

Urban renewal as a tool of cities sustainability Sulaimani as a case study- north Iraq

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ABSTRACT

In historical areas, the urban fabric and building structures are exposed to many circumstances including aging, natural disasters, insect infestation, climatic changes, and human intervention (which might include changes that affect the authenticity of structures and a city's historical layout and consideration made during original planning). From the beginning, the importance of urban renewal comes as an intentional process that focuses on restoring the original functionality and preserving the original architectural characteristics and identity of a city's urban fabric and doing so in a way that expresses the historical development of a city and its urban heritage and historical heritage.

This research analyzed the morphological change of Sulaimani at the first foundation until now. In addition, the historical parts of Sulaimani analyzed depend on urban renovation policies. Consequently, urban renewal policies including conservation, rehabilitation, and renovation were applied on the historical area of Sulaimani in order to restore and preserve historical buildings as well as providing good quality of life with social and economic changes.

Keywords: KeyWords / Urban Renewal- Sustainability –Conservation – Rehabilitation – Redevelopment-Morphological

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1. Introduction

The urban fabric and the authenticity of the planning and architectural standards of the old cities must be preserved in various levels or measures. It is mainly concerned with urban renewal approaches. Urban renewal is a complex and comprehensive process due to many conditions, including practical procedures performed, field studies and expert scientific analysis in order to define policies of urban renovation [1].

Additionally, urban renewal policies including conservation, rehabilitation and redevelopment, and are selected according to a practical consideration of the urban fabric. This is done in order to maintain architectural aesthetic character, original construction methods and architectural functionally, and the traditional spatial composition and layout in city planning in order to match modern requirements and new technological developments, and planning standards to revive and improve, but preserve, old cities in the modern urban environment [1].

Methods of urban renewal have developed considerably and have become increasingly linked to various scientific disciplines such as engineering, chemistry, natural and geology. This is because maintenance, restoration, and

reconstruction work require conducting many on-site studies, field surveys and scientific examinations in the process of-of maintenance, restoration or reconstruction.

1.1. The city develops with elements that distinguish it as unique

The term urban renewal in general and conservation, in particular, have a comprehensive meaning and aim to study the surrounding environment and the procedures necessary to restore the buildings and architectural features of the original model and urban fabric [5]. What is emphasized and considered carefully in using modern and scientific methods is how to most effectively preserve the old urban fabric and celebrate the original spirit of the city or area. For this reason, it is important to fully understand the meaning and complexity of urban renewal and its concepts before beginning to renew of any building and to protect old buildings and the historical sites that really serve as important monuments to history and culture [1].

SO From their beginning, cities go through many stages and changes that influenced by location and terrain, and these elements influence functionality and city size. Cities are surrounded by agricultural and grazing areas, where construction materials are sufficient to meet the needs of the population living in those areas and can easily be transported to the population of cities and meet a city's needs for goods, industry, and services. Additionally, the needs of surrounding rural areas must be met. This led to the belief that the foundation of a city is that it does not appear by itself but is a product of integrated communities and regional influences [1].

Regional Influences show that most of the inhabitants of old cities (which developed their existence from the mature agricultural villages) are not separated from the land, but were farmers living alongside large layers of specialists in business and other trades -- leaders, priests and craftsmen who used natural resources, metals and timber, in the creation of inventions and the development of skills and specialization. This contributed to trade and the development of urban centers, diversity, and cosmopolitanism [1].

The cities of the earliest civilizations planned their urban centers to express themselves either through their functionality or symbolically through their distinctive buildings and memorials [1]. The **first Sumerian cities**, such as Ur and Warka, made worship a function in the holy religious area in the center of the city surrounded by the urban fabric, which included various uses of the urban land from housing, roads, shops and stores to the wall that surrounded the city to perform a security function and in doing so separated the city from its agricultural areas and the location of the port (Kar), which provided a major view of the city on the sea and served as a center for trade and shipbuilding, separating areas of the city according to functionality. The cities of the same civilization symbolically constructed temples and grain stores, which were brought from agricultural areas to meet the needs of the population [1].

While the cities of the **Pharaonic civilization** distinguished themselves with the pyramids and the tombs of the kings and did not show in their structural construction the defensive function that characterized it, with the holy and sensitive chambers within the structure shielded by thick protective walls. The temples and royal palaces that occupied a large area of the city square were not concentrated in one place but were scattered throughout the city. As a defensive measure, planners designed the port to disappear or to appear less obvious, and this was even though the city was built on the side of the river or the sea [1].

in contrast, we find the cities of the civilization of the **Indus Valley**, which are functionally characterized by their influence on the cities of Sumerian civilization, symbolically distinguished by large palaces and fortresses [1].

In the Americas, Mayan cities are distinguished by the gradual rise of pyramids. It is important to note, however, that each Mayan city became a cultural center that performed its own major function. By virtue of its administrative functions, the city of Aridou, for example, was a religious center. Uruk, on the other hand, in addition to its religious and political functions, was also a commercial center [1].

The population of Sumerian cities grew between 17-20 thousand because of their functionality. For the same reason, we also find that the cities of the civilization of Sindhi and the Pharaonic civilization reached more than 20 thousand people. The differentiation in the size and behavior of the inhabitants of the cities of civilizations began and were shaped by its functionality. By virtue of the multiplicity of functions, a city's urbanization, from its very beginning, is reflected in the functional structure of the city [1].

A city's distinctive form (morphology) is described in a city's shape, and this includes areas related to the outer city, architecture, monuments and landmarks, and functionality, all of which are shaped and altered by policies of urban renewal development, conservation, and rehabilitation. Such cultural heritage, buildings, architectural structures, and historical and contemporary functionality -is often concentrated in the heart of the cities to form a traditional center, especially in cities of the Arab-Islamic world within old or traditional neighborhoods. It is important that the basic designs of these cities are to be considered, with the most important elements of such cultural heritage preserved during any process of urban renewal. Necessarily, these designs would have experienced many stages and modifications since initial planning and require extensive investigation of architectural legacy on a local and regional level in order to preserve urban cultural heritage [1].

1.2. Arab Islamic City / Internal structure and architectural heritage site

1.1.1. The internal structure of the Arab Islamic city

Any attempt to read or compare the internal structure of the Arab-Islamic cities will lead to one fact that most Arab cities, regardless of differences related to stages of history, have been subject to similar patterns and urban planning characteristics and land use, and that the most influential factors in such development are natural, social, religious, and economic [2] the role of natural factors is clear in the western part of the Arab world, which is characterized by extreme climatic conditions. This has affected the way of building and the role of combined and adjacent spaces separated by alleys that are narrow and twisted, some of which lead to dead-ends or are not for walking. Additionally, social and religious factors have left their mark on the trends of urban development and land use in Arab-Islamic cities where the mosque located the axis which is surrounded the various architectural structures of the city move outwards into markets for trade and official buildings that are represented In the House of the Caliph or Wali. The House of the Caliph or Wali is located on one of the extended sides of the mosque. Further out, around the extensions of the mosque, residential neighborhoods emerge, inhabited by majority tribes. The city's center is a commercial and regional center for exchange between the inhabitants of surrounding villages. This happens through the exchange of agricultural and animal products in for services and goods that complement what are normal lives [2]. The cultural role of Arab-Islamic cities is demonstrated through public libraries important for mosques and religious schools, where the role of study is given great importance. We find such places near the Grand Mosque's Kadiriyah school in Baghdad and the public library at the Umayyad Mosque [2]. The physical structures of these cities, which were affected mainly by natural, socio-religious and economic factors, some of which still exist in the old neighborhoods, are considered today urban heritage. These structures occupy both historical neighborhoods and areas built-up in reaction to the influence of foreign colonial invasion which has left a clear mark on urban trends and land use. For Arabs, it is apparent neighborhoods today are a mix of both the old and the influence of Western architecture [2]. In contemporary times, the rapid urban growth of Arab cities was due to technological progress and the increase in employment opportunities, which helped to accelerate the migration of more rural people to cities. This growth and development of urban fabric was a product of different dynamics, however, and structural characteristics were largely influenced by the role of industrial and oil investment in most of the Arab world [2]. With the advent of oil-based investment, the characteristics of new development corresponded to the nature of the investment, which in turn led to the planning of cities in ways distinct to what had proceeded during the period of the Islamic Conquest, the fall of Baghdad in 1258, and the end of the colonial period. Natural, economic, religious and social characteristics were shaped by new concerns dependent on population size, the level of economic activity, and regional relations [2].

1.3. Determination of the morphological stages of the growth of Islamic-Arab cities

Based on the structural features of the Islamic-Arab cities, whose trends are based on the economic, social and religious factors of the Arab region, three basic morphological stages can be observed for the growth of these cities, which increased according to the historical dimension of each city and the development of its functional structure.

1.1.2. The first morphological phase

At this stage, the city is characterized by the cohesion of its parts and the density of its architectural blocks, which are relatively close and small. They appear to be composed of residential units (neighborhoods or residential buildings) that have a distinct hierarchical system based on functionality. Thus, they are composed of built and non-built spaces (including street systems).

Adjoining houses on either side of a narrow alley, which are often crooked and relatively tall, are those houses whose doors face and whose surfaces are close to the front and to the sides. Faced with the unified design, these houses create what are meeting points, as each house consists of an internal courtyard lined by its sides with rooms and ending with an entrance leading to a front passage between two front panels leading to the door of the house. The design encourages both social relationship and social cohesion. The city 's urban fabric is influenced by the mosque, citadel, market and trade, and the land use of rural communities.

1.1.3. Second morphological phase

During this stage, the composition of the city is not far from what it was in the first stage. The patterns of land use continue to function with the growth of civilization, with new elements dictated by Arab contacts in Western civilization due to colonization and foreign invasion.

1.1.4. The third morphological phase

This is the contemporary phase that followed the Arab liberation movements ,the complete independence and the departure of the foreign elements. These countries began to consider the spatial organization of their cities and territories according to the social leveling of some population movements to different areas with different urban and population patterns to accommodate the coming cities. Immigrants from outside helped to establish these areas conducted around and beyond the old and the next to them according to new standards dictated by the rapid movement of the population from the old to the new. The most important of these standards is the infrastructure, new neighborhoods, and the intervention of the state in managing and stimulating the dynamism of movement.

1.4. The local planning activities

Designs of cities) in addition to the government housing operations through the housing projects and the distribution of land and the establishment of real estate banks, which is given according to documents issued by the local planning institutions, which has subjected the movement of cities and growth to indicators and alternatives to urban growth guided by the basic designs of cities In addition to the urban renewal processes that were practiced on the structures and functions of the central region according to one of the policies of that renewal, which takes into account the privacy of the population and the required development .

At this stage, suburbs began to appear in Arab Islamic cities along the lines of the cities of the world affected by the economic and social factors that prevailed during that period, which contributed to the emergence of this phenomenon and added additional areas to the city's functional structure. The Hawaii urban and suburban area was contributed to the development of the cities in ways which cannot be addressed during the preparation of basic designs of the urban growth process.

1.5. Urban renewal in heritage and historical cities and motives of interest

Heritage In general, the lexicon defines the language as all that man has inherited from his past materially or immaterial. Heritage property is the collection of material products produced by previous civilizations and still retains its utilitarian or moral value.

Architectural or urban heritage is a major aspect of the material heritage that man has

National, religious or artistic, and although there is a difference between what is heritage according to this definition and What is archaeological, which includes all the movable and immovable achievements that are built, made, derived, written, painted, or photographed by humans in the preceding times, but the element of time cannot be the separation between what is archaeological and what is heritage. Many of the monuments today constitute

a heritage. It still retains its aesthetic and utilitarian value, but if it ceases to need its value, it will become a reflection of its image of a civilization at some time. Therefore, some people (Fathi), argue that the word "heritage" with its broader and comprehensive content means the totality of the legacy of the civilizations of previous generations of modern society. This means that heritage is not limited to language and literature, as many believe, but includes all dimensions of cultural moral and material philosophy Architecture, history, science, art, and architecture, but the architectural heritage remains the most important historical achievement because it is a reading of the history of nations. It is a record that does not lie, and a living witness silently expresses through its structure and its vocabulary the taste of art and the rise of taste and the maturity of civilization. It is also a reflection of the moral, spiritual, solidarity, and solidarity with the job, and there is an imperative to link the present with the old. The cultural heritage especially the architectural plays a key role in the development of societies towards The future influences heritage in the interaction of societies with these achievements and motivates them towards innovation, creativity and innovation because the impact on national heritage does not mean the reproduction of the past and the surrender of its traditions, but inspiration and renewal with contemporary content.

1.6. It is possible to identify three motives for attention to urban heritage

First: The urban heritage is a civilized message through which to read the biography of the United Nations Four - Thought - Behavior - Output - Values With the exception of physical output, the other three pillars are often intangible concrete perceptions, making them vulnerable to the rigging and distortion It loses its truth and its purity over time, and the fog of cognition becomes distorted to keep the products The most important architecture is the truth in conveying the truth of life to the people who produced it because it is the vessel that reacts and fuses the pillars of civilization.

Secondly, the urban heritage of the nations is an impetus to motivate the nations and push them into the curricula of evolution because it constitutes a latent potential that can be moved in the constructive human direction - as was the case with Europe, which was torn apart In the era of its rise, with its traditional Greek and Roman heritage card, to draw from its start to its future. This is why we, the Arabs and Muslims, lack endless glory through the architectural achievements that still remain in Bukhara and Samarkand.

Thirdly, the urban heritage is the link between the inherited origin and the woven branch, whose existence must be derived from the values of the past, to form a coherent textual connection between originality and modernization, without interruption and separation from the spatial character traits occupied by the heritage in relation to the requirements of contemporary urban life. Including the cities, especially the Arab Islamic cities we are in, including the city of Salt and then knowledge or diagnosis of the urban heritage that can be included in each stage to justify the interest that we mentioned.

1.1.5.Types of the urban heritage of the morphological stages of urban development

It is possible to diagnose the urban heritage of the cities.

- 1- Buildings of old neighborhoods, especially from cities that include human settlements which reflect different types of human life with all their intellectual, moral and behavioral data. Residential buildings are an echo of these values in different periods of settlement.
- 2- Buildings that still retain aesthetic or utilitarian values that can be qualified to perform functions or services and become active buildings of their presence in city centers or economically feasible.
- 3 - The monumental architecture or the symbolic architectural monuments that bear the thought of Uqima or behavior and form a distinctive load and Raidafi time frame.
- 4 - Buildings that have historical implications or associated with an important historical event made a privileged location worthy of commemoration and pride as the bows of victory in the battles, the homes of national leaders, or families of the old whose extensions are still present.
- 5- Buildings and facilities whose presence within the urban fabric is necessary as it forms the traditional image of the city's facilities and carries some morphological facts of urban development and a picture of the uses.

The land and the functions that it was performing through these stages, which does not constitute a surprise architectural, but can be incorporated into the urban fabric of the city after rehabilitation or development in a direction that maintains the value of design and aesthetic and dedicate its role of civilization.

The need for urban renewal has emerged at the present time for several factors. The most important is the growth of cities and their expansion in surveying, the emergence of the need to build roads after the growth of industrialization and modern technology. The absence of coordination in the land's utilizing and the lack of public services required or the existence of the level of the achievement of objectives and general neglect. To the creation of areas in the center of cities over time has become unable to absorb the increase in the population and to meet their needs and renewable and increasing because of their lack of or inefficient services. While in the wars, there was a major cause of urban renewal (World War II), and this has already happened in many cities of the world such as Hamburg and Arsu-Hiroshima. In other words, emergency conditions such as wars and disasters no longer cause urban renewal. The urban renewal has several definitions. The first of which is the definition of urban regeneration: deliberate attempts to change the urbanization of urban areas. The urban intention of the course of organizing the plan and on a large and wide scale of the existing areas of the city in order to adapt to the current and future requirements in urban living and work terms and the development of using urban land in the city. This was the reason for the occurrence of many tariffs according to the range of activities and activities of the urban renewal, where he knew med Hurst and Parry Levies 1969 as (-) Extensive demolition of old properties in a way that removes a large area of buildings and allows the planning and construction of buildings Modern, roads and open spaces) Chapin (1) has defined urban renewal as:

(A change in the physiological part of the body of the city where this change is the modification of the parts taken from the structural and service aspects or change, and this process over time on parts of the city in response to all the pressures of economic and social changes).

In this way, urban renewal is a set of social, economic and urban measures that aim to create a reasonable and acceptable planning structure for any city based on securing the best environmental and urban conditions for the inhabitants of the city. This is to guarantee a comprehensive and integrated policy aimed at developing the city by developing its urban structure economic and social activities to enable them to play their role. This means that their

role is limited to construction, demolition, and road construction, but it includes aspects of urban, social and economic.

1.7. The role of renewal-urban policies in preserving and rehabilitating heritage buildings

Through the definition of urban renewal as one of the activities of urban planning, it is possible to say that there are justifications, benefits, and objectives of urban renewal can be determined through the approach pursued by the pursuit to achieve these goals. In general, the curriculum of urban renewal today includes three main events:

First: Conservation

It is defined as a protection process used in important areas of excellent quality relative to its function, or it is of historical, cultural and architectural value, in which the buildings are kept in good physical condition.

Conservation does not mean preserving an entire area, but it may mean choosing a certain number of buildings that will be preserved, either because they do not decay or have historical or architectural value, and their condition or shape is still good. The building may also be of historical, religious or social value, which necessitates preservation and restoration of the structure and architecture. This structure will interact with the urban fabric as a whole and thus will recover from the social and economic aspects and remain alive within the city's urban fabric.

The buildings of historic value are preserved through the following types of conservation:

Repair - By restoring the building to its original state by adding walls to the original structure, repairing the damaged cracks or parts, or replacing parts or parts of the building to save it from collapse so that the additions or repairs are consistent and consistent with the original structure of the building in terms of design and construction materials used in the process, The division of restoration into types is: -

Architectural or engineering restoration, or structural or specialized construction, depending on the purpose of the building, but in any case must be used materials as squalid or similar as possible to the old building materials, taking into account the original materials for the new materials used to maintain the privacy of the type and style.

Reconstruction - This happens when a building of great historic or architectural value is exposed to almost complete damage without any other procedures. This requires reconstruction of the damaged parts of the building, which cannot be restored, according to careful studies in the form of the original building in terms of design, building materials, and architectural details.

Maintenance preservation - It is the group of works and procedures necessary for the repair of damaged or lost heritage buildings to ensure their resistance against various causes of deterioration and to ensure the safety of the building and the damage of the impact or possible occurrences such as repair cracks and insulation of walls from moisture and insulating paints and walls prevailing This means maintenance is the main factor in extend the life of the building and maintain it in good conditions architecturally, constructively and aesthetically.

Second: Redevelopment

This method of urban renewal applies to areas in the process of destruction and disappearance as a whole or where the buildings are damaged and in poor conditions, which includes the removal and return of land according to a new scheme reflects the use of positive land and the pattern of population distribution.

The objectives of the development process are:

1. Removal of contaminated and polluted areas.
2. Reducing poverty and revitalizing work areas in city centers.
3. Making room for the expansion of vital institutions such as the expansion of schools and others.
4. Supplying environmentally friendly industries and expelling contaminated industries.
5. Encourage middle-income families to continue to live in city centers.

Third: Rehabilitation

The restoration of the building to perform its function again after carrying out the necessary conservation or preparation for the performance of new functions or different activities to be compatible with the spirituality of the building and its design and architectural model. Therefore, the rehabilitation activities are important in the process of renewal-urban in terms of urban, economic and social can be adopted in the regions in which the buildings are partially damaged and categorized by the absence of green areas and open spaces and absence of congestion and organization. Also, the most important specifications that all or most of the buildings remain the same, and it is only some improvements, which are intended to raise the efficiency buildings and installations although the removal of some parts thereof is to provide some facilities and services and must be provided to the population and the region.

Reasons for rehabilitation are listed below:

1. The social relationship is maintained in rehabilitation, unlike re-development.
2. Rehabilitation techniques preserve the personality of the building and the area, while comprehensive re-development methods destroy the identity of the city.
3. Rehabilitation requires less time for re-development.
4. Rehabilitation is less costly in terms of physical and economic development process.
5. Rehabilitation takes place without the need to change the place of residence while development requires this.

Reasons for urban renewal in heritage cities

It is clear that urban renewal processes cannot be separated, whether conservation (restoration, maintenance or restoration) or rehabilitation or development processes within cities with a heritage dimension, which continued to grow and expand because the urban fabric consists of a total of interrelated architectural elements and buildings and traffic paths according to formations The buildings are in turn part of the urban fabric and the rehabilitation, development, restoration, and maintenance are not completed unless they are within a vast urban fabric. Hence, the justification for urban renewal through any of its approaches to:

- 1- Buildings are exposed to extinction due to negligence and passage of time on them, as they have a lifetime cannot be exceeded or due to natural disasters such as earthquakes, floods and storm devastating, which requires demolition and reconstruction, according to the requirements of the present.

2- Change in the quality of the population in certain areas of the cities, which result from the process of rapid change in the social structure and economic level. For example, some areas were the families of the middle class, but it has changed and became each housing unit includes a number of families for groups with a small income area deteriorated due to the massive increase in the population and services have become inadequate.

3- Aesthetic values, where some believe that the justification for urban renewal is often purely aesthetic preserve the character of the city by linking the originality and heritage and contemporary requirements (modernity).

2. Methodology to deal with research goals and research importance

According to The research's objective to identify methods of renewal-urban and what policies are employed in order to preserve and rehabilitate some of the architectural and functional features inherited from historical stages of development in the ancient city of Sulaimani. Urban renewal can be sustained while preserving the functions of a city's historical architecture in a modern setting. The policies of urban renewal, which continues regardless of the historical heritage of a city, includes the architectural blocks left behind throughout the stages of the evolution of the city. These architectural blocks are important because they record the stages of a city's development..

So The importance of the research comes from urban renewal approaches as a deliberate process of restoring and stabilizing the original architectural characteristics of these places and preserving the architectural identity of the urban fabric, which expresses the stages of development of the city and its historical heritage. Some of the buildings are unique and can be carefully renewed to improve the city's survival of historical heritage and so alternatives to how such cities grow need to be considered by considering historical preservation.

In this research, the methodology is divided into two parts, the first part the morphological changes of Sulaimani is analyzed. While in the second part the historical place of the city is presented in order to show some buildings that represent certain phases of the city's growth can be conserved through processes of restoration, repair or maintenance. or rehabilitation of some architectural forms that are suitable based on what remains of the building, each building's architectural character representing a stage of development of the city ranging from the period of foreign presence, Islamic and Turkish. Only the inherited architectural features inherited can be manipulated within the process of this research.

The image of Sulaimani in 1920 that was taken by British Royal Air force is used to analyze morphological changes of the old Sulaimanya city. In addition, old neighborhoods, the master plan of Sulaimani is taken from Municipality of Sulaimani. Also, direct observation is used by the researcher. Qualitative data including aerial image, dwg maps were analyzed. Then the historical places were determined to apply one policy of urban renewal.

1.8. Sulaimani city

The city of Sulaymaniyah is located in the northeast of Iraq, 40000 m from the Iranian border, 35.33 North / 45.26 East [3] in the southeast, in the north surrounded by the Azmar Mountains and the Zagros Highlands' mountains. The city was initially established at the foot of the western mountain of Mount Zagros, in the Sulaimani province. At the end of 2002, townships (33) and (8) towns were formed with Sulaymaniyah as the center of the province, its governorate [4]. There is Qlyasans' river to the city's northwestern side, and Tanjaro river to the southwestern side of the city [3]. The city was built on the outer edge of the mountains towards the plain that connects the Bazian and Shrazur's agricultural lands. Agricultural land had a significant role in the economic viability of the city. Today, the city is located between the south and north of the country, which is connected to neighboring countries in different ways: to the east, via Roads of Penjwin and Halabja, and connected to Iran. To the northwest, it is linked to Syria, through Erbil Governorate, to Dohuk, then to Turkey. From Erbil, Kirkuk and Chamchamal are linked to Baghdad, Syria and Mosul. The city's expansion in 1921 covered an area of 132 hectares. After 50 years in 1973, the city's

area increased to 315.8 hectares. In 1980, it reached 841.5 hectares. Around 1990, the urban development of the city reached 2,173.9 hectares, and in 2003 it reached 3,891.2 hectares. Finally, the last record in 5,858.0 hectares was obtained in 2007 [3]. Throughout its history, Sulaymaniyah has become part of its various administrative rules: the rule of Baban, the Ottoman Empire, British rule, and Iraqi rule [4]. In 1784, if the city was founded, depending on historical documentation, the city's original inhabitation was 1,000 person. Various tribes were asked to send some of their families to settle there to widen the city's horizons. After 36 years in 1820, the inhabitation grew by 10,000 persons, and the city had 2,144 houses. There were about 2,033 Muslim families and about 144 other areas. The traces of historical records show that taverns, baths, markets, homes, churches and mosques were built around the Palace of Pasha as a compact structure. The city contains five mosques, a Catholic church, five bathrooms, and six hands. In 1868, Lycklama predestined that the city contains six thousand Kurds and forty-five Jewish and Catholic families [4]. On the other hand, the city contains twenty-three thousand Kurds and six hundred Jews and Christians. After the 1987 census, there was no actual inhabitation record, depending on this census, the total inhabitation was 36,4096. Nevertheless, based on the documents of the 2009 master plan, in 2005, the total inhabitation of Sulaimaniya was 670,838. In 2008, its inhabitation was 729,633.

3. Analysis and discusstion

1.9. Morphological changes of Sulaimani

The alteration of the urban fabric and ancient city can be shown by analyzing morphological changes of city. In addition, it founds spatial historical importance for the city, which provides an examination tool the morphological elements of parcel, street, and block in the ancient city. The old city is chosen as a whole to show its evolution from the 1920s until today.

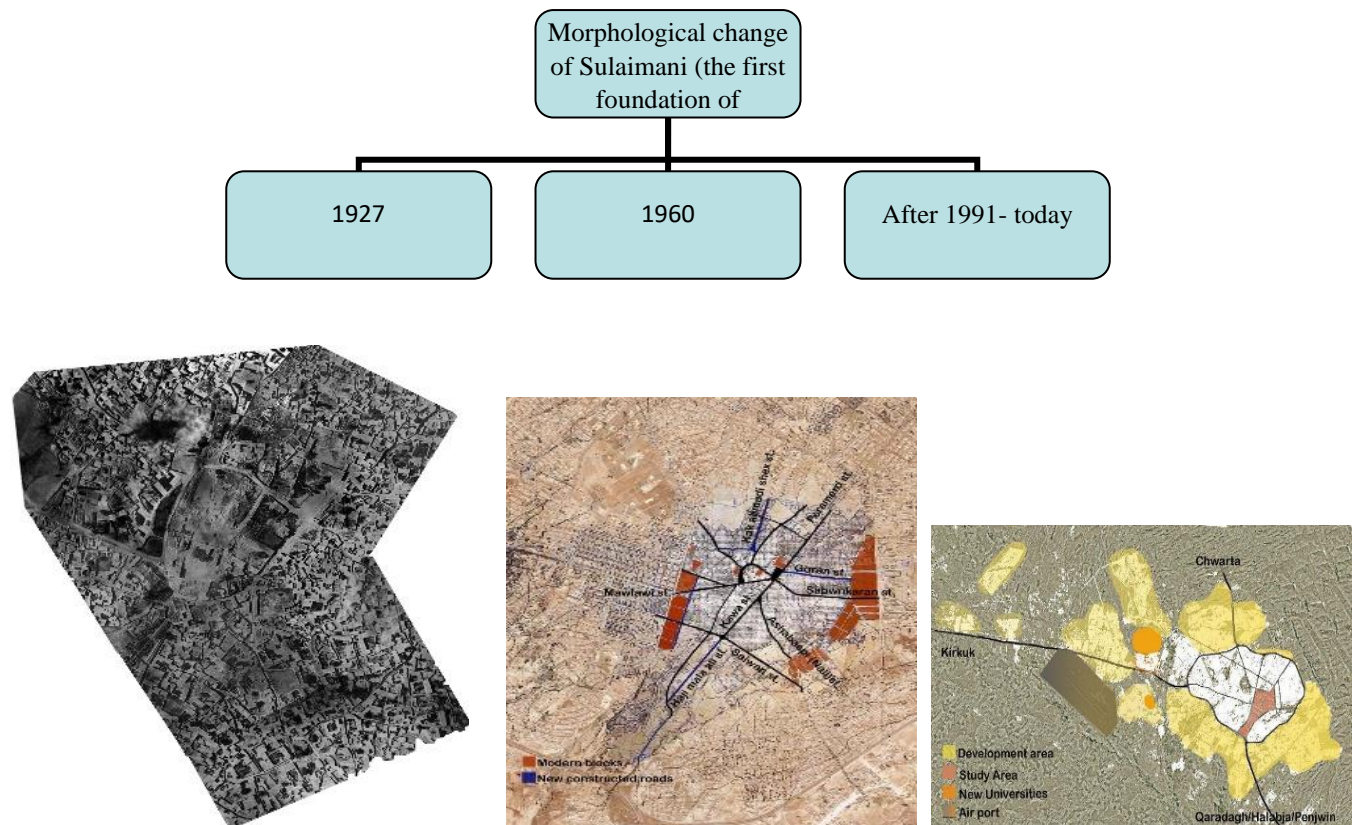


Figure1. Shows the morphological changes of Sulaimani

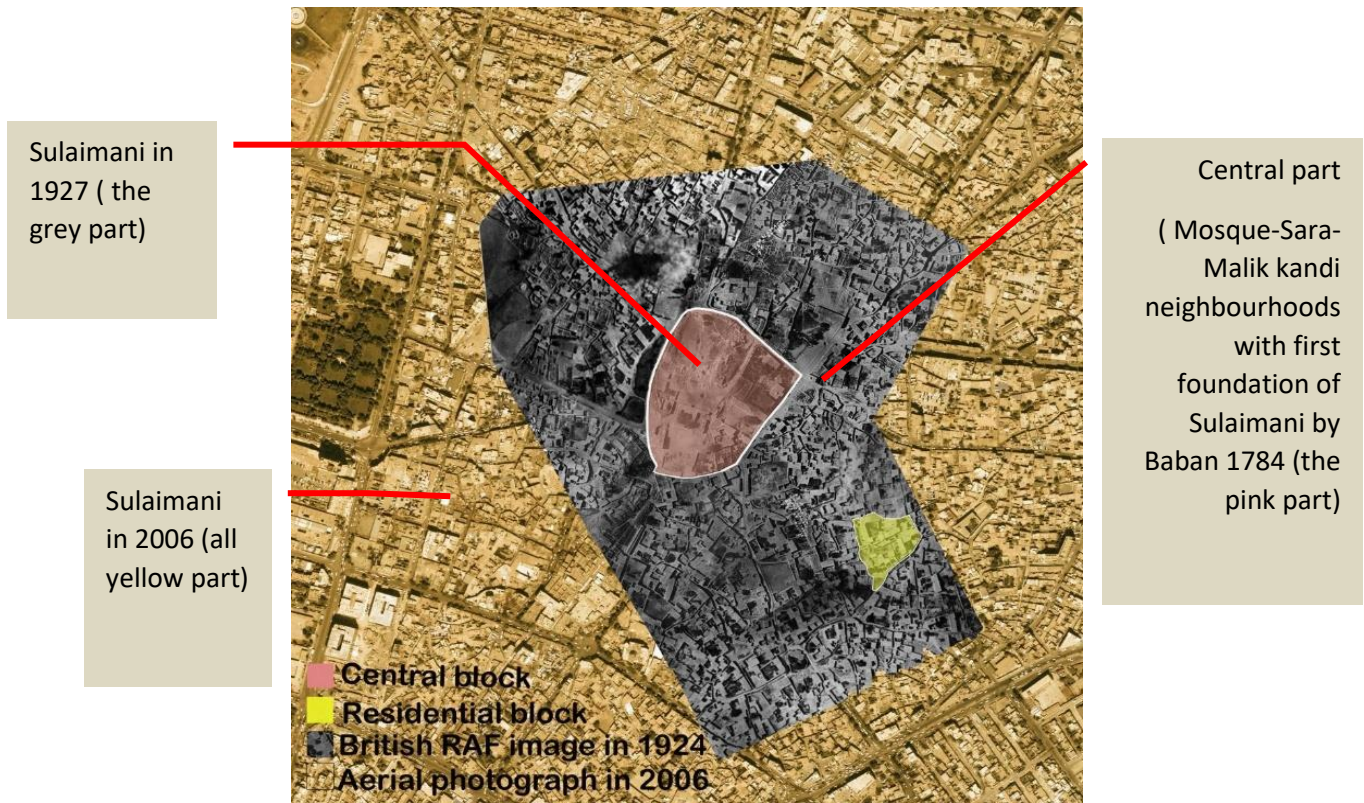


Figure 2. shows Sulaimani morphological changes from foundation to 2006 source [4]

1.1.6.Sulaimani in 1927

The functional structure of city was composed as compressed organic arranging around the tower. It was affected by culture of Islamic and conventional architecture. The city had a dominance central part which is surrounded by a different neighborhood. based on a map of 1921, the covered area was 132ha as initial city pattern. The distribution of neighborhoods which is a pattern of residential area was affected by routes of trade activity at that time. The neighborhood of Malik Kandy is the oldest city part that was supported by the central part (the administrative part) of the city and surrounded by residential neighborhoods. Malik Kandy is situated in the northeast of the research zone. It is situated at the intersection of the main roads of Pyramid in the west, Sabwnkaran in the south, and Ibrahim Pasha in the east. Depending on historical documents, the history of this neighborhood began when Ibrahim Pasha converted it from the small village to the city's first district.

Depending on the city map in 1927, the neighborhoods of Sabwnkaran, Tuxan and Malik Kandyand were detached by narrow alleys to the northeast and north of the city and were defined as the city area. Nevertheless, today's neighborhood mostly turns to mixed residential and commercial purposes, but in the 1920s, the neighborhood's structure indicates that it relies on the commercial center in the south of the research zone as the main bazaar.



Figure3. Sulaimaniyah map in 1927



Figure4. Sulaimani in 1924

1.1.7.Sulaimani 1960

After the fifties period of the last century, the city was influenced by many staff such as the major Kirkuk highway to the northwest of the city, with the constructed necessitates of roads, vehicular and traffic. On the other hands, the transportation of the city based on the organic routes. With the construction of the Mamostayan (Amin Zaki) Road, new expansion started along this particular road towards the Kirkuk Road on the occasion of the modern era. For example, new public and administrative buildings, recreational areas and the main park, all indicate the city's expansion to the northwest. Moreover, it provided a way for the public, administrative, industrial and commercial activities. However, in the northwestern direction of the city, residential developments were taking place. Thus, new modern blocks were attached to the conventional city.

In addition to the establishment of the road of Kirkuk-Sulaymaniyah, the cause of that lead to these developments in this direction was the emergence of many new factories. Though the road of Kirkuk-Sulaymaniyah was constructed in 1956, the road to Halabja still links the city to the southeast. The road of Kirkuk-Sulaymaniyah connects the Sulaymaniyah to Kirkuk as an active commercial center and close to Baghdad as the geographical center of Iraq for the Authority. The Road's Chwarta to the northeast, the Road's Sarchnar to the north, and the Road's Qara Dax to the south connect the city to other countries' parts as demonstrated in Figure 5.

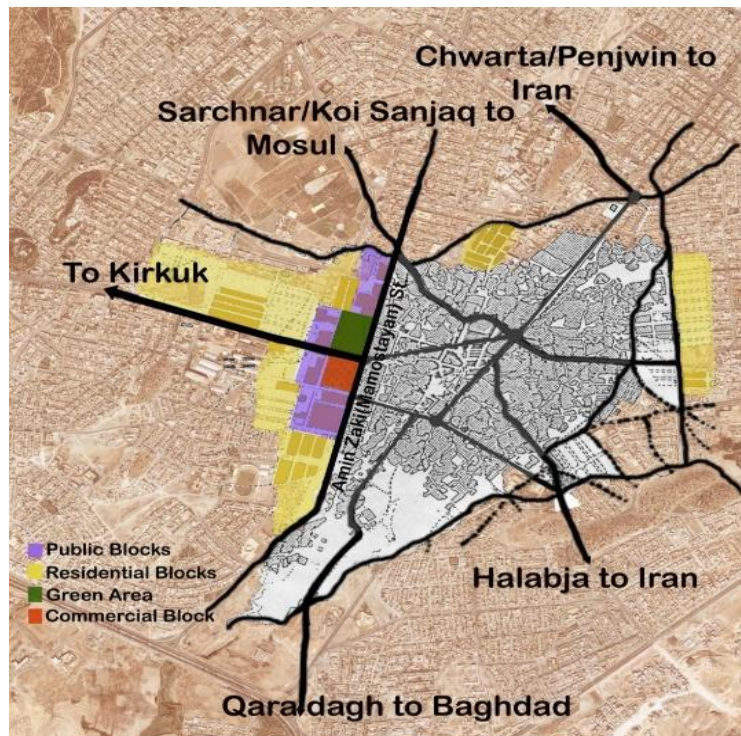


Figure 5. The development of the city in the 1950s and 1960s. source [4]

1.10. Sulaimani after 1991

In 1968, the building of new neighborhoods, hospitals, and the university made the city grow. The construction of the city was taken circularly till the 1980s. During this period, the city's expansion was identified by an area of 52,54 km² (Sulaymaniyah Municipality Archive). Although the city grew, the construction of the ring road (60 meters) around the city impeded the city's growth. The expansion of the city outside the ring road was permitted only for military use. As a result, in 1981, with the needs of a political decision, the city's future expansion area

decreased to 31,352 square kilometers. Until 1991, the municipality overturned this decision. And they increased the area on the map that identified the city by 73,113 square kilometers as a future extension. On that map, the city was surrounded by the second circular road: the 100-meter road that has been proposed in the master plan for Sulaimaniya in Duxidis in 1958 (Sulaymaniyah municipality archive). As a result, the villages surrounding the city became new neighborhoods in the city like Wlwba, Zargata, and Kani Spika. Moreover, the 60-meter (circular road) around Sulaimaniyah that has been built in 1973, has lost its functionality as a frontier component. Therefore, the city is growing today in a circle with an emphasis on expansion towards the northwest direction. Nevertheless, northwest, southeast, and southeastern directions occupied or partially occupied by designing settlements, geographical barriers, and numerous tombs to the eastern direction of the city would restrict its growth. The areas of agriculture, hills, and mountains will hinder development in the south and southeast directions. In the southwest, the areas of agriculture will restrict the expansion of the city, particularly the new highway planned in this direction. As a result, future development of urban will continue in the northwestern direction of the city, especially due to the building of American universities and new Sulaymaniyah. However, the 2009 master plan suggested the new CBD in the city northwestern direction. as shown in Figure 6.

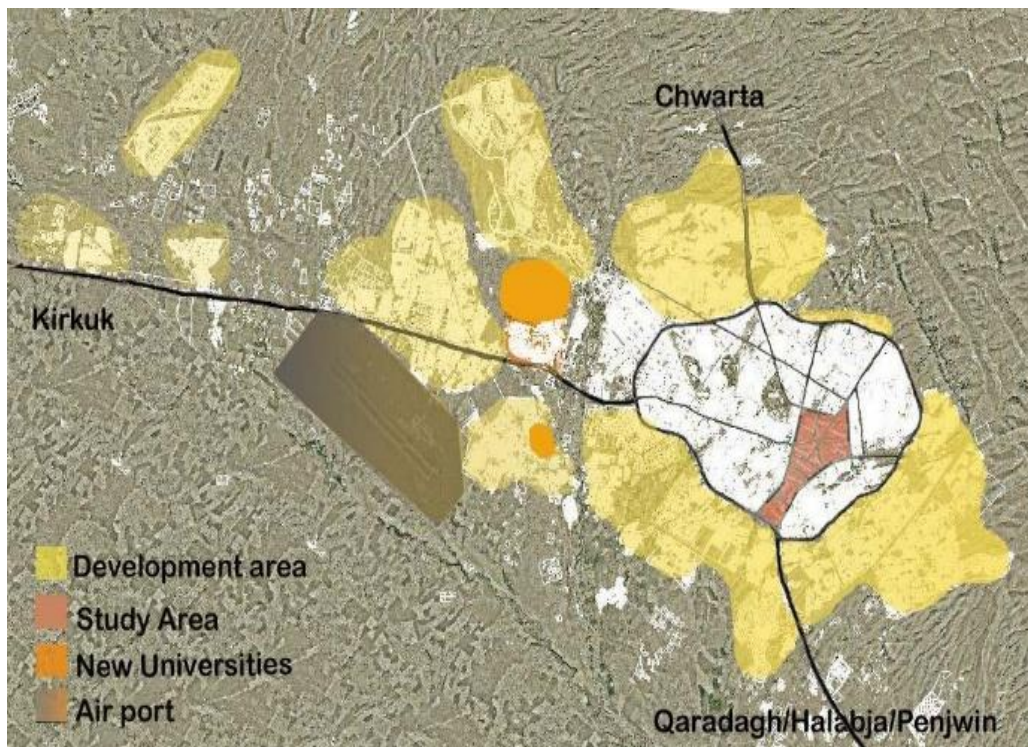


Figure 6. shows Sulaimani city expansion in 2009 source [4]

Applied urban renewal policies on Sulaimanis' Historical parts

There are three types of urban renewal as mentioned in theoretical part including (conservation, redevelopment, and rehabilitation). These policies could be applied on a historical part of Sulaimani in order to respond to economic, social and environmental changes as well as to promote quality of life with respect to preserve cultural and moral issues. This research analyzed a sampled historical place in Sulaimani for each policy. For first policy, which is conservation, the Great Mosque of Sulaimani was taken while in second policy, which is Rehabilitation, the Sara building was taken and to redevelopment policy, the oldest neighborhood, which is Sabunkaran was analyzed.

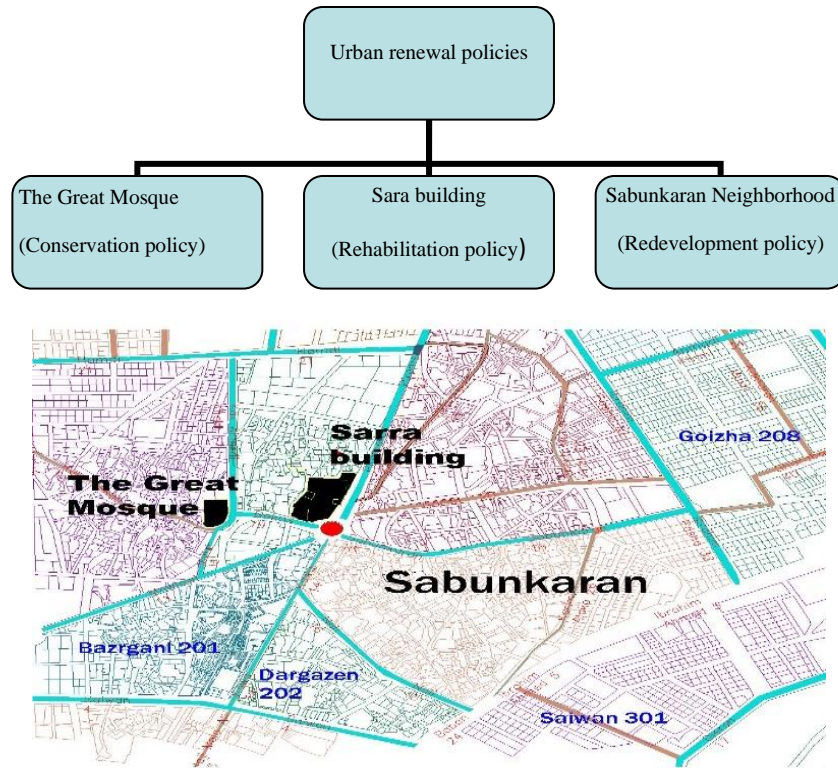


Figure 7. Shows research case study of historical place

1.1.8. The Great Mosque

The (Great Mosque) in Sulaimani which is become a landmark and wide square located in front of the Mosque. This square worked as meeting zone. The Great-Mosque was constructed with the first establishment of Sulaimani. it has visual and functional dominance of old city. in the renovation of this Mosque must be taken into account Conservation policy. For example the architectural detail, materials, and construction. Conservation also has three types as mentioned in the literature. The Great Mosque need maintenance preservation. This building was stored.

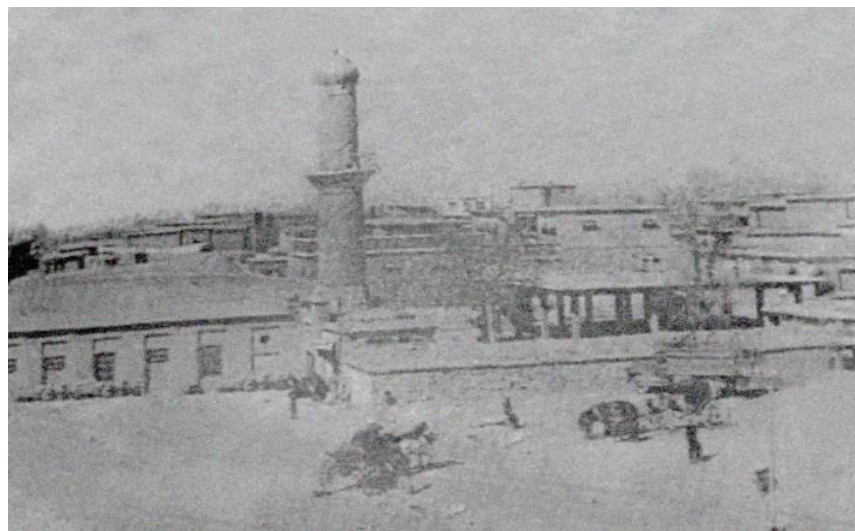


Figure 8. A view of Great Mosque in 1958. (Historical archive).

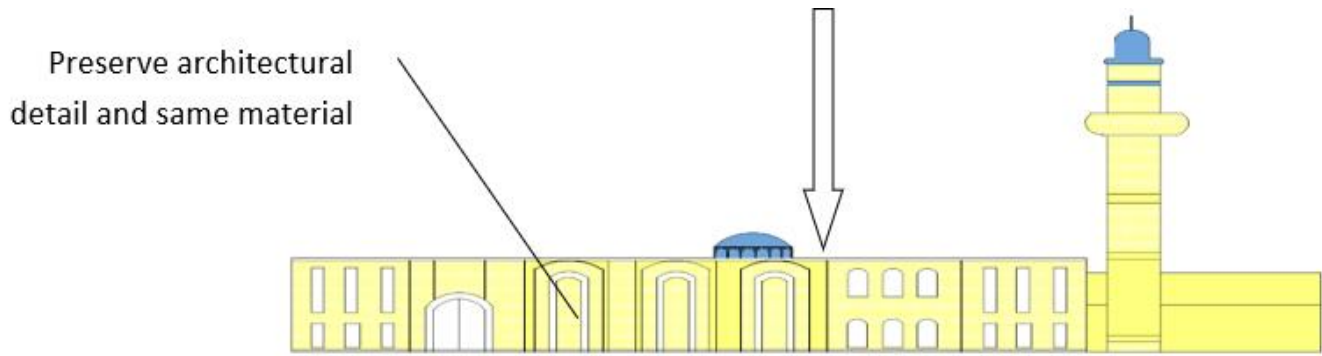


Figure 9. The Great Mosque of Sulaimani (proposed renovation by conservation policy) by researcher

1.1.9. Sara building

From the foundation of Sulaimani city, Dynasty of Baban gathered political and governmental offices in the center of the city. for this reason in 1926-1928 a building was constructed and it was called Sara. There was an open square in front of Sara building its called Bardarky Sara and it was used to different events and gathering. Sara building becomes a landmark to the old city. the important events that happened in Sara are choosing the first Kurdish prince in 1918. Additionally, most of the Kurdish revolutions against dictators happened in Brdarky Sara as well as in 2011 become place to demonstrate peoples' requirement to reform of governmental work. The Sara building had been renovated in recently as a conservation policy in order to store and preserve the historical building, but it still empty building. Consequently, this building needs to rehabilitate again by (rehabilitation policy) because it could be economically and socially in significant. In the past function of this building was administrative building. It could be changed in function to Museum of historical works of government.



Figure 9. The old view of Sara Building



Figure 10 Sara building after renovation by government

1.1.10. Sabunkaran neighborhood

It is one of the oldest parts of the city that surrounded by the residential neighborhoods and supported by the central city part (administrative part). This neighborhood has the poor condition and bad quality of sanitation and life. The policy of redevelopment must be applied in order to provide good quality of life and healthy environment.



Figure 11. Show some old houses in Sabunkaran Neighborhood



Figure 12. Show the plan of Sabunkaran Neighborhood

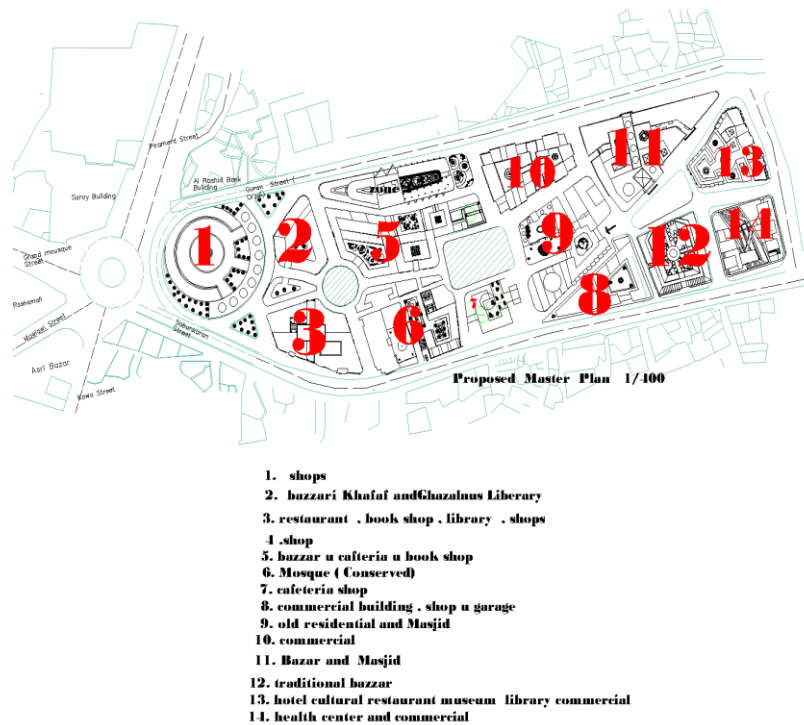


Figure 12. Show the proposed development plan of Sabunkaran Neighborhood

4. Conclusion and Recommendation

The compartments of urban renewal policies which applied to Sulaiman historical are conservation, rehabilitation, and renovation. In order to restore and preserve historical buildings, in addition, the good life quality with social and economic changes was provided. It's necessary for the urban fabric and the planning authenticity and architectural standards of the old cities in a variety of levels to be preserved. The main concern is on the urban renewal approaches. According to conditions like performed practical procedures, determine the complexity and comprehensive of urban renewal in order to define urban renovation policies in expert scientific analysis and field studies.

In addition, compartments of urban renewal policies are selected as conservation, rehabilitation, and redevelopment, based on the practical consideration of urban fabric. This is to maintain aesthetic architectural characteristics, methods of original Constructions and functional of architectural as well as traditional spatial composition and city layout planning to match modern requirements and new progressive in technology, and standards of planning to improve and revive. But mainly to preserve old cities in the modern urban environment. This is because maintenance, restoration, and reconstruction work require conducting many on-site studies, field surveys and scientific examinations in the process of maintenance, restoration or reconstruction. The result of this study shows that the morphological changes of Sulaimani during its foundation in 1784 until today.

Recommendation

- It's necessary to do a data collection on Sulaiman's historical places and regions from all perspective, and enough to be considered when any changes have made.
- most of the Sulaimany neighborhoods need a redevelopment plans to provide good quality of life because of lack of sanitation and standard housing service as well as poor social infrastructures. They are under the standard level of housing.
- one of most historical places is Sulaimany great mosque (its history started from building the city) need to be preserved by the rule of conservation policy.
- even the already renovated historical places (Sara building) as an example, they need to be functions returned for them as they were before.

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