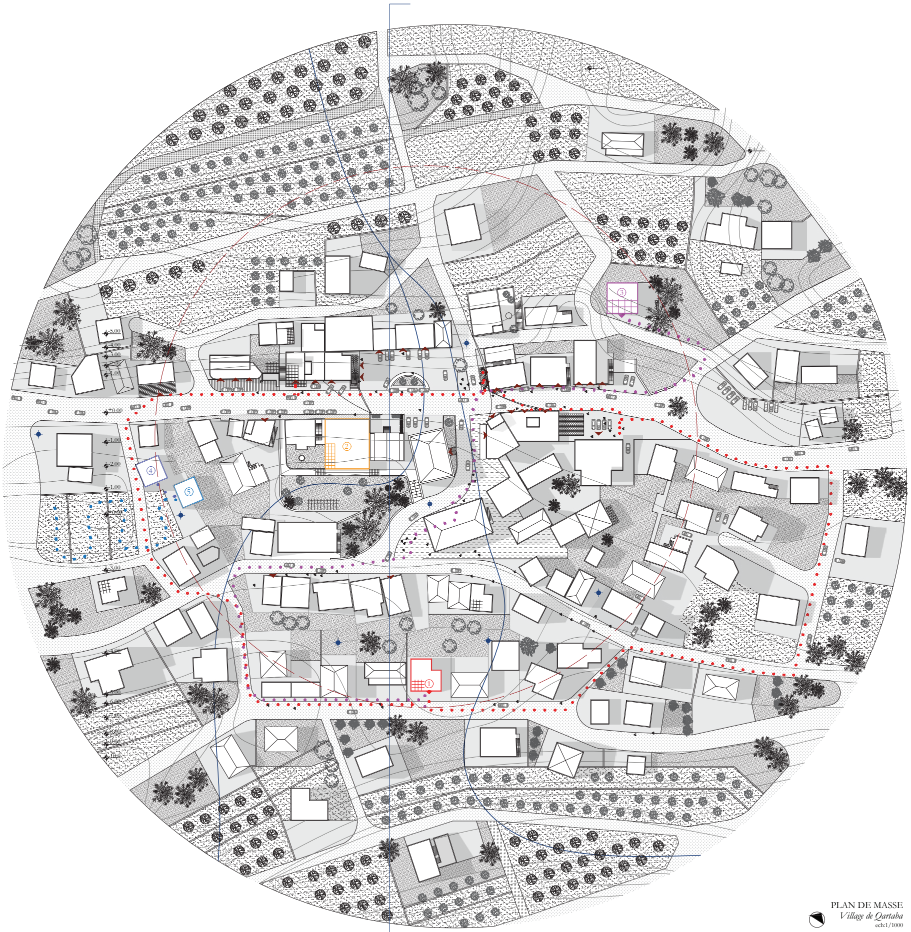
Je suis un patient du cancer et j'ais toujours la chance de me battre contr cette maladie. J'ai décidé de rester au village et de m'occuper de mes agricultures comme je le fais habituellement, au lieu de rester dans une chambre d'hôpital fermée a rien faire. Cependant, je dois demander à un membre de ma famille de venir de la ville au village toutes les deux semaines pour m'emmener à l'hôpital pour ma chimiothérapie. J'aimerais pouvoir rester chez moi et ne pas avoir à passer 3 heures branchée à une intraveineuse dans un espace fermé.

Chemin vers son champs agricole

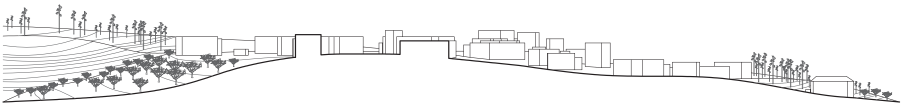
⑤

LEGENDE:

- Arracher plan d'intervention
- Point de raccordement de niveaux
- Entree Commerciale
- Eau souterraine
- Pave
- Route Sableuse
- Route Asphalte
- Beton Cire
- Jardin
- Terre Agricole



PLAN DE MASSE
Village de Qartaba
ech:1/1000



GESTE DE CARE
Catalogue Typologique des elements du soin vernaculaire du village de Qartaba et les cas des Maggie's Care Center
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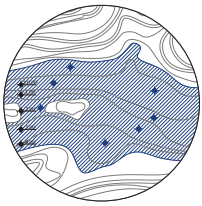
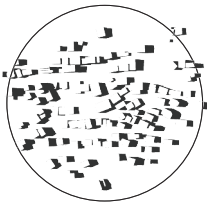
Mouaykel Gaëlle



1- RACCORDEMENT DES NIVEAUX

Trouver les niveaux les plus équitable à relier et les points dans les courbes qui sont les plus éloignes pour créer une nouvelle topographie douce qui varie de 2 m.



2- ANALYSE SOLAIRE

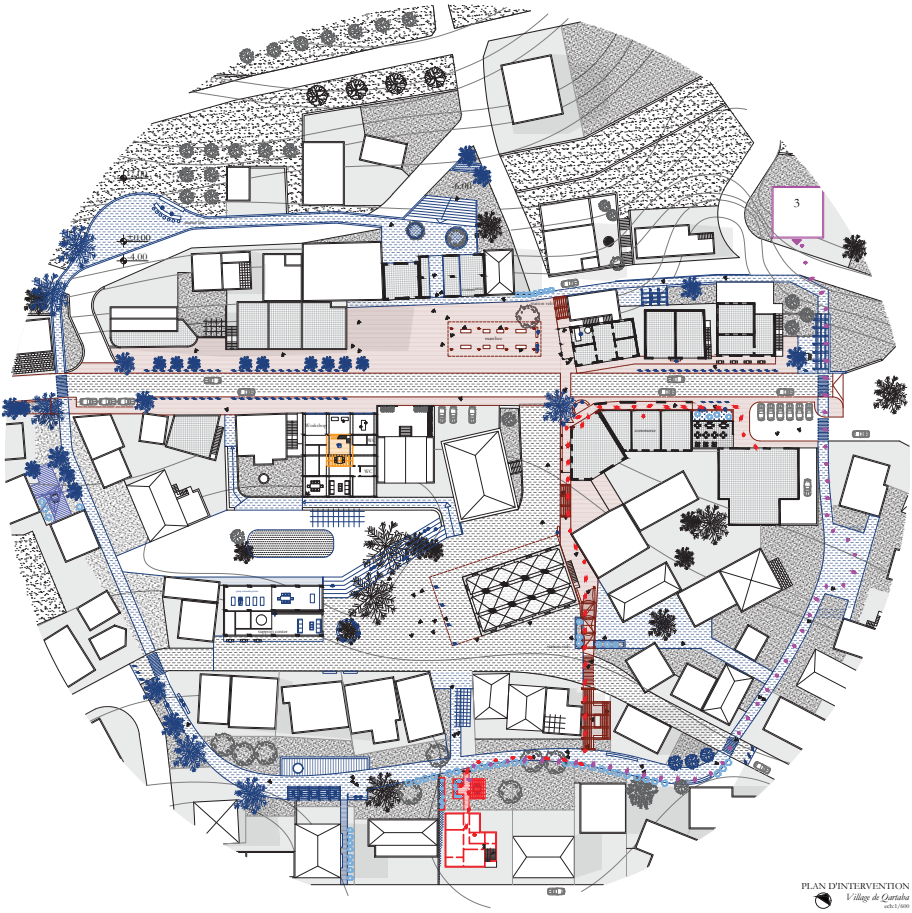
Relier les espaces qui ont le plus d'ombre naturelle pour obtenir un chemin qui passe entre des espaces ouvert/ensoleillés et ombragée a la fois.

3- BANDE RECREATIONELLE

Les regroupements de maisons étaient essentiellement former par les membres des familles qui construisaient des maisons les unes à côté des autres. La bande récréative est née de l'analyse topographique et solaire pour relier les différents regroupements et révéler des espaces publics de socialisation.

4- BANDE FONCTIONELLE

Distance entre les magasins commerciaux et les fonctions essentielles nécessaires chaque semaine afin de creer une bande fonctionelle.



PLAN D'INTERVENTION

Village de Qartaba

echt.1/600

UN CONTEXTE FAMILIER ADAPTÉ À NOS BESOINS

Une intervention urbaine adaptée aux besoins des habitants

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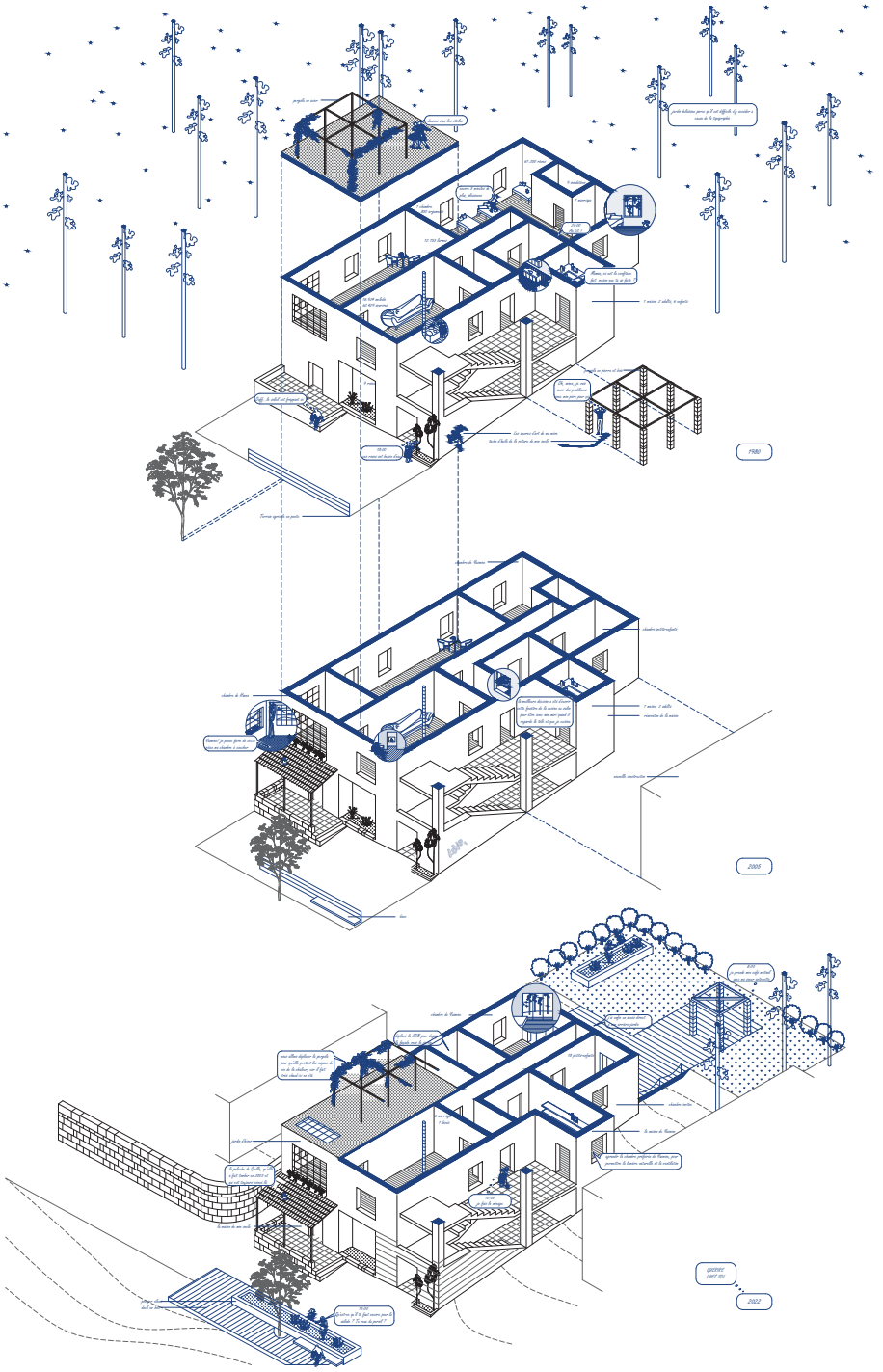

LE JOURNAL DE L'APPARTEMENT DE YASMINE ET HANNA

comment les espaces architecturaux sont pratiqués et vécus pour permettre de guerrir chez soi

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Mouaykel Gaëlle