

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



**Palestine Polytechnic University**

**College of Engineering and Technology**

**Department of Civil and Architectural Engineering**

**Architectural Engineering**

**The Name of Graduation project:**

**Ideas for Developing Health Services in Hebron Governorate**

**Done By:**

**Rose Abu Maria ... Yara Abu Ayyash**

**Supervisor By:**

**Dr. Ghassan Dweik**

**(2021-2022)**

## الإهداء

نهدي هذا العمل المتواضع الى أباينا الذين لم يبخلوا علينا يوماً بشيء والى أمهاتنا اللواتي زودن بالحنان والمحبة

ونقول لهم: أنتم وهبتونا الحياة والامل والنشأة على شغف الاطلاع والمعرفة ...

والى أخوتنا وأسرنا جميعاً...

ثم الى كل من علمنا حرفاً أصبح سنا برقه يضئ الطريق أمامنا...

والى زملائنا وزميلاتنا الى الشموع التي تحترق لتضيء الطريق للآخرين...

الى الذين كانوا يساندوننا ويتنازلون عن حقوقهم لإرضائنا والعيش في هناء ...

إلى وطني فلسطين .... أرضاً وشعباً

## الشكر والتقدير

نبدأ بالشكر لله عز وجل فالحمد لله الذي أكرمنا بهذا وما توفيقنا الا بفضلته وكرمه جل في علاه

قال الحبيب المصطفى ﷺ: (من لا يشكر الناس لا يشكر الله)

نتقدم بجزيل الشكر والامتنان إلى جامعتنا الحبيبة ... "جامعة بوليتكنك فلسطين" ... التي احتضنتنا

طوال فترة دراستنا في كلية الهندسة والتكنولوجيا ...

كما نتقدم بالشكر الجزيل إلى دائرة الهندسة المدنية والمعمارية ... من إدارة وهيئة تدريسية ...

ونتقدم بالشكر لصحة الخليل وبالأخص الدكتور خالد سدر، وقسم الهندسة... على مساعدتنا في هذا العمل

ونتقدم بالشكر الجزيل إلى أستاذي ومشرفي القدير ... الدكتور غسان الدويك ... امتناني له على مساعدتنا وتوجيهنا

ودفعنا نحو الأفضل، وأسأل الله أن يزيده علماً وأن يحفظه ...

وفي النهاية نتقدم بجزيل الشكر والعرفان إلى كل من ساهم في انجاز هذا العمل...

وأسأل الله عز وجل ان يتقبل مني هذا العمل المتواضع...



## المخلص

أفكار تطوير الخدمات الصحية في منطقة شمال الخليل  
إعداد:

روز أبو ماريا ... يارا أبو عياش  
جامعة بوليتكنك فلسطين ٢٠٢١

إشراف:

د. غسان الدويك

في ظل الظروف الصعبة يعاني المجتمع الفلسطيني عامة، وسكان شمال مدينة الخليل خاصة من نقص في الخدمات الصحية، فقد اولت مديرية صحة شمال الخليل اهمية لذلك، وعليه فقد تم طرح تصميم سلسلة مراكز صحية في عدة مناطق من منطقة شمال الخليل بمستويات مختلفة وتم اختيار كل من منطقة نوبا وصوريف وخربة صافا وشيوخ العروب لإقامة مركز صحي في كل منها وذلك لتلبية احتياجات هذه المناطق من الخدمات الصحية.

وكان لنا الشرف في ان نقوم بهذا العمل، فقد كرسنا الكثير من الوقت والجهد في التحليل وجمع المعلومات واجراء المقابلات للقيام بعدها بتصميم المراكز الصحية. ولتحقيق ذلك تم دراسة حالات مشابهة سواء على المستوى المحلي أو العالمي والتي اخذت بعين الاعتبار عند تحديد هيكلية المشروع والفراغات المعمارية المقترحة فيه، تبعها اعتماد قطع الاراضي التي كان قد سبق واقترحتها البلديات وذلك لما تتمتاز به من مؤهلات، لحين الوصول الى الفلسفة المعمارية في تصميم الموقع العام والمبنى القائم عليه.

## **Abstract**

### **Ideas for developing health services in the North Hebron area**

#### **Prepare:**

**Rose Abu Maria... Yara Abu Ayyash**

**Palestine Polytechnic University 2021**

#### **Supervisor:**

**Dr.. Ghassan Dweik**

**In the middle of these difficult circumstances that our Palestinian people, in general, and North Hebron and Middle Hebron residents in special, suffer from a lack of health services. The North and Middle Hebron Health Directorate paid attention to those. Accordingly, the design of a series of health centers was proposed in several areas of the north and middle Hebron region at different levels. Nuba and Surif, which are located in the north of Hebron, and Abu Katila and the municipality suburb, which are located in the city of Hebron, were chosen to establish a health center in Each of them in order to meet the needs of these areas of health services.**

**We had the honor to do this work, as we devoted a lot of time and effort in analyzing, collecting information and conducting interviews, to then design the health centers.**

**To achieve this, similar cases were studied, whether at the local or international level, which were taken into account when determining the structure of the project and the proposed architectural spaces in it, followed by the adoption of plots of land that had previously been proposed by the municipalities, due to their qualifications, until reaching the architectural philosophy in the design of the site General and the building on which it is based.**

## **Table Of Contents**

<b>Dedication .....</b>	<b>2</b>
<b>Acknowledgment.....</b>	<b>3</b>
<b>Abstract .....</b>	<b>6</b>
<b>Abstract (Arabic).....</b>	<b>5</b>
<b>Table Of Content .....</b>	<b>7</b>
<b>List Of Figure .....</b>	<b>11</b>
<b>List Of Table .....</b>	<b>13</b>
<b>Chapter One: Introduction Of Research Problem .....</b>	<b>14</b>
<b>Preface.....</b>	<b>15</b>
<b>Research Problem.....</b>	<b>15</b>
<b>Research Aims .....</b>	<b>16</b>
<b>Research Methodology .....</b>	<b>16</b>
<b>Search Obstacles.....</b>	<b>17</b>
<b>Search Structure .....</b>	<b>17</b>
<b>Chapter Tow : Theoretical Studies.....</b>	<b>18</b>
<b>Introduction.....</b>	<b>19</b>
<b>The Public Health.....</b>	<b>19</b>
<b>The Concept of Public Health.....</b>	<b>19</b>
<b>The Role of Public Health .....</b>	<b>19</b>
<b>Public Health Goals.....</b>	<b>20</b>
<b>Islam and Health .....</b>	<b>20</b>
<b>Types of Health Care Services.....</b>	<b>20</b>
<b>Therapeutic Health Services Building.....</b>	<b>20</b>
<b>Reality of Health in the Palestinian Territories.....</b>	<b>22</b>

<b>Palestinian health system.....</b>	<b>22</b>
<b>Primary health care in Palestine.....</b>	<b>23</b>
<b>Health in north Hebron .....</b>	<b>25</b>
<b>The Health Situation in the city of Hebron.....</b>	<b>25</b>
<b>Conclusion .....</b>	<b>26</b>
<b>Chapter Three: Planning and Design Standards.....</b>	<b>27</b>
<b>Preface.....</b>	<b>28</b>
<b>Planning standards for health centers.....</b>	<b>28</b>
<b>Stages of the planning process.....</b>	<b>28</b>
<b>Determine the location of the service for the health center...28</b>	
<b>Determine the orientation of the health center building... 28</b>	
<b>Architectural principles and general requirements .....</b>	<b>29</b>
<b>Areas of planning in health centers.....</b>	<b>29</b>
<b>Areas to the health center .....</b>	<b>29</b>
<b>Scope of service of health centers .....</b>	<b>30</b>
<b>Design criteria for health centers .....</b>	<b>30</b>
<b>Principles and considerations to be taken into account when starting to design a health center.....</b>	<b>30</b>
<b>The basic components and elements of health centers.....</b>	<b>31</b>
<b>Movement relationships in the health center.....</b>	<b>31</b>
<b>Interior design standards for colors in health centers.....</b>	<b>32</b>
<b>Conclusion .....</b>	<b>32</b>
<b>Chapter Four: Case studies.....</b>	<b>33</b>
<b>Health care center, ciudad real, Spain.....</b>	<b>34</b>

<b>The Goal of the Project.....</b>	<b>34</b>
<b>Project description.....</b>	<b>34</b>
<b>Project location.....</b>	<b>35</b>
<b>Site Plan.....</b>	<b>35</b>
<b>Components of the project.....</b>	<b>36</b>
<b>Section and Elevation.....</b>	<b>36</b>
<b>Al-Rama health center, Hebron.....</b>	<b>37</b>
<b>The Goal of the Project.....</b>	<b>38</b>
<b>Project location.....</b>	<b>38</b>
<b>Site Plan.....</b>	<b>38</b>
<b>Components of the project.....</b>	<b>39</b>
<b>Section and Elevation.....</b>	<b>40</b>
<b>Conclusion .....</b>	<b>41</b>
<b>Chapter Five: Project location Studies and analyzes.....</b>	<b>42</b>
<b>Preface.....</b>	<b>43</b>
<b>Site analysis.....</b>	<b>43</b>
<b>Palestine.....</b>	<b>43</b>
<b>Climate of Palestine.....</b>	<b>44</b>
<b>Hebron city.....</b>	<b>44</b>
<b>Geographical location .....</b>	<b>44</b>
<b>The location of the project.....</b>	<b>45</b>
<b>Nuba.....</b>	<b>45</b>
<b>Access to the proposed plot.....</b>	<b>48</b>
<b>The forth level center site to be designed.....</b>	<b>49</b>

<b>Surif.....</b>	<b>50</b>
<b>Access to the proposed plot.....</b>	<b>53</b>
<b>The second level center site to be designed.....</b>	<b>54</b>
<b>Chapter Six: Project program .....</b>	<b>55</b>
<b>Introduction.....</b>	<b>56</b>
<b>The proposed components and section of the project .....</b>	<b>56</b>
<b>Functional Relationships .....</b>	<b>56</b>
<b>Tables of spaces.....</b>	<b>57</b>
<b>Health center sections.....</b>	<b>57</b>
<b>Department spaces.....</b>	<b>57</b>
<b>List of sources and references.....</b>	<b>63</b>

## List Of Figures

Figure (1): Health Care .....	34
Figure (2 ): Center Ciudad Real.....	34
Figure (3) : Project Location details.....	35
Figure (4) : Ciudad Real Health Care Center.....	35
Figure (5) : Central Courtyard.....	36
Figure (6) : Master plan .....	36
Figure (7) : section.....	37
Figure (8): Clarify the parts of the project .....	37
Figure (9): RAMAH HEALTH CENTER .....	37
Figure (10) : Location Ramah Health .....	38
Figure (11) : Site plan Ramah Health .....	39
Figure (12): Basement Plan .....	39
Figure (13): Ground Plan .....	39
Figure (14): First plan .....	39
Figure (15): Elevations .....	40
Figure (16): Section A-A & Section B-B .....	40
Figure (17): Clarify the parts of the project .....	41
Figure (18): Location of Palestine in the World .....	43
Figure (19): Geographical location .....	44
Figure (20): Climate in Nuba .....	45

Figure (21):Average High and Low Temperature in Nuba .....46

Figure (22): Hours of Daylight and Twilight in Nuba.....46

Figure (23): Average Wind Speed in Nuba .....47

Figure (24): Wind Direction in Nuba .....47

Figure (25): Topography .....48

Figure (26): proposed plot .....48

Figure (27): Streets plot of land .....49

Figure (28): Topographic .....49

Figure (29): Clarify the parts of the project .....49

Figure (30): Climate in Surif .....50

Figure (31): Average High and Low Temperature in Surif .....51

Figure (32): Hours of Daylight and Twilight in Surif .....51

Figure (33): Average Wind Speed in Surif .....52

Figure (34): Wind Direction in Surif .....52

Figure (35): Topography .....53

Figure (36): proposed plot .....53

Figure (37): Clarify the parts of the project .....54

Figure (38): Topographic .....54

Figure (39): The proposed organization structure of the center.....56

## List Of Table :

Table (1):Distribution of the number and percentage of primary health care centers by service-providing sector, Palestine 2020.....	23
Table (2): Distribution of the number of government primary health care centers according to the level of service provided, Palestine 2020.....	24
Table (3): Distribution of the number of government primary health care centers by governorate, Palestine 2020.....	24
Table (4): General medicine references in primary health care centers in the Ministry of Health, West Bank, Palestine 2020.....	24
Table (5): Distribution of visits to specialist clinics in primary health care, Ministry of Health, West Bank, Palestine 2020.....	58
Table (6): Criteria for determining needs for primary health care centers .....	57
Table (1): Table of areas for the divisions of the centre.....	57
Table (2): Table of areas for the reception, registration and entry department.....	57
Table (3): Table of areas for emergency department.....	58
Table (4): Table of areas for radiology and laboratories.....	58
Table (5): Table of areas for Maternity ward.....	58
Table (6): Table of areas for outpatient departments.....	59
Table (7): Table of areas for the Nursing Department.....	59
Table (8): Table of areas for the pharmacy department.....	59
Table (9): Table of areas for general stores.....	59
Table (10): Table of areas for central kitchen.....	60
Table (11): Table of areas for the central sterilization department.....	60
Table (12): Table of areas for the Administration Department .....	60
Table (13): Table of areas for the General Services Department.....	61
Table (14): Table of areas for the divisions of the centre.....	61
Table (15): Table of areas for the reception, registration and entry department.....	61
Table (16): Table of areas for the clinics department.....	62
Table (17): Table of areas for the General Services Section.....	62

## **Chapter "1"**

### **Introduction to Research**

- **Chapter One: Introduction to Research:**

**1.1 Preface.**

**1.2 Research Problem.**

**1.3 Research Aims.**

**1.4 Research Methodology.**

**1.5 Search Obstacles.**

**1.6 Search Structure.**

## 1.1 Preface:

Health is one of the blessings that God has bestowed upon us, and it is said that health is the wealth of a sane person because it is the most precious thing he possesses which enables a person to live a normal life with .happiness and comfort. Confirmed by all international conventions and considered a basic human right

Since there is great importance for health services, which are among the most important services that people need, it is necessary to develop full strategic plans in a way that is compatible with societal needs, especially health, population increase, and urban expansion in the city, and this means finding a kind of population and service balance, and this, in turn, leads to Improving the performance of the individual in his society by .increasing the material and intellectual production of this society

After addressing the issue of health in Palestine, specifically the central and northern Hebron region, it is clear that these areas need health services in order to improve the dire health reality in which they are living, and .work to promote them in health

In view of the desire of the former Director of Health of the City of Hebron, Dr. Khaled Sidr, and in cooperation with the Director of North Hebron Health, Dr. Muhammad Qawqas, a development project has been proposed, represented by the work of a series of medical centers at different levels of development in several areas of central and northern Hebron, to provide the health needs of the community there and the advancement of the health sector in those areas.

## 1.2 Research Problem:

The lack of full strategic plans at the city level and new areas that are compatible with the health needs of the communities, and is considered one of the most important problems faced by the Palestinian people in all the governorates of the country, and among these governorates is the Hebron governorate, especially in the center and north of Hebron, **which led to:**

- 1) Poor distribution of services to the health sector.
- 2) The inadequacy of the population's health centers on the one hand, and their weak ability to meet the population's growing needs for health services on the other hand, especially in small and remote communities.

The great pressure falls on health centers and hospitals in the city of Hebron, due to many sick cases coming to them.

Accordingly, the North Hebron and Hebron Health Directorates believe that there are several areas that need to provide health centers at different levels due to the poor health services provided in these areas, and this was approved after a visit to the former health official of the city of Hebron, Dr. Khaled Sidr, and his discussion about the areas most in need of health services In Hebron Governorate, he referred us to the areas north and central Hebron, and under his guidance, we visited the North Hebron health official, Dr. Muhammad Qawqas, and Hebron health official, Dr. Rami Al-Qawasmeh, and they discussed the extent to which each of the northern and central Hebron areas needs health services and the problems in them, and based on that A statistic was made about the number of governmental health centers for each area located in the north and central Hebron area, and an analysis was made of what areas most needed to provide additional health services in them. Dr. Muhammad Qawqas and Dr. Khaled Sidr accepted in cooperation with Dr. Rami al-Qawasmeh, which is (Surif District, Nuba District, Abu Katilah District, Dahia District) to provide health centers in it due to the poor health services provided there.

### 1.3 Research Aims:

The main target of the project lies in residential apartments, different publications in different regions:

1. Providing health centers of different levels in several areas in the center and north of Hebron to cover their need for health services, including:
  - ✓ Nuba area, which is located north of Hebron, where a fourth-level health center will be provided.
  - ✓ Surif area, which is located in the north of Hebron, where a third-level health center will be provided.
  - ✓ Al-Baladiyah Suburb and Abu Katila area, which are located in the center of the city of Hebron, and in which a second-level health center will be provided.
2. Contribute to the advancement of the health sector, and increase the provision of health and medical services to the population of the region and its surroundings.
3. Quicker access to the center in order to receive treatment, and to avoid suffocating traffic in case of going to hospitals in the city center .

### 1.4 Research Methodology:

To achieve results that meet the goal, we have followed a scientific methodology to reach the facts represented by following the analytical approach, **which is represented in three main axes:**

1. Theoretical framework: which depends on the work of specialized scientific studies through books, magazines, and specialized articles in this field, and working on studying and analyzing similar case studies for the project, whether local or external and in addition to studying the design and planning criteria of the project.
2. Information collection framework: It includes conducting field studies, conducting interviews with specialists, identifying the reality of the distribution and design of health centers in the north and center of Hebron city and their suitability for population concentration, identifying the problems that these services suffer from and working to reduce them by providing a highly efficient center that provides Top notch services.

\* Interviews were conducted with the North Hebron health official, Dr. Muhammad Qawqas, the former Hebron health official, Dr. Khaled Sidr, and Dr. Rami Al-Qawasmeh, in order to identify the areas in which health centers need to be provided, and how to design health centers and their types, in addition to making a visit to the municipality Each of Nuba, Surif, and Hebron, and a meeting with the chief engineer in each municipality in order to propose lands in the areas for the project.

3. Analytical framework: The current situation of health services was evaluated, the needs and problems were identified, and a proposal was developed to design advanced health centres in the northern Hebron areas, under the guidance of the North Hebron Health Officer, Dr. Muhammad

Qawqas, and the former head of Hebron Health, Dr. Khaled Sidr. This was after reviewing the Statistical and spatial analysis of health service centers.

### **1.5 Search Obstacles:**

There were several obstacles during the conduct of this research, **including:**

1. Lack of sufficient references dealing specifically with health centers.
2. The difficulty of obtaining study cases, due to the reservation of some health centers on the plans.
3. Non-cooperation by municipalities and government institutions in giving us information.

### **1.6 Search Structure:**

his research deals with the following:

- **Chapter One:**

It deals with talking about the nature of the project, defining what the research problems are, and the desired goals of the project, in addition to talking about the approach used in preparing this research.

- **Chapter Two:**

Theoretical studies of health and health centers in general, and clarification of some concepts and terminology such as the concept of public health, theoretical background on health services, and the health reality in Palestine in general and in the city of Hebron and surrounding villages.

- **Chapter Three:**

Study planning and design standards for health centers.

- **Chapter Four:**

Two case studies, the first is a global case and the second is a local case, and both are classified by images, landscapes, sectors, and interfaces for analysis.

- **Chapter Five:**

Studying the site proposed by the Nuba Municipality, analyzing it at the geographical, climatic, and topographical levels, and ensuring its suitability for construction, based on architectural and planning standards and specifications.

- **Chapter Six:**

A program of the proposed spaces for the project and their spaces, and the functional relationships between the different parts of the project.

## **Chapter "2"**

### **Theoretical Studies**

#### **▪ Chapter Tow: Theoretical Studies:**

**2.1 Introduction.**

**2.2 The Public Health.**

**2.2.1 The Concept of Public Health.**

**2.2.2 The Role of Public Health.**

**2.2.3 Public Health Goals.**

**2.3 Islam and Health.**

**2.4 Theoretical studies for health services.**

**2.4.1 Types of Health Care Services.**

**2.4.2 Therapeutic Health Services Building.**

**2.4.3 reality of Health in the Palestinian Territories.**

**2.4.4 Palestinian health system**

**2.4.4.1 Primary health care in Palestine .**

**2.5 The Reality of Health in the Palestinian Territories.**

**2.6 Health in Hebron.**

**2.6.1 The Health Situation in the city of Hebron.**

**2.6.2 The Health Situation in the city of Hebron.**

**2.7 Conclusion.**

## **2.1 Introduction:**

The process of designing health centers depends mainly on the social, economic, and political situation, etc., as well as on the extent of society's need for health centers and the extent to which it is satisfied with them. In this research, it will be clarified what public health is, its objectives, its importance, and its relationship to the Islamic religion.

## **2.2 The Public Health**

### **2.2.1 The Concept of Public Health:**

The World Health Organization defines public health as an art and science concerned with preventing community members from diseases and limiting their spread. In order to maintain them in good health to live longer. Also, to promote health through community efforts, and activities that seek to strengthen public health capabilities and services to the next:

1. Provide safe health conditions that enable people to maintain their health and prevent its deterioration.
2. Strive to reduce the spread of diseases and provide their treatment, in addition to educating individuals about health to control infectious diseases.
3. Provide personal services to individuals, such as vaccinations, behavioral advice, or health advice.
4. Provide health, mental and psychological services to all members of society, and take care of health and well-being aspects.

In addition, the World Health Organization also defined health as “that state in which a person lives, having physical, psychological, and social health, and not just having a body free of diseases.

Thus, health has three aspects:

1. Physical health is the anatomical integrity and physiological functioning of the body, and its ability to perform all routine tasks.
2. Mental health is an individual's ability to think and learn.
3. Social health is a person's ability to communicate in a proper manner and build social relationships with others.

### **2.2.2 The Role of Public Health:**

Public health plays an important role in protecting, promoting, and maintaining the health of entire communities, whether they are large or small, and many public health duties are related to health issues that individuals face in their daily lives, such as maintaining drinking water, and

controlling food items used, whether local manufactured items or imported ones. Public health also plays a major role in health fields such as preparing for emergencies, disasters, and others, and thus it focuses on trying to prevent diseases more than trying to treat them.

### **2.2.3 Public Health Goals:**

The goal of public health is to deal with diseases and limit their spread, injuries, disasters, and other health conditions by monitoring and following up cases and improving and supporting healthy behaviors, as well as the environment and society alike. We note that there are some diseases that we have been able to prevent in very simple non-curative ways, for example, research has shown that washing hands with soap and water leads to have a protection from diseases. In other cases, disease can be prevented or pathogens reduced and controlled, for example, monitoring food and water sources and preserving them from pollution. Public health communication programs and vaccination programs are examples of common public health standards.

### **2.3 Islam and Health:**

Health is viewed from the Islamic perspective as a human necessity and a basic need for every person. Therefore, Islam takes care of health and considers it part of taking care of the physical and moral strength of Muslims. Islam is keen on the safety of the bodies in which the veins of health and wellness flow, because the effects of a healthy body are reflected on the individual and society, and that is why Islam fought diseases, called for medication, and created various methods for the prevention of diseases. And setting the rules of quarantine when the disease appears in a region, and Islam considered that hygiene, health, and beauty are the foundations for every Muslim, and with them the nation of Islam rises and develops.

### **2.4 Theoretical studies for Health Services:**

#### **2.4.1 Types of Health Care Services:**

Health services are defined as a set of health programs and activities provided by the state, whether in its sector or within the private sector, that aim to protect society from health problems and diseases and to provide treatment for these problems if they occur. Health services have been defined by Darsky and Metzner as a planned intervention by the community. It aims to combat diseases, compensate for disease, and early death or prevent them.

#### **Health services include:**

- 1. Preventive services:** These include disease control, limiting their spread, monitoring food sources, providing clean water, providing healthy housing, properly disposing of waste, purifying the air from smoke, pest control, and finding solutions to noise.

2. Therapeutic services: it includes treatment services in its various stages in outpatient clinics, public and private hospitals, specialized hospitals, home care, professional rehabilitation, and doctors' clinics.

### **2.4.2 Therapeutic Health Services Building:**

1. **Hospitals:** They have several classifications, including governmental, private, or private charitable hospitals. These hospitals contain specialists, treatment materials, and functional and service staff.

2. **Medical centers:** These are buildings that include several medical services, including specialized clinics, radiology laboratories, and a pharmacy, and the presence of x-rays in them is not mandatory.

3. **Ambulance and emergency services:** These services are available at governmental, private, and private hospitals and charities such as the Palestinian Red Crescent Society, through which the lives of the injured are saved and their arrival from the place of injury to the nearest health center or hospital, and it also works to transport the injured and sick between health centers and hospitals.

4. **Maternity and Child Care Centers:** Where this service is provided in the governmental, or private sectors, it includes following up on the growth and development of children up to the age of 3 years and caring for pregnant women during pregnancy and beyond.

5. **Rehabilitation and care centers:** These centers include rehabilitating the handicapped, the blind, the deaf and dumb, the elderly, and the infirm.

6. **Physiotherapy centers:** These centers provide the necessary equipment for treatment and are private centers, but there are some in private and government hospitals and these centers provide movement therapy for people and those who have disabilities or diseases.

7. **Eye examination centers:** They are mostly affiliated with the private sector and provide diagnostic and then treatment services for the eyes

8. **Laboratory Medicine Center:** These centers are concerned with laboratory examinations.

9. Radiology centers: These services are in different hospitals and health centers, as well as there are special centers concerned with radiological imaging.

10. **Pharmacies:** They are the sectors through which citizens are provided with therapeutic drugs, and these pharmacies are affiliated with the private sector.

### **2.4.3 reality of Health in the Palestinian Territories:**

One of the most important signs of advancement for nations is the development in the health and educational sectors. The Palestinian health sector is one of the vital and active sectors despite the emergency, compelling and crisis conditions it is going through, **the most important of which are:**

1. Israeli measures and practices that impede the work of medical staff and impede citizens' access to health services centers.
2. Poverty of resources and a continuous shortage of medicines, treatments, and health centers in cities, despite the huge budgets spent on this sector, whether governmental or private, compared to other sectors.
3. The low level of the quality of the service provided resulting from the lack of recruitment of competencies and lack of expertise: At the level of the health service in general, and the provision of advisory service, from the citizen's perspective, the level of service is at its lowest.
4. Low level of job satisfaction: Job satisfaction, the individual's development in his job, and his attainment of promotion are related to the level of performance of workers in the health care sector, which was proven by the numerous studies published in this context, which showed a strong direct relationship between the level of job satisfaction and the quality of health services.
5. Corruption: Corruption is manifested in a set of behaviors of office holders and inequality among citizens in the opportunities to benefit from these health services.

### **2.4.4 Palestinian health system**

The Palestinian health system consists of four main sectors: the governmental health sector (the Palestinian Ministry of Health and Military Medical Services), the United Nations Relief and Works Agency for Palestine Refugees, NGOs, and the private sector.

These different sectors are involved in providing health care services to citizens at all levels: primary health care, secondary and tertiary health care. The Palestinian Ministry of Health has paid great attention to the health of Palestinians and to providing comprehensive health services of high quality to all citizens.

The covid-19 pandemic has affected Resolution 19 in 2020, explicitly about providing various health services to citizens, due to emergency and closure procedures, calling on citizens to adhere to homes as much as possible, and concentrating health efforts and activities to confront the

epidemic. In addition to the measures taken by the Ministry of Health within its facilities to reduce mixing and overcrowding, This was reflected in a number of health indicators in Fills.

#### 2.4.4.1 Primary health care in Palestine :

- It deals with health in its comprehensive physical, psychological and social aspects, and its essence is to provide care as a whole, and it guarantees primary health care for the citizen throughout his life, and is not limited to people's access to comprehensive health care, ranging from counseling and prevention to treatment.
- Primary health care centers in Palestine by service-providing sector Table (3) (Distribution of the number and percentage of primary health care centers by service-providing sector, Palestine 2020.

المجموع	الخدمات الطبية العسكرية	المنظمات غير الحكومية	وكالة غوث وتشغيل اللاجئين	وزارة الصحة	فلسطين
749	17	192	65	475	العدد
%100	%2.3	%25.6	%8.7	%63.4	النسبة المئوية

**Table (1) :Distribution of the number and percentage of primary health care centers by service-providing sector, Palestine 2020.**

The number of primary health care centers affiliated to the Ministry of Health in Palestine increased from 203 at the end of 1994 to 475 in the year 202 with an increase of 134 percent. The Ministry of Health classifies primary health care centers into four levels in addition to mobile clinics, and the levels are:

**First level:** Provides:

Preventive services: maternal and child health care, immunization (vaccination), and health education ,Therapeutic services .

**Second Level:** Provides:

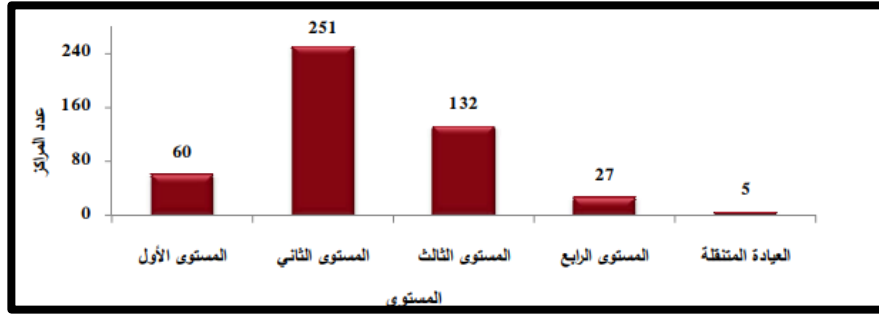
Preventive services: maternal and child health care, immunization, and health education.

**Third Level:** Provides:

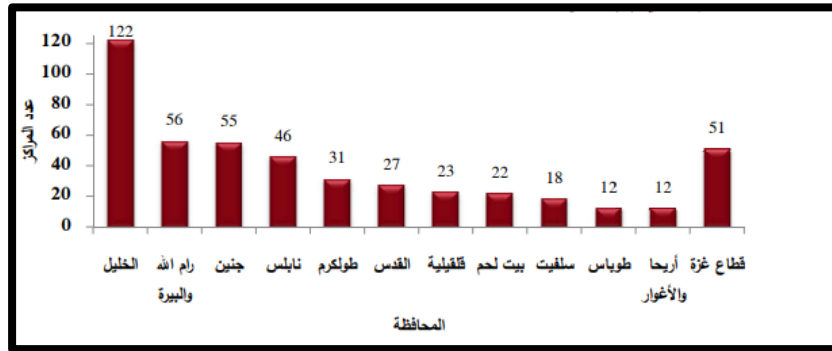
Preventive services: maternal and child health care, immunization, family planning, and health education, Therapeutic services: general medicine, specialized medical laboratory, dentistry, specialty clinics.

**Fourth Level:** Provides:

Preventive services: maternal and child health care, immunization, family planning, and health education, Therapeutic services: general medicine, dentistry, specialty clinics, a specialized medical laboratory, and radiology.



**Table (2) : Distribution of the number of government primary health care centers according to the level of service provided, Palestine 2020.**



**Table (3) : Distribution of the number of government primary health care centers by governorate, Palestine 2020**

The primary health care centers in the Ministry of Health, in addition to general medicine services, provide a range of health services. 282 of these centers provide family planning services in the West Bank, and 234 medical and service centers in the West Bank. In 200 laboratories, the dangerous pregnancy service is provided in the West Bank in 78 centers, Beit Primary health care services In the year 2020, the number of registered doctor visits in primary health care centers reached 524,012,2 visits Reviewers of general medicine services in primary health care centers in the Ministry of Health, West Bank, Palestine 2020.

معدل عدد المراجعين لكل زيارة	عدد زيارات الكادر الطبي للعيادات	عدد المراجعين	الكادر الطبي
36.9	44,610	1,643,950	طبيب
32.3	50,890	1,643,578	تمريض

**Table (4) : General medicine references in primary health care centers in the Ministry of Health, West Bank, Palestine 2020**

Visitors to specialized clinics in primary health care centers in the Ministry of Health in the year 2020 , Primary health care provides a variety of specialized medical services through 234 clinics. During the year 2020, it provided specialized services through clinics of dermatology, diabetes, children, mental health, chest, gynecology, orthopedics, ENT, communicable diseases, non-communicable diseases, glands.

معدل عدد المراجعين للطبيب العام لكل زيارة	عدد زيارات الكادر الطبي للعيادات	عدد المراجعين	الكادر الطبي
24.8	14,888	368,574	طبيب
23.1	14,153	326,334	تمريض

Table (5) : Distribution of visits to specialist clinics in primary health care, Ministry of Health, West Bank, .  
Palestine 2020

ملاحظات	الى	من	البيان
على مستوى مجاورة سكنية او حي سكني	9000	1500	عدد السكان المخدومين
	1000	500	نطاق الخدمة بالمتر
	0.15	0.12	نصيب الفرد من المساحة الكلية(م <sup>2</sup> )
		20 دقيقة	معيار الوصول للمبنى

Table (6) : Criteria for determining needs for primary health care centers

## 2.6 Health of north Hebron:

### 2.6.1 The health situation in the north of Hebron city:

Hebron is one of the largest Palestinian governorates in terms of area and population. The health sector in Hebron governorate faces many challenges and suffers from a lack of funding, insufficient available medical staff, a small number of hospitals and health centers, and a lack of modern medical supplies and equipment, especially in the north of Hebron.

A statistic was carried out on the number of health centers affiliated with the government sector in the North Hebron area, which includes the following area.

	<i>Region</i>	<i>population</i>	<i>Type</i>	<i>Number of public sector health centers</i>	<i>Region</i>	<i>Area (Km2)</i>
<b>1</b>	<b>Halhul</b>	<b>29730</b>	level 2 level 2 level 1	<b>3</b>	Aldhurwa Center Al-Hawar care center Khirbet Isa clinic	<b>37.335</b>
<b>2</b>	<b>Sair</b>	<b>22791</b>	level 2 level 3 level 1	<b>3</b>	sair clinic Beit Ainun clinic Kwaziba Center	<b>11.7</b>
<b>3</b>	<b>Bani Naim</b>	<b>27078</b>	level 2 level 1	<b>2</b>	Bani Naim clinic Wadi Al-Reem Center	<b>157</b>
<b>4</b>	<b>alshuyukh</b>	<b>13255</b>	level 2 level 2 level 2 level 1	<b>4</b>	Al-Shuyoukh Center Qafan Khamis clinic Al-Dawwarah Center Aleadaysa	<b>12.100</b>
<b>5</b>	<b>Beit Aula</b>	<b>15988</b>	level 2 level 1	<b>2</b>	Beit Ula Clinic Am Alas Clinic	<b>34</b>
<b>6</b>	<b>Nuba</b>	<b>6193</b>	level 2	<b>1</b>	Nuba Clinic	<b>15.460</b>
<b>7</b>	<b>Kharas</b>	<b>10051</b>	level 2 level 1	<b>2</b>	Kharas Dispenser Hatta Clinic	<b>20</b>
<b>8</b>	<b>Surif</b>	<b>19013</b>	level 2	<b>1</b>	Muscat Clinic	<b>15.03</b>
<b>9</b>	<b>Beit Ummar</b>	<b>18672</b>	level 2	<b>1</b>	Beit Ummar Clinic	<b>30.129</b>
<b>10</b>	<b>Shuyoukh al-Arrub</b>	<b>2015</b>	level 2	<b>1</b>	Shuyoukh al-Arrub center	<b>-</b>
<b>11</b>	<b>Middle Hebron:</b>					
<b>a.</b>	<b>Basin 1</b>	<b>40000</b>	-	<b>0</b>	-	<b>836.86</b>
<b>b.</b>	<b>Basin 2</b>	<b>1700</b>	-	<b>0</b>	-	<b>1800</b>

<b>c.</b>	<b>Basin 5</b>	<b>16480</b>	<b>level 3</b>	<b>1</b>	<b>Al-Rama Center</b>	<b>2564.33</b>
<b>d.</b>	<b>Basin 6</b>	<b>16933</b>	<b>-</b>	<b>0</b>	<b>-</b>	<b>1945.91</b>
<b>e.</b>	<b>Basin 7</b>	<b>22743</b>	<b>level 2</b>	<b>1</b>	<b>Abu Ayyash Clinic</b>	<b>1617.48</b>
<b>f.</b>	<b>Basin 8</b>	<b>19305</b>	<b>level</b>	<b>0</b>	<b>Ain Sarah Clinic</b>	<b>1651.68</b>
<b>g.</b>	<b>Basin 9</b>	<b>6245</b>	<b>-</b>	<b>0</b>	<b>-</b>	<b>1326.7</b>
<b>h.</b>	<b>Basin 10</b>	<b>5433</b>	<b>level 2</b>	<b>1</b>	<b>Oqba Taffouh Clinic</b>	<b>2457.77</b>
<b>i.</b>	<b>Basin 11</b>	<b>15381</b>	<b>level 2</b>	<b>1</b>	<b>Al- Mashareqa Clinic</b>	<b>1180</b>
<b>j.</b>	<b>Basin 12</b>	<b>20909</b>	<b>level 3 level 2 level 3</b>	<b>3</b>	<b>Specialty Clinics Al- Haram Clinic Karantina Clinic</b>	<b>2796.55</b>
<b>k.</b>	<b>Basin 13</b>	<b>17549</b>	<b>level 3 level 2</b>	<b>2</b>	<b>New Al-Salam Clinic Al Manshar Clinic</b>	<b>2029.18</b>
<b>l.</b>	<b>Basin 14</b>	<b>6493</b>	<b>-</b>	<b>0</b>	<b>-</b>	<b>1568.18</b>
<b>m.</b>	<b>Basin 15</b>	<b>8118</b>	<b>-</b>	<b>0</b>	<b>-</b>	<b>1616.22</b>
<b>n.</b>	<b>Beit Kahil</b>	<b>9767</b>	<b>level 2</b>	<b>1</b>	<b>Beit Kahil Clinic</b>	<b>5.8</b>
<b>o.</b>	<b>Tarqumia</b>	<b>21239</b>	<b>-</b>	<b>0</b>	<b>-</b>	<b>21.020</b>
<b>p.</b>	<b>Taffouh</b>	<b>17377</b>	<b>level 2</b>	<b>1</b>	<b>Taffouh Clinic</b>	<b>20.300</b>

## 2.7 Conclusion:

After reviewing the studies and statistics of the health situation in Palestine and getting to know more about it, it found that there is an urgent need to advance and develop the health situation by providing health facilities that serve different levels of health care to meet the society's growing needs of different specialties. In addition to increasing the number of beds in areas of future disability in The North and Central Hebron region, especially the remote areas far from the city center, and therefore four regions were chosen, namely Nuba and Surif in the north of Hebron, Abu Katila and the Al-Baladiya Suburb in Hebron due to the poor health services in them. Accordingly, a decision was issued to provide health centers at different levels in these areas Regions based on the extent of each region's needs.

## **Chapter "3"**

### **Planning and Design Standards**

#### **■ Chapter Three: Planning and Design Standards:**

**3.1 Preface.**

**3.2 Planning standards for health centers.**

**3.3 Stages of the planning process**

**3.3.1 Determine the location of the service for the health center.**

**3.3.2 Determining the orientation of the health center building.**

**3.3.3 Architectural principles and general requirements.**

**3.3.4 Areas of planning in health centers.**

**3.3.5 Access to the health center.**

**3.3.6 Scope of service of health centers.**

**3.4 Design criteria for health centers.**

**3.4.1 Principles and considerations to be taken into account when starting to design a health center.**

**3.4.2 The basic components and elements of health centers.**

**3.4.3 Functional relationships between health center departments.**

**3.5 Interior design standards for colors in health centers.**

**3.6 Conclusion.**

### **3.1 Preface:**

The great development that is taking place in the methods of diagnosis and treatment, had to be accompanied by a similar development in the planning and design of health centers. Knowing that there is no fixed trend for the design of health centers, but there are a set of planning and design standards that must be applied to all health centers to design, and in this chapter, we will talk about these standers.

### **3.2 Planning standards for health centers:**

The experts of the World Health Organization define planning as the management that aims to increase the effectiveness of health programs and services that provide the greatest possible number of people with the maximum health benefits at the lowest costs, and the systematic development of all health-related services to promote health, restore health, and prevent disease.

### **3.3 Stages of the planning process:**

#### **3.3.1 Determine the location of the service for the health center:**

What is meant by it is the area in which a population is expected to be covered by the health center with its services. International standards for health services sites have adopted the following conditions:

1. The site should be connected to the main road networks and public transportation stations that operate within the scope of the health center, and the site should be close to the basic public service networks.
2. The site designated for the health facility should be according to the approved plan, and the approval of the competent authorities is required.
3. Availability of relative calm in the project land and distance from the noise and environmental pollution and the site must be surrounded by gardens.
4. The center should be 40 m away from its affiliated road, and 80 m from the main road.
5. Considering the possibility of future expansion.

#### **3.3.2 Determining the orientation of the health center building**

The orientation of the health center building is controlled by both the sun and the wind, so that the building is directed towards the prevailing winds with a good effect, and the building is parallel to the unwanted winds. Northeast to the northwest towards the north.

### **3.3.3 Architectural principles and general requirements:**

1. The health center can be constructed from a building or several separate buildings, depending on the architectural design.
2. Adherence to the approved building regulations in terms of heights, building ratios, and setbacks.
3. Considering the safety requirements and the requirements of people with special needs.
4. Corridors: The width of the internal corridors between clinics should not be less than 2.20 meters.
5. Use of appropriate thermal and acoustic insulation materials in the project.

Natural lighting: the patient's room and corridors should receive daylight and good ventilation.

### **3.3.4 Areas of planning in health centers:**

1. Studying the health needs of the community members surrounding the health center.
2. Setting specifications for the buildings and equipment to be available and setting standards to measure the performance of services in the health center.
3. Determining the center's needs of the necessary manpower and setting the general budget for the center.
4. Coordination between the various operational units in the health center to ensure good Implementation of the center's operational plan.

### **3.3.5 Access to the health center:**

1. The health center must have a single main entrance for cars from the main street, and the side streets should not be opened in one direction, and the entry area should be unfenced. with car parking available for building users.
2. Ambulances must have an entrance that directly connects to the emergency reception department.
3. It is preferable to have the main pedestrian entrance and an information center attached to it.

### **3.3.6 Scope of service of health centers:**

In its distribution of health service centers, the Ministry of Health relies on the following:

1. The demographic dimension, as the number of residents in the assembly, governs the service and its level.
2. The geographical distance of the region from the government health centers, and the community's relationship with other neighboring communities.
3. No duplication of service.
4. The security situation, the possibility of people moving to and from all clinics in the governorate, is at least a second level.

**The Palestinian Ministry of Health works to provide services in health centers through four levels:**

1. level one.
2. Level tow.
3. Level three.
4. Level four.

### **3.3.7 Design criteria for health centers:**

With the great development in the methods of treatment and diagnosis, a similar development was necessary for the planning, design, and management of health service centers, and there are many principles and architectural methods that must be followed and applied to all health centers regardless of their design direction.

#### **3.3.7.1 Principles and considerations to be considered:**

Principles and considerations to be considered when starting to design a health center:

1. Environmental dimension.
2. Extensibility.
3. Flexibility.
4. The human dimension.

### **3.3.7.2 The basic components and elements of health centers:**

Health centers are multi-element buildings with different functions, and although the level of complexity in these functions is relatively less than those in hospitals, it is necessary to divide the elements of health centers into main sections, under each of which other smaller elements fall.

#### **The health centers are divided into five sections:**

- 1. Diagnostic-Therapeutic Department:** It includes outpatient clinics, laboratories, radiology, physiotherapy, emergency reception, blood bank, surgery beds, doctors' offices, and social services.
- 2. Patient Care Department:** It includes convalescent beds, pediatric beds, self-care beds, intensive care beds, tall beds, and internal medicine beds.
- 3. Administrative Department:** It includes medical administration (medical records), medical education (and non-medical administration), personnel affairs, finance, public relations.
- 4. Department of accompanying and general ancillary services:** errands, procurement, distribution center, laundry, sterilization services, pharmacy, kitchen, room service, stores, electricity, incinerators, maintenance, and mechanical services.
- 5. Movement elements:** includes internal movement, external movement, and the movement of supply.

### **3.4.2.1 Movement relations in the health center:**

The study of movement in health centers quantitatively is studied according to the real need and is considered the first basis in the design of health centers, because the short movement helps to save time and effort for those dealing with the center, whether they are doctors, nurses, patients, or administrators.

The separation of dissimilar movement in the design of health centers is one of the most important matters to be studied, as the horizontal and vertical movement paths are designed to serve all the different functions in addition to:

- 1. Staff movement** (doctors, nurses, and technicians working in medical departments).
- 2. patient movement.**
- 3. The movement of supplies and services** (good files and reports, contaminated materials, medical materials, and tools).
- 4. visitor traffic.**

### **3.5 Interior design standards for colors in health centers:**

Hospital interior design is a necessary factor. The process of choosing colors and finishing materials for floors, walls, ceilings, mattresses, and lighting has a significant impact on the health of patients and the medical team. Therefore, it is determined according to criteria that consider the psychological and physiological impact of these materials on health center users.

Since colors play a pivotal role in health centers, the process of choosing colors must be carefully studied by specialists who are familiar with their properties and various effects on patients, which affects blood pressure, brain waves, and heart rate.

#### **Examples include:**

1. Brown color helps in the treatment of patients with epidemic jaundice. Likewise, other shades of color are used to avoid sensory deprivation in some patients.
2. The blue-green color in the operating room is the visual complement of human blood and tissue, and this helps the surgeon's eye focus only on the red color in the operating field.

And there are colors that it is not preferable to combine in one space, such as yellow, and green, because they are under fluorescent lighting that makes the patient pale, as well as the dullness, causing sadness and melancholy.

Thus, choosing colors is one of the important factors, and for us to choose the right color, we must be familiar with colors and their various characteristics and effects. **Colors are divided into:**

1. The principal colors.
2. Sub-colors.

### **3.6 Conclusion:**

Comprehensive health centers are considered one of the huge projects that require careful study and careful consideration as they include many functions, some of which are similar and some are different. Through which it is possible to survey the space required for the design.

## **Chapter "4"**

### **Case Studies**

- **Chapter Four: Case Studies:**

#### **4.1 HEALTHCARE CENTER, CIUDAD REAL, SPAIN.**

##### **4.1.1 The Goal of the Project.**

##### **4.1.2 Project Description.**

##### **4.1.3 Project Location.**

##### **4.1.4 Site Plan.**

##### **4.1.5 Components of the Project.**

##### **4.1.6 Section and Elevations.**

#### **4.2 AL RAMAH HEALTH CENTER**

##### **4.2.1 The Goal of the Project.**

##### **4.2.2 Project Location.**

##### **4.2.3 Site Plan.**

##### **4.2.4 Components of the Project.**

##### **4.2.5 Section and Elevations.**

#### **4.3 Conclusion.**

## 4.1 HEALTHCARE CENTER, CIUDAD REAL, SPAIN:



Figure (2,2 ) Health Care Center Ciudad Real

- **Architects:** Arquitectica– Roberto Moreno Klemming + Peru Cañada Omagogeascoa.
- **Project:** Health Center of Ciudad Real.
- **Location:** Ciudad Real, Spain.
- **Collaborators:** Laura Fernandez Muñoz, Isabel Dominguez Segura, Nuria Martin Alcaraz.
- **Quantity surveyor:** Oscar Bernedo Antonina's.
- **Client:** SESCAM.
- **Building Contractor:** PLODER-UICESA.
- **Photography:** Aitor Estevez Ola Izola.

### 4.1.1 The goal of the project:

The goal of the project is to create a natural healing environment characterized by simplicity and clarity with beautiful natural scenery that creates an atmosphere of calm and tranquility for patients to prove the effectiveness of merging nature with the building fabric in the field of rapid recovery of the patient and improving his psychological state

### 4.1.2 Project Description:

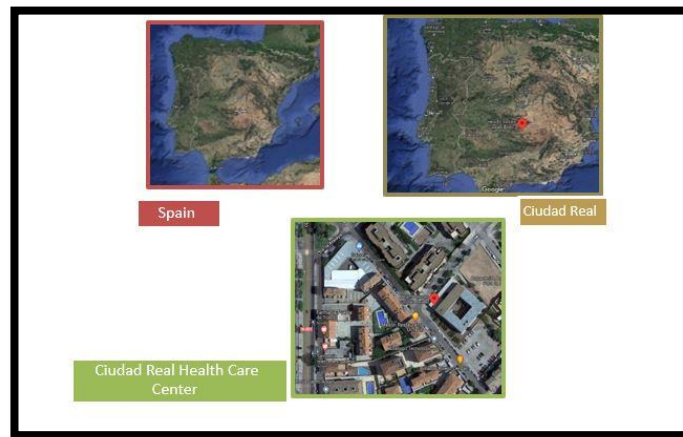
The building is conceived around a central courtyard. It serves as orientation and allow daylight to penetrate the hole interior, both the consulting rooms and the waiting areas. The main entrance is easy to find in the corner of two small streets.

The compactness of the building ensures a distinct appearance against the disintegrated environment of the housing blocks, and this reinforces the general character of the center that deliberately shows its dimensions and regularity. Try to counteract the initial compression of the resulting volume with **two additional advantages:**

**The first** is the addition of a one-story structure containing the entrance on the northwest side. It seems that this body is destined to deposit administrative dependencies in an advanced position.

**The second** process attempts to emphasize the horizontal appearance of the building, inserting on the upper floor of the complex an unfolded metal box containing the climate facilities and increasing the light profile of the building, along with a transparent polycarbonate closure for the waiting areas.

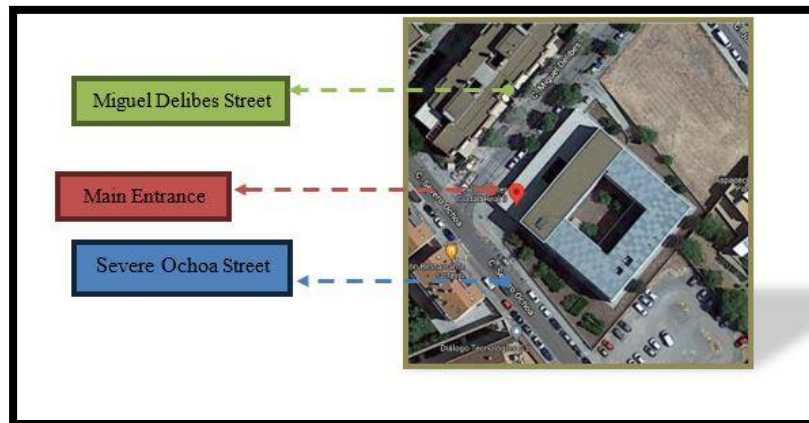
### 4.1.3 Project Location:



**Figure (3) : Project Location details**

### 4.1.4 Site Plan:

The main entrance to the center is in the corner of the streets Severe Ochoa and Miguel Delibes and is solved with a smooth ramp in the retreat space so that it is easily identifiable from the street .



**Figure (4) : Ciudad Real Health Care Center**

#### 4.1.5 Components of the Project:

1. Main Entrance
2. Central Courtyard
3. Small Courtyard
- 4, 5, 6, 7: Secondary Entrance
8. Ramp



Figure (6) : Master plan

Figure (5) : Central Courtyard

The building is conceived around a central courtyard. It serves as an orientation and allows daylight to penetrate the hole interior, both the consulting rooms and the waiting areas. The use of a building of regular and square footprint with a great central courtyard allows the possibility to control all the climate conditions. This “patio” acts as a climatic envelope and provides natural and uniform sunlight to all the areas of the inside.

#### Floors:

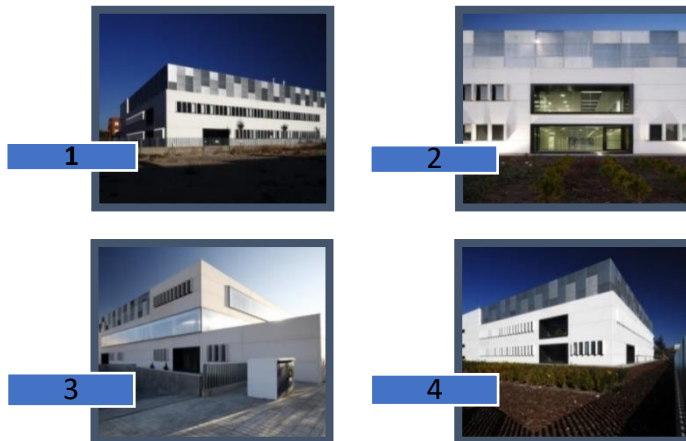
1. **Basement Floor:** Parking for 30 cars.
2. **Ground Floor:** Medical and treatment facilities, administrative area, reception, surgery area, rehabilitation area, physiotherapy area, and gym.
3. **First Floor:** Consultation rooms, waiting.
4. **Second Floor:** Orientation rooms.

#### 4.1.6 Section and Elevations:

A window type with prefabricated concrete shades has been used, to avoid the monotony of the horizontal windows.



**Figure (7) : section.**



**Figure (8): Clarify the parts of the project**

## 4.2 AL RAMAH HEALTH CENTER:

Al-Ramah Health Center was selected as a local case study, as it provides health services to citizens living in the area and contains a specialized laboratory that relieves pressure from Alia Governmental Hospital, it is considered one of the most modern centers in the country's governorates, as it possesses advanced medical equipment and equipment.



**Figure (9): RAMAH HEALTH CENTER**

- **Architects designing the project:** Engineers Musab Sheik and Amjad Abide.
- **Location:** Palestine - Hebron - Bir Haram Al-Ramah area.
- **Type of building:** a health center.
- **Building area:** 546.5 square meters.
- **Year of the project:** 2010.

#### 4.2.1 The goal of the project:

The desired objective of this project is to provide and develop health facilities and services in the city of Hebron, and to serve the citizens in the Ramah area and several population centers in the northern part of the city of Hebron, thus relieving the pressure on Alia Governmental Hospital.

#### 4.2.2 Project Location:

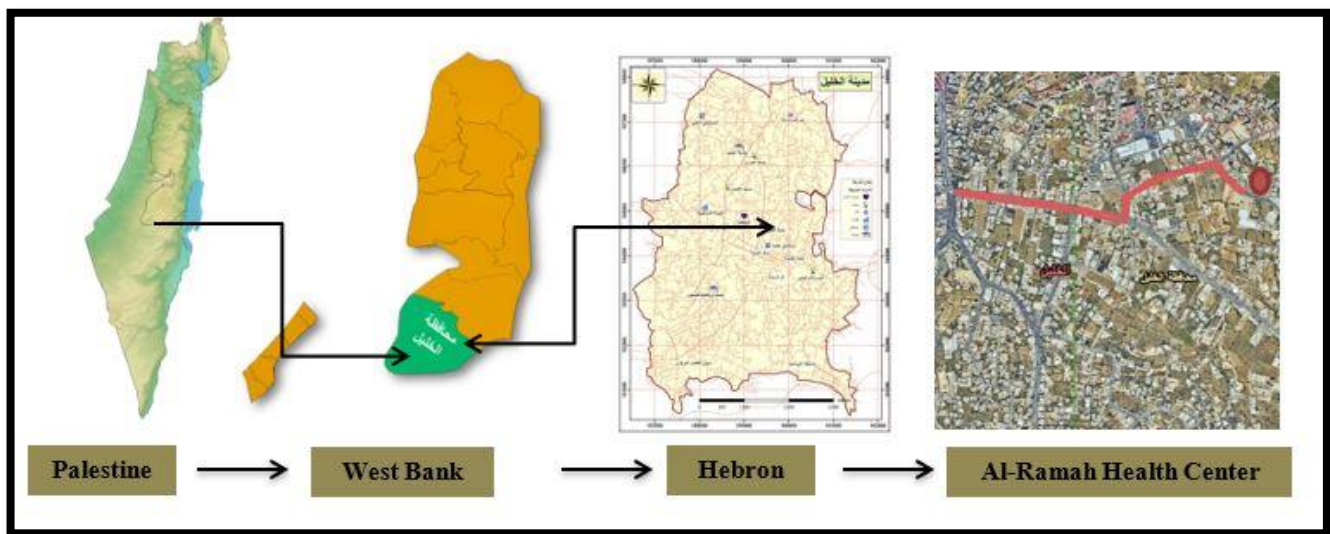


Figure (10) : Location Ramah Health

#### 4.2.3 Site Plan:

The project is in the city of Hebron, in the Bir Haram area of Al-Rama, on a plot of approximately 620 square meters, bordered by a main street to the southwest.

The hospital has two entrances, of which only the main entrance located in the southern direction is used, as for the western entrance is a service entrance.

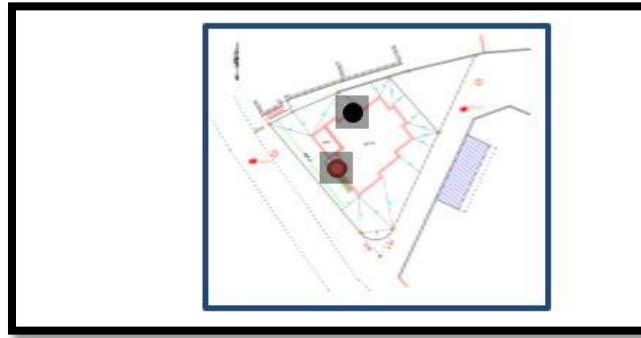


Figure (11) : Site plan Ramah Health

#### 4.2.4 Components of the Project:

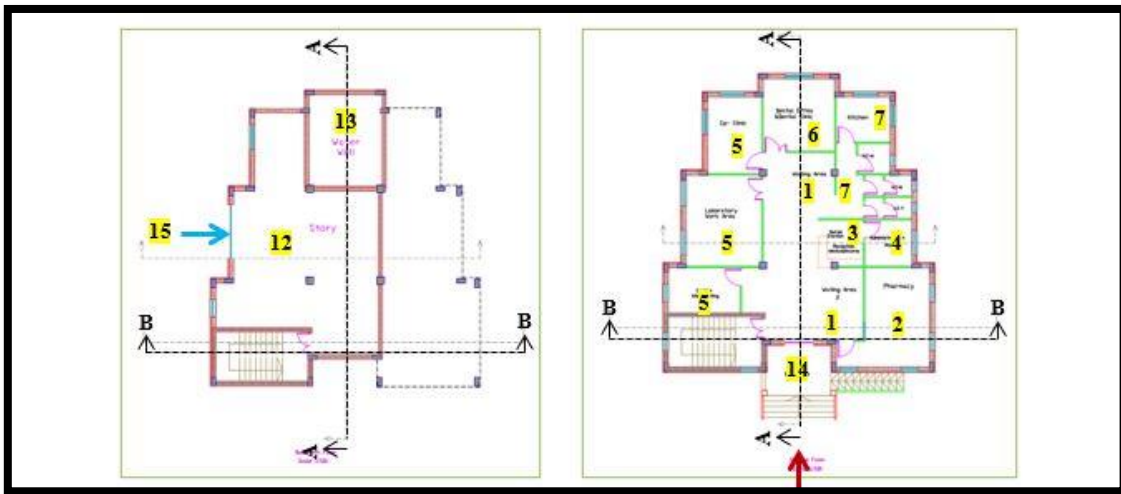


Figure (12): Basement Plan

Figure (13): Ground Plan

#### Contents:

1. Waiting
2. Pharmacies
3. Reception
4. Archives
5. laboratory
6. A doctor
7. Services
8. Nursing
9. Maternity and Vaccination
10. Women's clinic
11. Staff Services
12. Stored
13. Water tank
14. Main Entrance
15. Service Entrance
16. Dental Clinic

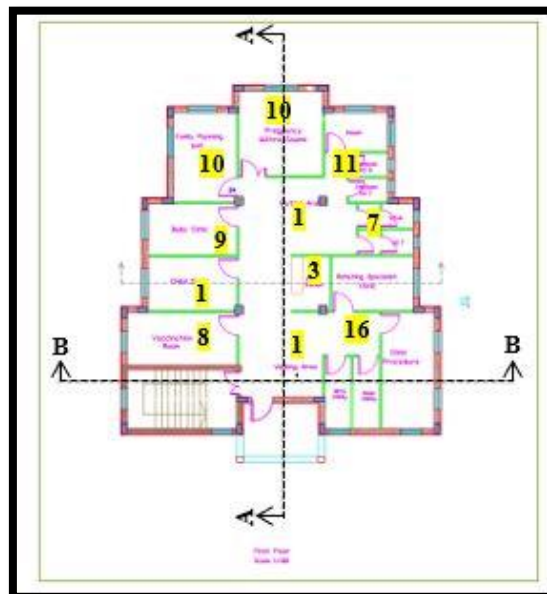


Figure (14): First plan

## Floors:

1. Basement Floor: It is accessed via a staircase from the ground floor, and also through the emergency entrance.
2. Ground Floor: A pharmacy, reception, archive, laboratory department, doctor's room and an area consisting of toilets for men and women and a kitchen.
3. First Floor: It is accessed via a staircase from the ground floor.

## 4.2.5 Sections and Elevations:

White stone material was used in the facades of the project, which is in line with the prevailing architectural character in the region, which reflects the impression of spaciousness and cleanliness, as well as the use of glass in the facades, which was limited to the presence of small openings that express the functional dimension.

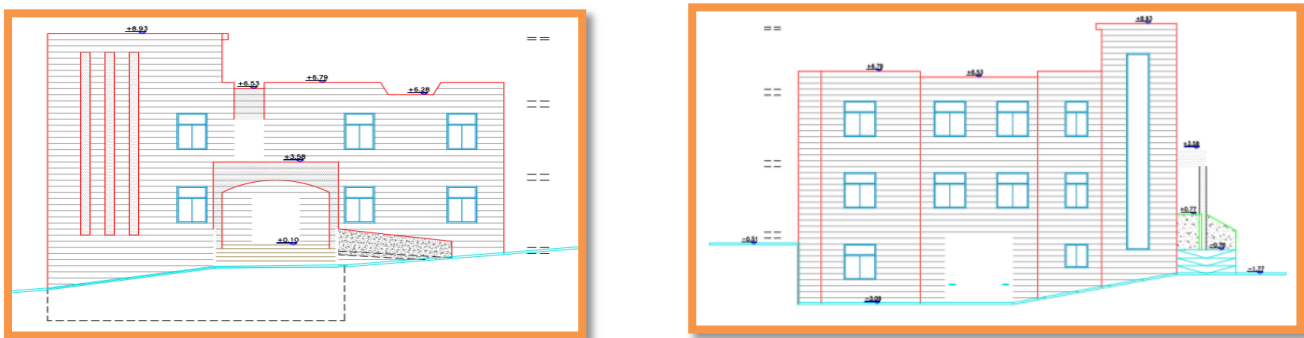


Figure (15): Elevations

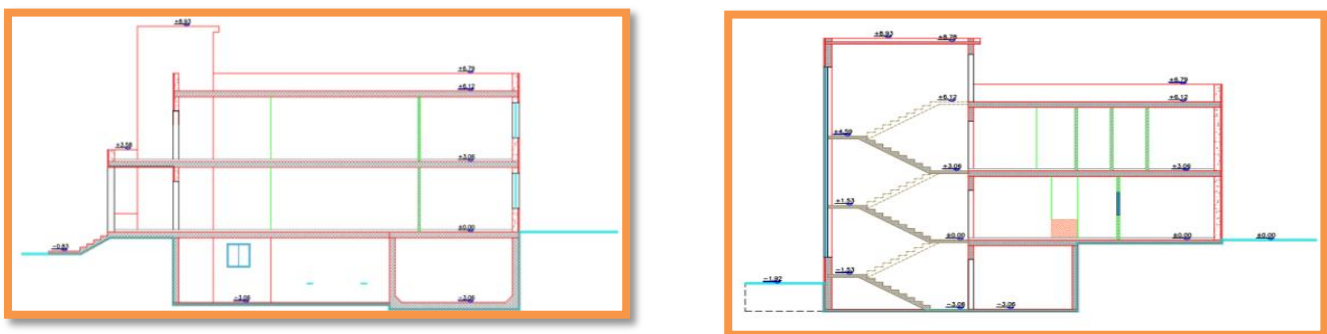


Figure (16): Section A-A

Section A-A



**Figure (17): Clarify the parts of the project**

### 4.3 Conclusion:

- ✓ In this chapter, the focus was on two study cases related to the proposed project, and these cases are "Ciudad Real Health Care Center" and "Al-Rama Health Center". After studying them, we can conclude several important things that should not be ignored in the design process for such projects:
- ✓ The importance of realizing the choice of site and studying it well to meet the functional content of the project.
- ✓ Finding the best functional solutions to serve the architectural space.
- ✓ Using the elements that contribute to enriching the project and help in changing human behavior.
- ✓ How to deal with the general site and create a bridge of cooperation between the building and its surroundings.

## **Chapter "5"**

### **Project location Studies and analyzes**

#### **▪ Chapter Five: Project Location Studies and analyzes:**

**5.1 Preface.**

**5.2 Site Analysis:**

**5.2.1 Palestine:**

**5.2.2 Climate of Palestine:**

**5.2.3 Hebron City:**

**5.2.3.1 Geographical location:**

**5.3 The location of the project:**

**5.3.1 Nuba:**

**5.3.4 Access to the proposed plot.**

**5.3.5 The forth level health center site to be designed.**

**5.3.6 Surif:**

**5.3.7 Access to the proposed plot.**

**5.3.8 The second level health center site to be designed.**

## 5.1 Preface:

Site selection and analysis is one of the most important stages of the design process, as the project site is one of the most prominent features of the project's success or failure. It must be chosen carefully, and this site achieves the goal for which it was chosen. The site analysis aims to form a general perception of its pros and cons, the possibilities that can be invested in the design, and the limitations that this site imposes on the design. This stage is characterized by the bifurcation and expansion of the obstacles that the designer will face and the extent of his ability to find a solution. Just as this stage is a means and not a goal, it is a means of moving to the stage of alternatives or design solutions.

## 5.2 Site Analysis:

### 5.2.1 Palestine:

Palestine is considered one of the most important and sacred Islamic countries throughout the ages. It is the beating heart of the Arab nation and the struggler on this land, which enjoys a great and great prestige that the world in general and the Arab countries have agreed upon. Its religious, touristic, cultural, and historical status is lacking in many major countries.

Palestine is located between longitudes 34.15 and 35.40 to the east of the Greenwich line, and between latitudes 29.30 and 33.15 To the north of the equator, in the west of the Asian continent, it is the confluence of the continents of Asia and Africa, and it forms the southwestern part of the geographical unity in the Levant and is bordered to the north by Syria and Lebanon, to the east by Jordan, to the west by the Mediterranean, and from South, Arab Republic of Egypt.

The area of Palestine is 27,500 square kilometers. Despite its small area, it was characterized by a strategic geographical location, as it is the meeting point of the important continents of Asia and Africa, and it sits on the eastern coast of the Mediterranean.



**Figure (18): Location of Palestine in the World**

## 5.2.2 Climate of Palestine:

Palestine is characterized by the diversity of its climatic regions, despite its small area. It belongs to the temperate Mediterranean region, and it has a tropical climate and a desert and semi-desert climate.

The climate of Palestine, in general, is moderate compared to the Middle East. It is hot, dry in summer and warm and rainy in winter. There is a clear difference in the climate of Palestine between its south and north, and between the coastal plains and the Jordan Valley. This is as a result of Palestine being located far from the areas of depression around the island of Cyprus. Thus, the minimum temperature in the winter season in the mountainous highlands reaches zero degrees Celsius and sometimes less than that, while in the summer the maximum temperature reaches 40 degrees Celsius, especially in the Jordan Valley.

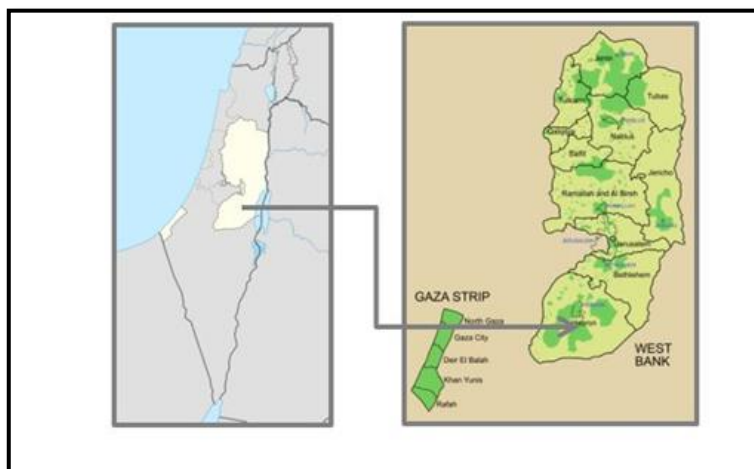
Rainfall rates range from 600-800 mm annually, and this percentage decreases as we head south to reach about 150 mm, and in the Jordan Valley, it reaches 200 mm annually.

## 5.2.3 Hebron City:

It is a Palestinian city and is considered the largest Palestinian city in terms of population and area, with a population of approximately 782 thousand in 2021 AD, and an area of 42 km<sup>2</sup>. In the center of it is Al-Ibrahim Mosque, which is believed to contain the shrines of the prophets: Abraham, Isaac, Jacob, and their wives.

### 5.2.3.1 Geographical location:

The city of Hebron is located at 31.5°N latitude and 35.095°E longitude, in central Palestine in the southern West Bank, on a plateau 940 meters above sea level. Between these two mountains, which is called Wadi al-Tuffah, the city is connected by the main road to the cities of Bethlehem and Jerusalem.



**Figure (19): Geographical location**

## 5.3 The location of the project:

### 5.3.1 Nuba:

#### Geographical location:

Nuba village is located to the northwest of the city of Hebron, at 19 km from it, at the foot of a mountain that is descending from east to west.

With its location, it represents part of the southern Palestine Mountain range, which is one of the most important topographies of Palestine, in general, and the topography of the governorate.

Today, Nuba village is located on the so-called Green Line that separates the lands occupied in 1948 from the lands occupied in 67. The village is surrounded by villages belonging to the city of Hebron as follows:

- ✓ From the north: it is bordered by the village of Kharas and the extension of its lands and Surif.
- ✓ From the south: it is bordered by the village of Beit Ula and the extension of its lands and Beit Kahli.
- ✓ From the west: it is bordered by the village of Umm Burj, Beit Natif, and Ajour.
- ✓ From the east: It is bordered by Halhul and the extension of its lands.
- ✓ **Area:**
- ✓ The area of the village reached 22,886 dunams before 1948, one-fifth of it for roads and valleys. The population surface of the village amounted to 33 acres. After the 1948 war, the Jews occupied 10,424 dunams of the village's lands or nearly half of its lands. It became east of the Green Line. The surface area of the village today is 3000 dunams.

#### The climate:

The prevailing climate prevails in Palestine in general, as its astronomical location makes it affected by the subtropical Mediterranean climate, which is characterized by being hot and dry in summer and mild and rainy in winter, and snowfalls in some winters on the eastern and central part of the village. It should be noted here that despite the small village, however, there are differences in temperatures and wind speed in the village, and this discrepancy in. In Nuba, the summers are long, hot, arid, and clear and the winters are cold and mostly clear. Over the course of the year, the temperature typically varies from 41°F to 88°F and is rarely below 35°F or above 93°F.

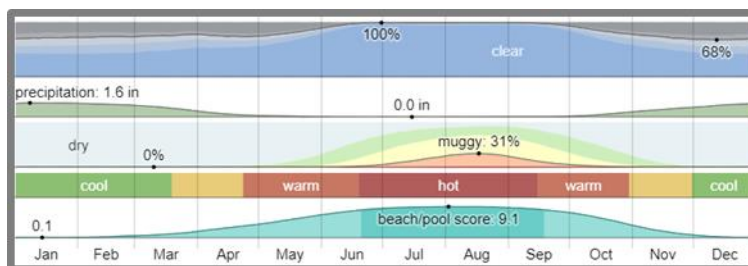


Figure (20): Climate in Nuba

## Average Temperature in Nuba:

The hot season lasts for 4.5 months, from May 24 to October 7, with an average daily high temperature above 82°F. The hottest month of the year in Nuba is August, with an average high of 87°F and low of 67°F.

The cool season lasts for 3.0 months, from December 7 to March 9, with an average daily high temperature below 63°F. The coldest month of the year in Nuba is January, with an average low of 42°F and high of 57°F.

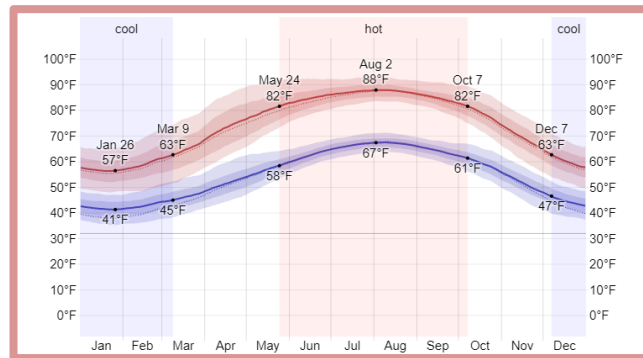


Figure (21): Average High and Low Temperature in Nuba

## Sun:

The length of the day in Nuba varies significantly over the course of the year. In 2021, the shortest day is December 21, with 10 hours, 5 minutes of daylight; the longest day is June 21, with 14 hours, 13 minutes of daylight.

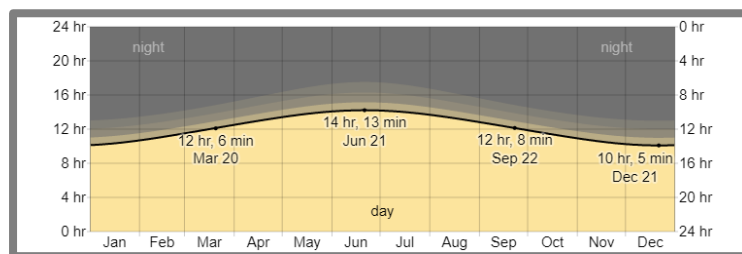
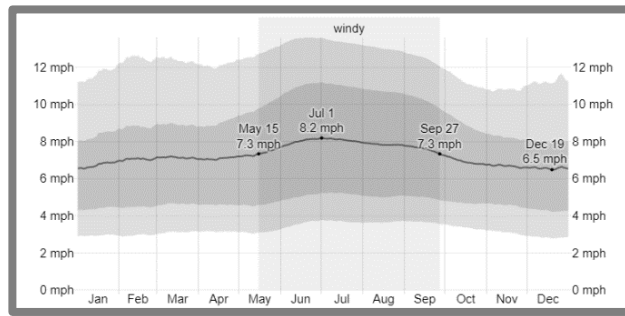


Figure (22): Hours of Daylight and Twilight in Nuba

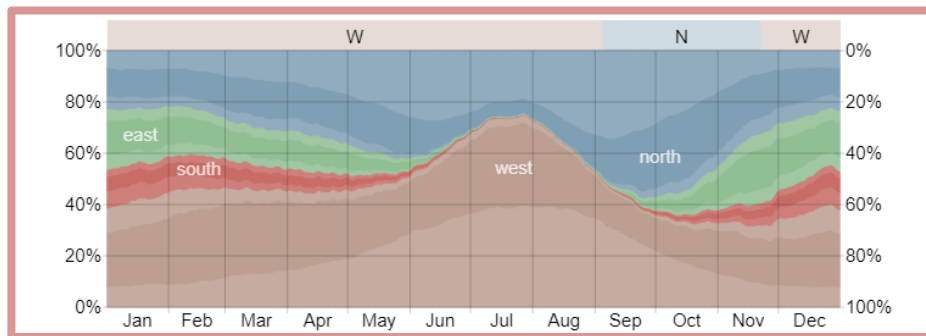
## Wind:

This section discusses the wide-area hourly average wind vector (speed and direction) at 10 meters above the ground. The wind experienced at any given location is highly dependent on local topography and other factors, and instantaneous wind speed and direction vary more widely than hourly averages. The average hourly wind speed in Nuba experiences mild seasonal variation over the course of the year. The windier part of the year lasts for 4.4 months, from May 15 to September 27, with average wind speeds of more than 7.3 miles per hour. The windiest month of the year in Nuba is July, with an average hourly wind speed of 8.1 miles per hour. The calmer time of year lasts for 7.6 months, from September 27 to May 15. The calmest month of the year in Nuba is December, with an average hourly wind speed of 6.6 miles per hour.



**Figure (23): Average Wind Speed in Nuba**

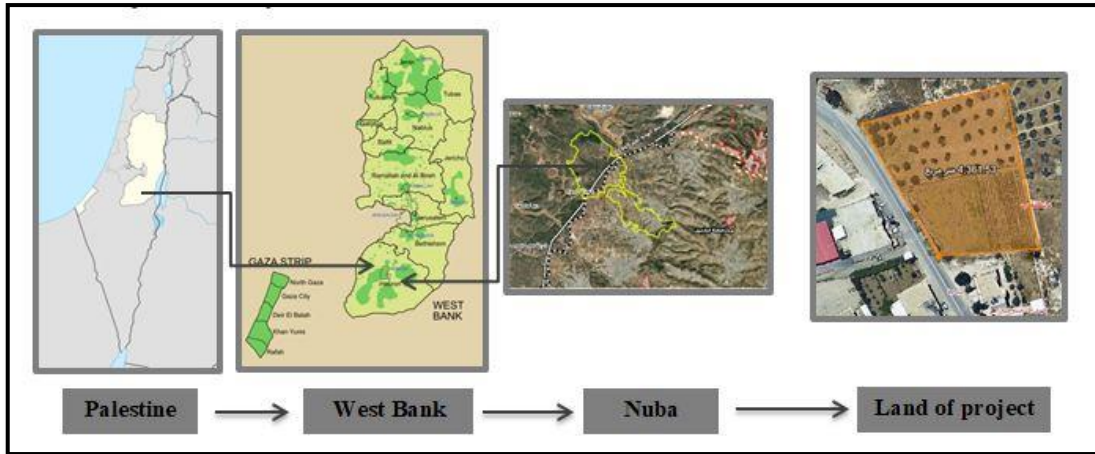
- The predominant average hourly wind direction in Nuba varies throughout the year.
- The wind is most often from the north for 2.6 months, from September 4 to November 22, with a peak percentage of 57% on September 25. The wind is most often from the west for 9.4 months, from November 22 to September 4, with a peak percentage of 39% on January 1.



**Figure (24): Wind Direction in Nuba**

### Topography:

The general nature of the village is mountainous, as it is located at the foot of a mountain that has descended from east to west and is interspersed with valleys, and the village itself is located between two valleys: (Wadi Al-Yehuda) to the south of the village (and Wadi Al-Arab) to the north of the village, while the higher mountain ranges are found in the east of the village Its height ranges from 600 to 700 meters above sea level, and there are plateaus whose height does not exceed 400 meters.



**Figure (25): Topography:**

### 5.3.2 Access to the proposed plot:



**Figure (26): proposed plot**

### 5.3.3 The forth level health center site to be designed:

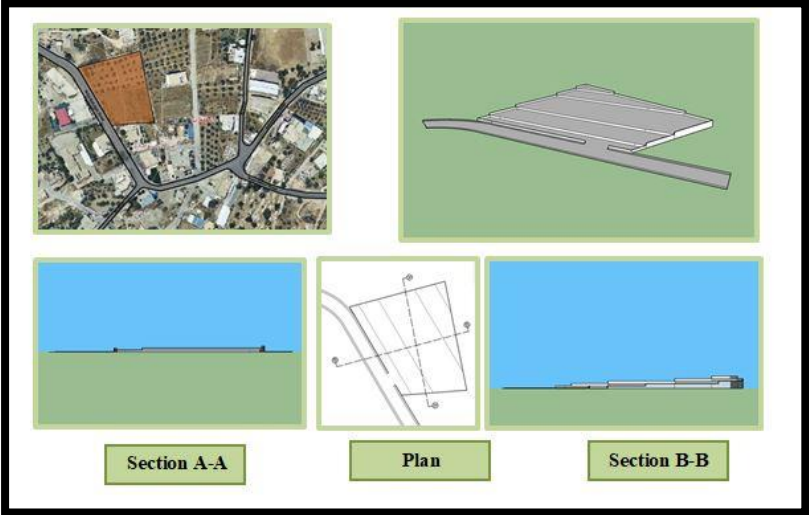
- City: Hebron.
- Location: Nuba.
- Basin: 9.
- Ownership: Nuba Municipality.
- Area: 4400 square meters.

**Streets around the plot of land:**



**Figure (27): Streets plot of land**

**Topographic:**



**Figure (28): Topographic:**



**Figure (29): Clarify the parts of the project**

### 5.3.4 Surif:

#### Geographical location:

Surif is located northwest of the city of Hebron, and it is bordered to the south by the frontline villages (Kharas, Nuba, Beit Ula), to the north by the village of Al-Jab'a and Nahalin, to the east by the town of Beit Ummar, and to the west by the borders of the Green Line (1967). The site is on the map, The population of the town in 1922 AD (1265 people), in 1931 AD the number rose to (1640 people), and in 1945 AD it was estimated at (2190 people)

Currently, the population of Surif is estimated at 15,000 thousand, of whom 13,000 are at home and 2,000 are abroad.

The area of the town is estimated at about (38,876) dunams, and it is distributed over the hills and mountains that make up the town, from Beit Ummar in the east to the borders of the Green Line in the west, and from the villages of Nahalin and Al Jabaa in the north to Kharas village in the south.

This is in addition to the vast territories occupied within the Green Line.

#### The climate:

In Surf, the summers are long, warm, arid, and clear and the winters are cold and mostly clear. Over the course of the year, the temperature typically varies from 41°F to 87°F and is rarely below 35°F or above 92°F.

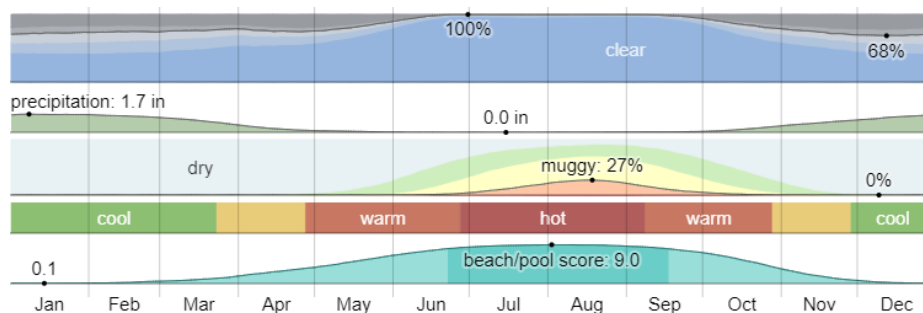
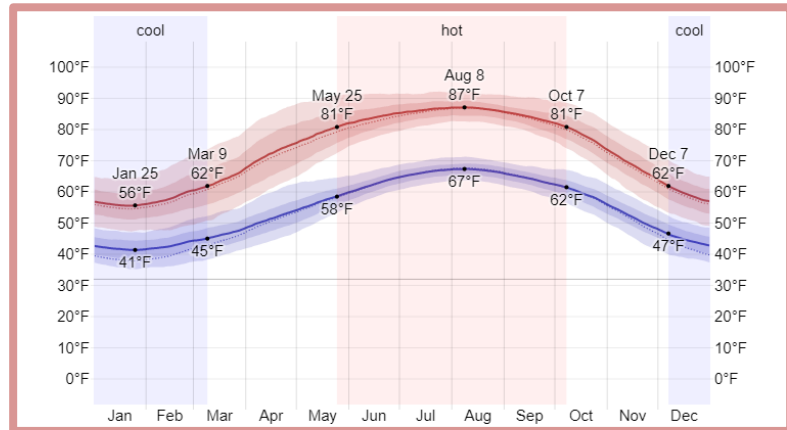


Figure (30): Climate in Surif

## Average Temperature in Nuba:

The hot season lasts for 4.5 months, from May 25 to October 7, with an average daily high temperature above 81°F. The hottest month of the year in Surif is August, with an average high of 87°F and low of 67°F.

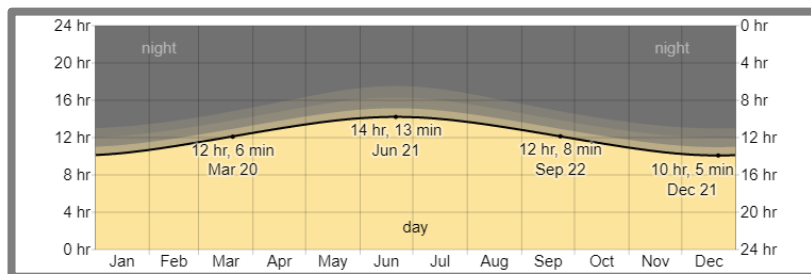
The cool season lasts for 3.1 months, from December 7 to March 9, with an average daily high temperature below 62°F. The coldest month of the year in Surif is January, with an average low of 42°F and high of 56°F.



**Figure (31): Average High and Low Temperature in Surif**

## Sun:

The length of the day in Surif varies significantly over the course of the year. In 2021, the shortest day is December 21, with 10 hours, 5 minutes of daylight; the longest day is June 21, with 14 hours, 13 minutes of daylight.



**Figure (32): Hours of Daylight and Twilight in Surif**

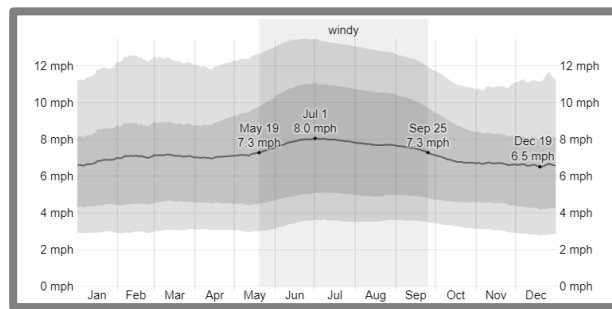
## Wind:

This section discusses the wide-area hourly average wind vector (speed and direction) at 10 meters above the ground. The wind experienced at any given location is highly dependent on local topography and other factors, and instantaneous wind speed and direction vary more widely than hourly averages.

The average hourly wind speed in Surif experiences mild seasonal variation over the course of the year.

The windier part of the year lasts for 4.2 months, from May 19 to September 25, with average wind speeds of more than 7.3 miles per hour. The windiest month of the year in Surif is July, with an average hourly wind speed of 7.9 miles per hour.

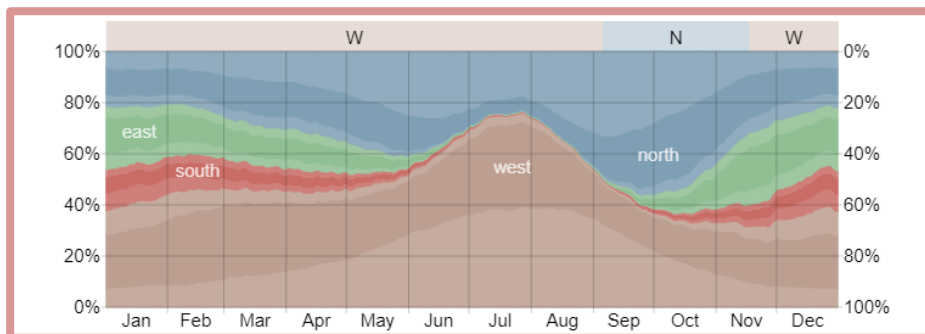
The calmer time of year lasts for 7.8 months, from September 25 to May 19. The calmest month of the year in Surif is December, with an average hourly wind speed of 6.6 miles per hour.



**Figure (33): Average Wind Speed in Surif**

The predominant average hourly wind direction in Surif varies throughout the year.

The wind is most often from the north for 2.4 months, from September 5 to November 17, with a peak percentage of 56% on September 25. The wind is most often from the west for 9.6 months, from November 17 to September 5, with a peak percentage of 38% on January 1.



**Figure (34): Wind Direction in Surif**

## Topography:

For the purposes of this report, the geographical coordinates of Surif are 31.651 deg latitude, 35.064 deg longitude, and 1,850 ft elevation.

The topography within 2 miles of Surif contains very significant variations in elevation, with a maximum elevation change of 1,591 feet and an average elevation above sea level of 1,932 feet. Within 10 miles contains very significant variations in elevation (2,805 feet). Within 50 miles contains large variations in elevation (5,384 feet).

The area within 2 miles of Surif is covered by grassland (35%), shrubs (27%), trees (26%), and sparse vegetation (13%), within 10 miles by grassland (24%) and cropland (19%), and within 50 miles by bare soil (35%) and water (22%).

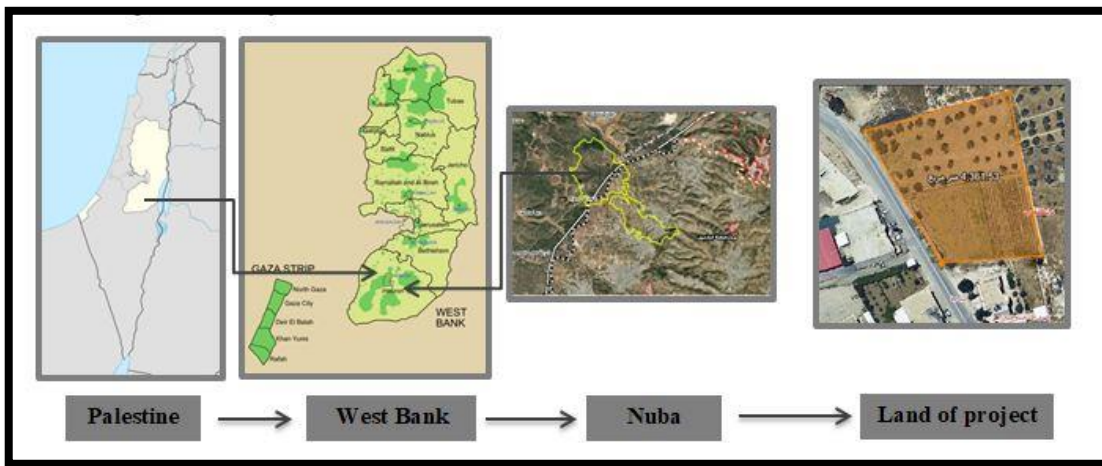


Figure (35): Topography:

### 5.3.5 Access to the proposed plot:

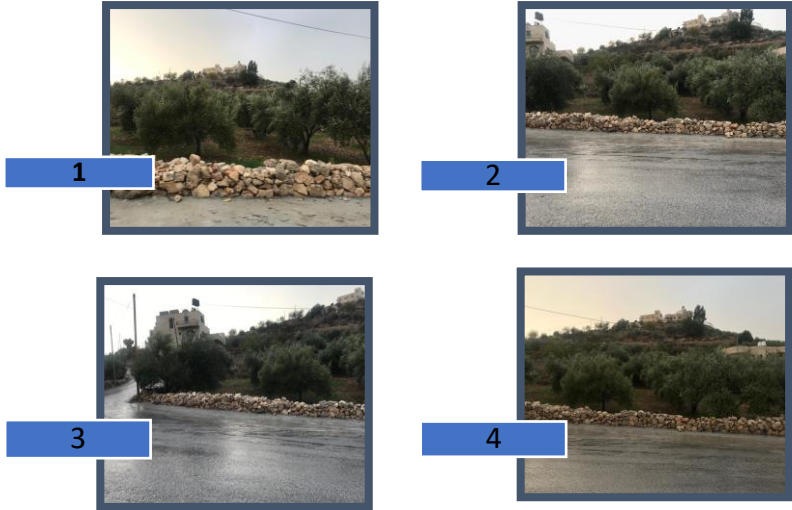
Streets around the plot of land:



Figure (36): proposed plot

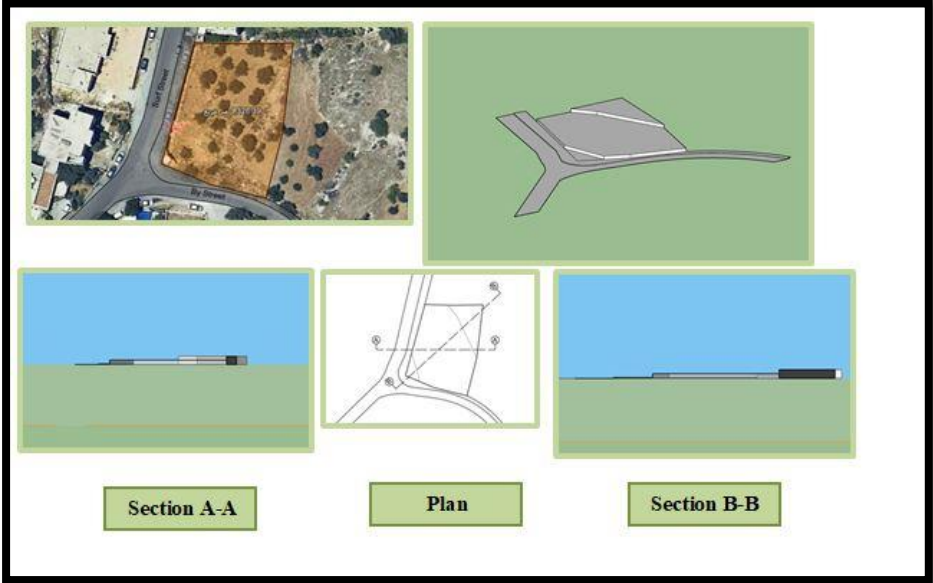
**5.3.6 The second level health center site to be designed:**

- City: Hebron.
- Location: Surif.
- Ownership: Surif Municipality.
- Area: 1330 square meters.



**Figure (37): Clarify the parts of the project**

**Topographic:**



**Figure (38): Topographic.**

## **Chapter "6"**

### **Project program**

- **Chapter Six: Project program:**

**6.1 Introduction.**

**6.2 Assistance and accommodation on the project.**

**6.3 Functional Relationships.**

**6.4 Tables of spaces.**

**6.5 List of sources and references**

## 6.1 An introduction:

This chapter includes a preliminary study of the proposed project elements, their area, and the functional relationships among them in line with the project's goals and aspirations, as it is considered a complementary step to studying the design standards and study cases that were previously addressed and based on them and upon consulting with specialists in the medical field, through which we will proceed towards the architectural design for the project.

## 6.2 The proposed components and sections of the project:

These elements and components were determined according to the goals and needs of the proposed project and based on the functional studies of the comprehensive health center departments.

The project consists of the following main sections

## 6.3 Functional Relationships:

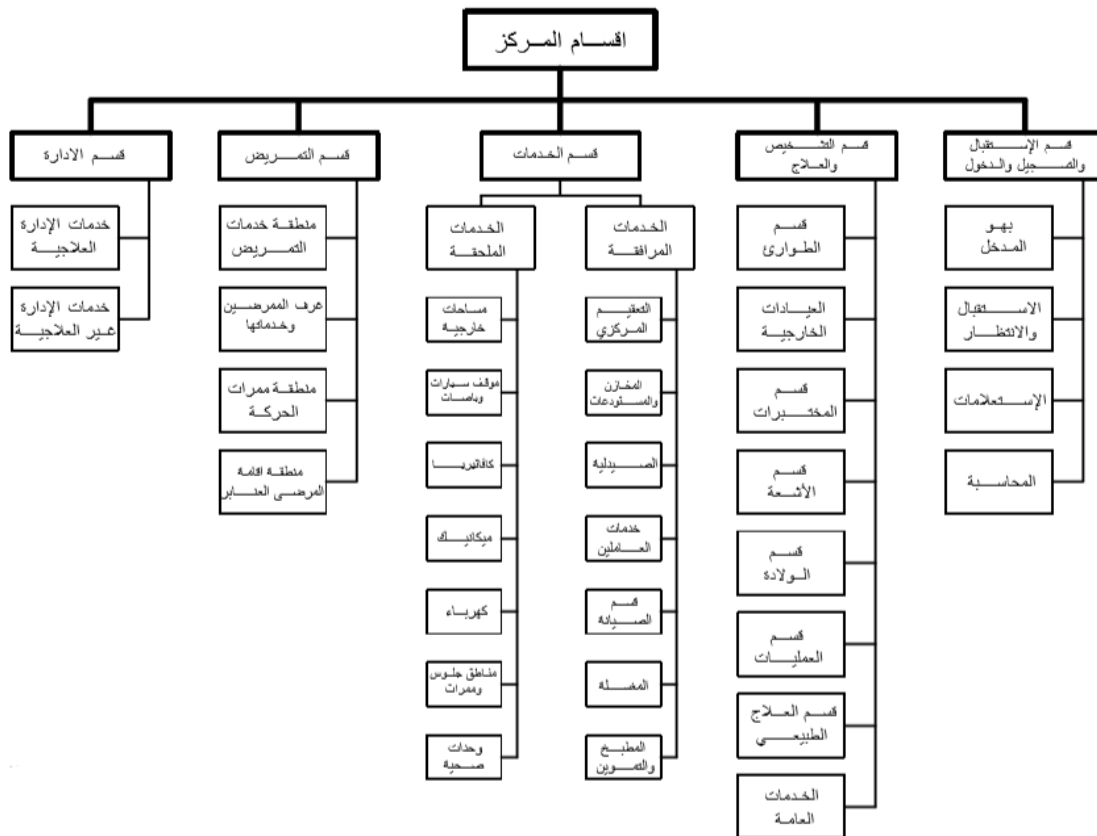


Figure (39): The proposed organizational structure of the center

Reference: Engineering Department, Al-Bireh Municipality

## 6.4 Space tables:

Based on the design criteria that were mentioned previously, the areas of the project sections were determined as follows:

### 6.4.1 Health Center Sections :

- Level 4:

Section	Area( m <sup>2</sup> )
Reception, registration and entry department	130
Diagnostics and treatment department	1593
Department of Nursing	240
administration Department	312
Accompanying and Ancillary Services Section	516
General Services Department	160
Central sterilization department	154
Total	3105

Table (1): Table of areas for the divisions of the centre

Source: researchers

### 6.4.2 Department spaces :

The following is a detailed explanation of the proposed spaces in the project:

#### 1. Reception, Registration and Entry Section:

Element	number of units	Unit area (m2)	Total area (m2)
Entrance foyer	1	30	30
reception and waiting	1	80	80
accounting	1	20	20
Total			130

Table (2): Table of areas for the reception, registration and entry department

## 2. Diagnostics and treatment department:

Element	number of units	Unit area (m2)	Total area (m2)
reception and waiting	1	45	45
emergency room	3	20	60
examination room	2	20	40
Sterile materials and medicines room	1	15	15
Doctors and nurses rest	2	20	40
Doctors and nurses rooms	2	20	40
Stores	-	-	30
lanes	-	-	120
Toilets	-	-	30
Total			420

**Table (3): Table of areas for emergency department**

Element	number of units	Unit area (m2)	Total area (m2)
X-ray room	1	30	30
Operation Center	1	6	6
The dark room	1	9	9
lab	1	100	100
Monitor room	1	12	12
Radiologist's office	-	-	12
Toilets	-	-	20
lanes	-	-	80
Total			296

**Table (4): Table of areas for radiology and laboratories**

Element	number of units	Unit area (m2)	Total area (m2)
Antenatal waiting dormitory	1	20	20
natural delivery room	1	15	15
postpartum room	1	20	20
specialist office	1	15	15
changing room	1	4	4
nurses room	1	20	20
operations room	1	30	30
lanes	-	-	80
Total			204

**Table (5): Table of areas for Maternity ward**

Element	number of units	Unit area (m2)	Total area (m2)
Receive and record	1	20	20
outpatient clinics	4	20	80
water cycles	1	20	20
lanes	-	-	60
Total			160

**Table (6): Table of areas for outpatient departments**

### 3. Department of Nursing:

Element	number of units	Unit area (m2)	Total area (m2)
Reception	1	12	12
nurses break	1	25	25
nursing unit	1	9	9
dorm room	1	48	48
nurses office	1	20	20
additional services	1	30	30
lanes	-	60	60
Store	1	16	16
Total			240

**Table (7): Table of areas for the Nursing Department**

### 4. Accompanying and Ancillary Services Section:

Element	number of units	Unit area (m2)	Total area (m2)
pharmacy	1	36	36
Total			36

**Table (8): Table of areas for the pharmacy department**

Element	number of units	Unit area (m2)	Total area (m2)
Warehouse of materials and tools	2	50	100
Hardware Store	1	60	60
Storage of gases and volatile substances	2	60	120
medicine store	1	30	30
Total			310

**Table (9): Table of areas for general stores**

Element	number of units	Unit area (m2)	Total area (m2)
public kitchen	1	60	60
meal prep	1	30	30
supplies store	2	12	24
refrigerators	1	20	40
Toilets	-	-	16
Total			170

**Table (10): Table of areas for central kitchen**

#### 5. Central sterilization department:

Element	number of units	Unit area (m2)	Total area (m2)
to receive	1	10	10
decontamination	1	25	25
sterilization vacuum	1	40	40
Cooling	1	12	12
Encapsulation	1	12	12
sterile store	2	25	25
Delivery	1	15	15
washing machine	1	20	20
Total			154

**Table (11): Table of areas for the central sterilization department**

#### 6. General Services Section:

Element	number of units	Unit area (m2)	Total area (m2)
generators and engines	-	80	80
Water tanks and pumps	-	80	80
Total			160

**Table (12): Table of areas for the General Services Department**

#### 7. Administration Department :

Element	number of units	Unit area (m2)	Total area (m2)
Reception	1	20	20
General Director	1	30	30
secretarial	1	20	20
vice president	1	20	20
financial manager	1	12	12
Hall Meetings	1	40	40

Archives	1	16	16
social services	-	20	20
Toilets	-	20	20
lanes	-	120	120
Total			318

**Table (13): Table of areas for the Administration Department**

• **Level 2:**

Section	Area( m <sup>2</sup> )
Reception, registration and entry department	70
Clinics Department	24
Vaccination Department	16
General Services Department	35
laboratory	20
pharmacy	10
Total	175

**Table (14): Table of areas for the divisions of the centre**

Source: researchers

**1. Reception, Registration and Entry Section:**

Element	number of units	Unit area (m2)	Total area (m2)
Entrance foyer	1	20	20
reception and accounting	1	10	10
waiting	1	40	40
Total			70

**Table (15): Table of areas for the reception, registration and entry department**

## 2. Clinics Department:

Element	number of units	Unit area (m2)	Total area (m2)
GP clinic	1	12	12
Specialist doctor clinic	1	12	12
vaccination clinic	1	16	16
Total			40

**Table (16): Table of areas for the clinics department**

## 3. General Services Section:

Element	number of units	Unit area (m2)	Total area (m2)
General facilities	1	15	15
stairs	1	20	20
pharmacy	1	10	10
laboratory	1	20	20
Total			65

**Table (17): Table of areas for the General Services Section**

## 6.5 List of sources and references:

### ▪ Arabic References:

- (١) ابن بيلا زكريا، حياة سيد العرب.
- (٢) مروان مقدسي ميريام. تأثير التصميم المعماري للمراكز التجارية الحديثة على الواقع الاجتماعي في سوريا، جامعة تشرين في سوريا، ٢٠١٥.
- (٣) خلوصي، محمد ماجد، خلوصي، احمد ايمن بعنوان :موسوعة المسابقات المعمارية، المنشآت التجارية والاسواق، ٢٠٠٣.
- (٤) فواز كركجة، جوانب من بنية المدينة العربية الاسلامية ودواعي توثيقها مجلة كلية التربية الاساسية، ٢٠١١.
- (٥) كتاب صندوق الاستثمار الفلسطيني، ٢٠١٢.
- (٦) مكتب صحة الخليل ، قسم الهندسة.
- (٧) صحة شمال الخليل, حلحول.

### ▪ Foreign References:

- 1) Lawrence, A.W., (1996). Greek Architecture. Yale University .
- 2) Morris, A.E.J., (1994), History of Urban Form, Before the Industrial
- 3) Revolutions, (3rd.ed.). Longman, Essex .
- 4) Norwich, J.J., (1984), The World Atlas of Architecture, Mitchell
- 5) Beazley, London .
- 6) Smith, G.E.K., (1990), Looking at Architecture, Harry N Abrams Inc, New York.
- 7) COLEMAN, P., (2006) Shopping Environments: Evolution, Planning and Design .
- 8) GEIST, J.F., (1985), Arcades: The History of a Building Type, MIT.
- 9) Cambridge.
- 10) Mackeith, M., (1986),The History and Conversation of Shopping Arcade, Mansell, London.
- 11) Ford, L. R. (2000). The Spaces Between Buildings. The John Hopkins University Press.
- 12) GRUEN, V., (1960), The Heail of Our Cities The Urban Crisis :
- 13) Diagnosis and Cure, Simon and Schuster, New York.
- 14) KOOLHASS,R., (2001), The Harvard Design School Guide to Shopping (Taschen Specials)

### ▪ Websites:

- 1) <https://www.archdaily.com/212809/health-center-of-ciudad-real-arquitectonica>
- 2) <https://www10.aecafe.com/blogs/arch-showcase/2012/03/16/health-center-of-ciudad-real-in-ciudad-real-spain-by-arquitectonica/>
- 3) <https://www.google.com/maps/place/نوبا>
- 4) <https://satellite-map.gosur.com/en/?ll>
- 5) <https://mstkshf.com/mstkShf/index.html>
- 6) <https://online.regiscollege.edu/blog/4-challenges-facing-the-health-care-industry/>
- 7) <https://www.verywellhealth.com/primary-secondary-tertiary-and-quaternary-care->
- 8) <http://site.moh.ps/index/Books/BookType/2/Language/ar>
- 9) <https://vistaevents.com/en/>
- 10) <https://www.travelsignposts.com/>