

## Revitalization of the Arab District, Erbil City, Iraq

Nvar Wshar Ali<sup>1</sup> & Azad Ahmad Barzanchi<sup>2</sup>

<sup>1,2</sup>Architecture Department, Faculty of Engineering, Tishk International University, Erbil, Iraq

Correspondence: Nvar Wshar Ali, Tishk International University, Erbil, Iraq.

Email: nvar.jaf@gmail.com

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**Abstract:** This study attempts to analyze the Arab district and its surroundings to point out severe urban issues and concludes a proposal to revitalize the historic district by providing green areas, entertainment activities and using it to connect Erbil citadel and Al-Muzafariyah Minaret by a livable pedestrian route starting and coming down the citadel, going through the alleyways of the Arab district, and crossing over to Minaret. Creating this axis is an attempt to revitalize the observing crescent moon event and advent Eids on Ramadan nights. In this way, people could relive the traditional experience as they walk down the citadel to the Minaret through the Arab district's historical alleyways. This attempt will make the district an attraction spot in Erbil, positively affecting cultural tourism. It provides livability and economic growth for Erbil because revitalizing the Arab district leads to the direct revival of the Erbil citadel and Al-Muzafariyah Minaret. The area physically, economically, and socially will be revitalized.

**Keywords:** The Arab district, Erbil citadel, Al-Muzafariyah Minaret, Revitalization, Historic District, Rehabilitation

### 1. Introduction

Cultural heritage represents the originality and civilization of any community and how far development and creativity have occurred. Arab district has a rich cultural heritage and architecture in its buildings. The Erbil Citadel, which dates back to 6000 BC (Before Christ) (World Monuments Fund, n.d.) and has been included in the UNESCO list of the world heritage site in July 2014 (<https://plus.google.com/+UNESCO>, 2014) and Al-Mudhafariah Minaret built-in (1190-1232) AD (Anno Domini) ("Choli Minaret | Unbelievable Kurdistan - Official Tourism Site of Kurdistan," n.d.). Al-Mudhafariah Minaret was built more than 600 years before the Arab district, and yet the district lies between the citadel and the Minaret. The Arab district is considered one of the essential districts in Erbil city because it is the oldest settlement outside the citadel, as its construction dates back to the period preceding 1846 AD (Akram, Ismail, & Franco, 2016). The Minaret is also called Cholli Minaret, which indicates how the locals perceived it to be far and inaccessible. The purpose of building a 42 meters long minaret far away from the citadel was to look out for any external attacks on the citadel and observe the crescent of Ramadan's month, the advent of Eid al-Fitr, and Eid al-Adha (Aljazeera, n.d.). The Arab district was called 'Yengy Mahala,' meaning the new quarter. The name change came in 1918 when some Arab families, worked as bakers originally from the Qaraaj area southeast Mosul migrated to the district (Akram, Ismail, & Franco, 2016).

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## 2. Methodology

Multiple site visits and the use of Zoom Earth made the studies from October 2020 until May 2021, which includes (Strengths, weaknesses, opportunities, threats, land use, building heights, building conditions, building materials, visual aspects). Analysis like the building categories studies was written depending on the study of (Planning and building regulations for the buffer zone of Erbil citadel in 2013) and several site visits for more precise data. The proposal concludes the studied issues in the district based on the legislation in the area. Erbil citadel's program was taken from the master plan of the Erbil citadel with the assistant of the HCECR (High Commission for Erbil Citadel Revitalization). AutoCAD and Photoshop were also used to edit the plans.

## 3. Study Area

### 3.1 Location

The Erbil citadel lies in the middle of the larger city of Erbil, the capital of the Kurdish regional government in Iraq, Erbil is 350-kilometer Northeast of Baghdad and 80 kilometers Southeast of Mosul. The Arab district is located southwest of Erbil Citadel and has 141,500 m<sup>2</sup>. The district is located in the Buffer zone (A) of Erbil citadel, as shown in figure 1. Buffer zone (A) includes the citadel surrounding Qalat road and the first ring road. This zone is subjected to a higher level of protection because it has high heritage value buildings (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72).



Al-Mudhafariah Minaret; The Arab district, Erbil Citadel

Figure 1: The Arab district is located in the Buffer zone (A) of Erbil citadel, it lies in between the Erbil citadel and the Al-Mudhafariah minaret (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72)

### 3.2 History

Erbil city is one of the oldest continuously inhabited cities globally, dating back to 6,000 years B.C. ("Erbil History," 2017). It has been settled, over the millennia, by the Persians, Greeks, Romans, Mongols, and Ottoman Turks. The Erbil Citadel is located in Erbil's heart, rising between 28 and 32 meters from the plain. The Gradual extension theory of Erbil Citadel was made and developed into its present form. The theory supposes that the citadel was built from earlier settlements; therefore, the

layers slowly rose to the current 32 meters. Its height increased at a speed of 1 meter every 200 years. This theory appears reasonable considering the archeological evidence if one assumes that the citadel date originates from about 6000 years ago (Abbas, 2017). Urbelum appeared in the earlier period of 2300 BC during the Sumerian era, which creates from Sumerian U.R. (city) + Bela (high), meaning the town is located in the upper area. The Sumerians and the Gutians dominated the area around 3000 BC. The Assyrians captured the Erbil and rendered the name Arba'ilu, which means four gods. Ishtar Erbla was an important religious center that included the Temple of Ishtar ("Welcome to the Iraqi Turkmen Human Rights Research Foundation," n.d.). Alexander the Great conquered Erbil in 331 BC. Many architectural developments occurred during the Greek period, particularly by King Salukis citadel. The city was annexed to the Atabeg's reign in Mosul in 1127. Sultan Muzaffar al-Din Gökbürü constructed several buildings in the city, some of which still stand today. The Broken Minaret, which Gökbürü built, is still considered one of the important historical monuments of the region. The city held onto its power under the rule of Mosul Atabegs until 1232. In 1534, the Ottoman Sultan Sulayman completed the conquest of north and central Iraq. Erbil became a part of the Mosul province in the Ottoman Empire until World War I, when the British Empire defeated the Ottomans. Early in the 1920s, Erbil was separated from Kerkuk and made a province of Iraq. In 1991 Erbil was administratively separated from Iraq and ruled by Kurdish parties ("Welcome to the Iraqi Turkmen Human Rights Research Foundation," n.d.). The development and growth of urban fabric in the lower part of the citadel was during the Gökbürü period (Hussein, Mohsen, 1976, pp.246–51). It had observed abundance, steady and safe status (Saleh, 2009, pp. 54–66). The emergence of residential land uses in the lower part of the citadel was not just due to the expansion necessitated by the increase in population and the citadel's compactness but rather an expression of cultural development that society witnessed. Houses, mosques, schools, and public bathrooms or baths were among the urban components that were repeated for the urban expansion of any Islamic city to meet population growth needs. Moreover, there was also immigration from surrounding areas (Abbas, 2017). The Arab district is one of the essential districts in Erbil city because it is the oldest settlement outside the citadel (Akram, Ismail, & Franco, 2016). Arab was a diverse district where multicultural (Arabs, Kurds, Turkmen) and multi-religious (Muslims, Jews, Christians) peacefully co-existed (Akram, Ismail, and Franco, 2016). The multi-religion in the district reflects on the buildings. In one of the alleys, as shown in figure 2, a mosque and a church are built across each other.



Figure 2: Shows a mosque and a church are across each other in the Arab district

## 4. Result and Discussion

### 4.1 SWOT Analysis

SWOT symbolizes strength, weakness, opportunities, and threats. The importance of the SWOT analysis is that it can enhance and improve design and planning. Therefore, it distinguishes the

results of design and stepping towards solutions. It guides determining, designing, and planning strategies in urban areas (Türk n.d.).

#### 4.1.1 Strengths

The Arab district is considered one of the essential districts in Erbil city because it is the oldest settlement outside the citadel. Arab was a diverse district where multicultural and multi-religious peacefully co-existed (Akram, Ismail, and Franco, 2016). It has high-quality heritage, heritage, and vernacular buildings identified by UNESCO (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72). The district is located in the city center, a vibrant area surrounded by commercial shops and the Qaysari market, where the locals and tourists visit. It has a view of the Erbil citadel, one of the oldest settlements in the world, which dates back to 6000 years.

#### 4.1.2 Weaknesses

Negligence of Erbil citadel's surroundings directly affects the importance of the citadel itself and the city center. Although the historical district, Arab, lies in-between the Erbil citadel and Al-Mudhafariah Minaret, there is no connection between the three heritage sites. Maybe Al-Mudhafariah Minaret is right across the Arab district, but the poor accessibility between the two sites made them look far from each other. The three ancient sites are unconnected, therefore unreachable, which has negatively affected the area's livability and caused the sites' negligence. Even though the district has a very strategic location, the inner district's historical alleyways are not walkable and unattractive, resulting in total neglect of the district as it is empty, as shown in figure 3. People are not feeling comfortable and safe walking through them. The area is not being used at night due to the abandonment of the district. Urban furniture is of the most potent factors in urban spaces in the minds of residents and tourists; they remember different city regions with their beauty and furniture. It is considered part of the aesthetic values and elements related to its identity (Dadghostar & Zandmoghadam, 2016). The Arab district's characteristics and urban furniture's type, diversity, kind, placement, lack of identity, and integration with the environment. Some of the visual pollution in the district consist of color and light pollutions. It gets very dark in the district as no light serves the paths and alleyways. The concrete walls built on the district's arterials on Shexi Cholli street cause unpleasant sights and block the district's ways. The dominance promotion tags result in crowded and messy elevations without consideration of the proper installation site, as mentioned in the regulations for the buffer zone (A) (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72). Heterogeneity in the materials regardless of the legislations and awareness of the historical identity of the city center. Urban problems have led to extreme urban decay that threatens the city center's identity, history, and inherited heritage. It owns several heritage buildings, but there are no tourist activities as there are no nodes in the inner district, which strongly affected the district's negligence.



Figure 3: the paths and alleyways are not walkable, unsafe and unattractive

### 4.1.3 Opportunities

Creating a pedestrian route from the citadel through the Arab district to reach the minaret, so the three sites are connected, people could relive the traditional experience as they walk down the citadel to the minaret through the Arab district's historical alleyways. Preserve and conserve high-quality buildings to increase cultural tourism and create nodes around heritage buildings. Reusing the buildings helps preserve cultural heritage and redesign facades of certain buildings on the district's edges according to legislation. The district's open spaces could be restored through interconnectivity and alliance with city culture and heritage makes such an area an essential spot in Erbil. The neglected alleys will make populated areas that preserve heritage if it introduces various activities to attract tourists and remodel the regenerating areas, as shown in figure (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72), to family-friendly cafes and shops. Therefore, organizing and changing the urban landscapes, including placing suitable urban furniture, gives identity to the city center. Removing the elements and remodeling the areas that have caused visual pollution can visually bring about an exciting space and build a sense of belonging for the locals. It also plays an essential and decisive role in giving integrity to the city center and cultural tourism. It is crucial to raise awareness and knowledge of the value of the heritage for the local community to help them know their role and duty in the protection of their heritage. Practical lessons such as training centers in the district, presenting new members of the society knowledge about its heritage, and teaching the skills required to adapt their expertise for the tourism sector are all the needs in improving and conserving the heritage. The district's alleyways are narrow, and a parked car needs at least ten times more area than a bicycle and three times more area than public transport. Therefore, turning the district into a car-free and pedestrian-friendly neighborhood reduces the air and sound pollution in the city center and restores the alleyways, providing livability and economic growth. The area will revitalize physically, economically, and socially; in this way, the district becomes an attraction spot in Erbil, positively affecting cultural tourism.



Figure 4: Regeneration areas (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72)

### 4.1.4 Threats

Cultural heritage must remain related to culture and be constantly trained and studied within societies and between generations to be preserved. It is essential to protect historic areas to ensure cultural heritage transmits from one generation. Urban problems in the Arab district have led to extreme urban decay, as shown in figure 5, threatening the city center's identity, history, and inherited heritage. Its high-quality heritage buildings have been torn down and ignored. Its heritages are in danger & its open spaces are used as parking lots. The new commercial buildings on Sultan Mudhafer, Bata, and Shexi Cholli streets have caused visual pollution, threatening Erbil's identity. These historic buildings could be destroyed and neglected if the district is developed recklessly. Furthermore, it could negatively

affect the socio-economic development in the area, its environment, and the whole nation. The derelict houses and vacant lands are turned into parking lots, cars, and parking and car-dominated the district. Therefore, it has led the Arab district to lose its unique identity and turn into a service district that negatively affects its livability. Sustainable and livable places would thus have higher shares of lower average speeds, active transport, and more green areas. Green spaces and active transport positively impact mental health (Dadvand et al., 2016). Cars also contribute to more noise and air pollution than other transport modes.



Figure 5: Extreme urban decay that threatens the city center identity

#### 4.2 Land Use Analysis

With the rapid population growth, changing lifestyles, economic development, and expanding needs of the people, the Arab district has faced difficulties in making the needed improvement and adaptation to the present conditions and developments. Even though the district has a very strategic location, it is in the city center and surrounded by commercial shops. However, the inner district is left empty due to the existing land use; as shown in figure 6, a significant ratio of the land is used as residential houses that are no longer in use and made the district abandoned. Furthermore, the district lacks green and entertaining areas, which negatively affects the livability in the area.

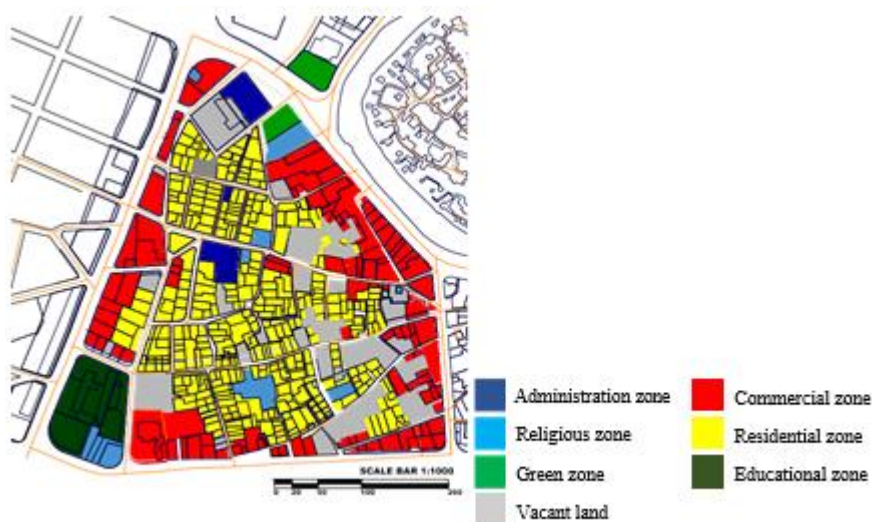


Figure 6: Arab District map shows land use

### 4.3 Building Material

The buildings in the Arab District are made of brick, as shown in figure 7, wooden doors, and decorative windows which were similar to historical periods and different stages, like the Sumerian, Babylonian, Assyrian, Islamic and Sassanid eras (Akram, Ismail, & Franco, 2016). The buildings are located in the urban corridors. These buildings are located by the keyring roads and radial roads, which are identified by the obligation of the interface between area key road and a low-density residential area (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72). These buildings are mostly built with concrete blocks, and their facade is covered with brick. According to the legislation, white plaster covers some other buildings, which is also acceptable. Some commercial buildings on Sultan Mudhafer and Shexi Choli's street have used certain building materials like Aluminum composite panels, and granite tiles are not permitted according to the building legislations (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72).

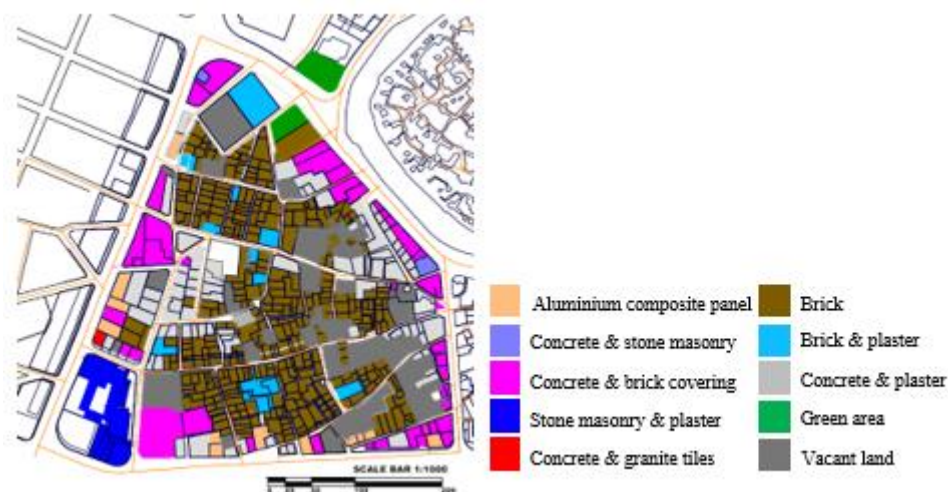


Figure 7: Arab District map shows buildings with different types of materials

### 4.4 Building Condition

Cultural heritage must remain connected to culture and be commonly practiced and learned within communities and between generations to be kept alive. It is essential to protect historic areas to ensure cultural heritage transmits from one generation. Most of the buildings in the Arab district are in bad conditions; as shown in figure 8, they are in states of decay. Due to the existing land use, vacant lands increase due to the collapse of the buildings in the district. It needs urgent actions to save these buildings because old buildings have intrinsic values.



Figure 8: Arab District map shows the building condition

#### 4.5 Visual Aspect Analysis

Every city has a public image that overlaps many individual images. The relationship between the environment and the people occurs by perception. Perception occurs by keeping essential or attractive elements, and it causes an image related to the city's environment. Cities are seen visually and are known and remembered with the impressions of their image elements on people (Atik, Çakir, & Benian, 2009). The city images contents can be categorized into five elements that are preferable to physical forms: paths, edges, districts, nodes, and landmarks. These five elements limit themselves to the effects of perceptible, physical objects, the history, function, social meaning of area history, or even its name influence imageabilities (Lynch, n.d., pp. 46–91).

##### 4.5.1 Mental Map

An environmental image has three elements: an identity that recognizes urban elements as separate items, a structure to relate urban elements to other things and the observer, and the meaning of functional and emotional value. Urban residents should form their own stories actively and create new activities (Lynch, n.d., pp. 46–91). People should be able to learn how to orient themselves in this environment. To obtain a vivid mental map of their surrounding urban environment, and must be able to guide and move according to their environment. A definitive mental map gives people a strong sense of emotional security. It is an element for conceptual organization, and communication enhances the depth of the everyday human experience (Lynch, n.d., pp. 46–91). The mental map is an essential factor in revitalizing the district by creating an unforgettable image of the inner district in the visitor's mind. There are elements in the Arab district that are unique and can produce a striking image in the visitor's mind but an image of destruction. Therefore, it is required to analyze and study these elements to step towards solutions and improve planning. The current mental map of the inner district would be torn-down houses and neglected alleyways that nobody wants to return or visit.

##### 4.5.2 Path

Observers occasionally, customarily, potentially move along channels that are called paths. People perceive the city while moving through it. Along these paths, environmental elements are arranged (Lynch, n.d., pp. 46–91). Based on the studies of Lynch, paths were the primary city elements for most of the people interviewed. Some of the things that caught people's minds were some activity along a



street; distinct spatial qualities could strengthen the image of specific paths. Unique facade characteristics were also essential for path identity. Some others qualities that gave importance to single paths were a significant amount of planting ((Lynch, n.d., pp. 46–91). The paths of the Arab district have a distinct spatial quality. The narrow width of the streets stays in the observer's mind. Visitors can observe unique facade characteristics that have been torn down. There are no activities in the inner district's historical alleyways or vegetation to distract the users, which can easily get lost. The paths are not walkable and unattractive; visitors observe urban elements that lack identity and integration with the environment. The paths are neglected surrounded by damaged buildings making people not walk down the paths. The district is empty and abandoned. People are not feeling comfortable and safe walking through them. Some of the alleyways that link the district to Bata street are dominated by men and not family-friendly.

#### **4.5.3 Edges**

Edges are usually defined by the boundaries between two kinds of places, and they act as indirect references, a border that extends the image could be drawn and described in great detail. Edges can also have directional qualities (Lynch, n.d., pp. 46–91). The walls of Erbil citadel and its mound are considered an edge for the district. The mound that sits under the Erbil citadel and its walls are boundaries that strengthen the observer's image and fascinate them to describe the view in great detail because it is not random to see a mound in the city center. Therefore, it can also be used as finding direction. While continuity and visibility are significant, firm edges are not necessarily obstructed. The edges of the Arab district are uniting joint rather than isolating barriers as it is located in the city center and assembles everything to itself.

#### **4.5.4 District**

Districts are the nearly large city areas where the observer can mentally go inside and have typical characteristics. They can be identified inside and irregularly used as an external source as a person goes by them (Lynch, n.d., pp. 46–91). The district has experienced problems adjusting to the present needs and changes because land-use changes and districts are redeveloped. This redevelopment should not destruct the distinctiveness of the place. It is essential to conserve the built heritage while not damaging the impalpable values to keep a strong continuity with the past (Boussaa, 2017). The Arab district faces severe urban problems that threaten the city's history. The district's most serious problem is that the inner district is abandoned, and its historic buildings are deteriorating. Historic urban centers create an urban identity for the rest of a city and the adjacent districts and play an essential role in improving the city's identity and memory. The new building built in the Arab district should integrate and respect the local historic environment. Therefore, conservation of cultural heritage and the development of newly built structures respecting the old can help reinforce a city's uniqueness.

#### **4.5.5 Node and Landmark**

Nodes are the strategic centers the observer can enter, typically either intersection of paths or gatherings of some characteristic. They may be large squares or even entire central districts, but they are minor points in the city image. A place of a break in transportation, the intersection, has captivating value for the city observer as decisions must be made at intersections. People heighten their attention to such places and observe nearby elements with more detail (Lynch, n.d., pp. 46–91). Even though the Arab is a historic district, no tourist activities could be seen; there are no nodes in the inner district, as shown in Figure 7, which strongly affected the district's negligence. Some areas, including the traffic

intersections, are considered a node in the district, like the public gardens next to Erbil regional council building and Erbil governorate building. The Kotri Salam status is also considered a node. Landmarks are different types of point reference; they are external the observer does not enter within them. Landmarks can be seen from many distances and angles; they symbolize a constant direction for all practical purposes within the city. Other landmarks are local, visible only from specific approaches and places. They have regularly used leads or signs of identity and structure (Lynch, n.d., pp. 46–91). The landmarks of the Arab district are shown in Figure 9. Erbil Citadel is considered an essential landmark that could be seen from great distances and angles. Some other landmarks are the Qaysari market, Sultan Mudhafer shrine, Erbil regional council building, the governorate building, Kotri Salam statue, and a known tea shop called Qardaran. There are also essential landmarks in the inner district. They are considered high-quality heritage buildings, like the Swary Qishla, built at the end of the 19th century (“Erbil (Swary) Qishla • قشله‌ی هه‌ولێر/سواری” n.d.). However, they are ignored and neglected which these landmarks could have been used for tourist attractions and revived the area.

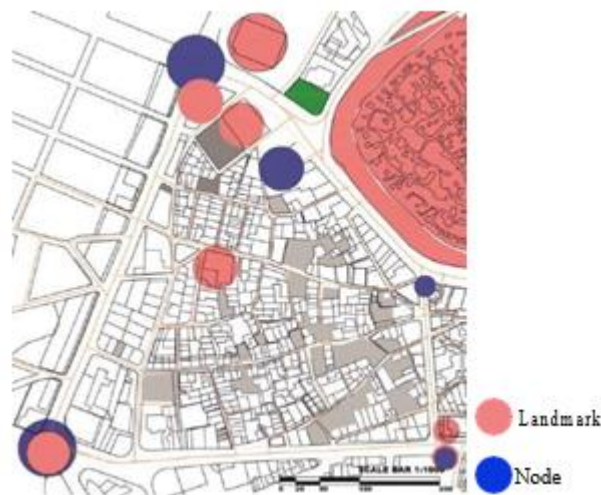


Figure 9: Nodes and landmarks of the Arab district

#### 4.6 Building Categories

The building categories in the Arab district are identified as high-quality heritage buildings, heritage, vernacular, derelict, new and contrast buildings (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72), as shown in figure 10. Due to the legislations of the buffer zone, the high-quality heritage buildings are buildings with architectural features, cultural importance, and structures of particular heritage interest. The buildings represent prominent typological and architectural features like the composition and volume of the facade, materials, decoration, and building techniques. They determine a proper degree of originality and nobility, disregard of its condition of repair. However, these buildings are not preserved and are left empty. Eventually, they become derelict buildings and later used as parking lots. Heritage buildings are Buildings with heritage concern, whose architectural features and typology still determine a high degree of local architecture traditions, despite their state of repair. The vernacular buildings have the typology of courtyard houses, and their architectural features reflect the traditions of the historic architecture and match with its surrounding urban pattern. It does not cause any disruption in the built fabric. Derelict buildings have the typology of courtyard houses, and their architectural features reflect the traditions of the historic architecture and match with its surrounding urban pattern. It does not cause any disruption in the built fabric. Modern buildings are

Buildings constructed after the Ottoman Empire was built with new techniques materials. They have artistic and historical value and can be considered as heritage. They may have heritage values. The typologies identified among the modern buildings are the International style, ordinary and contemporary buildings. The International style buildings from the first half of the 20th century react to the International style code. These buildings are recognized by flat roof rectangular forms lacking ornamentation and decorative details, strip windows, flat wall surface, and cantilevered projections. Ordinary buildings are buildings displaying typical characteristics of Middle East modern architecture, such as balconies, rough wall surfaces, and arched openings. They were built from the second half of the 20th century to the 80s. These buildings match their surrounding urban pattern and do not disrupt the built fabric. Contemporary buildings are recently built with no aesthetic or architectural value as they are covered with aluminum panels (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72). Building in contrast; are buildings whose architectural features and typological are in contrast with the traditional and historic architecture and do not match with their environment and urban pattern, causing visual pollution of the historic urban fabric (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72). Some of the commercial buildings on Sultan Mudhafer and Shexi Choli's street.



Figure 10: Arab district map shows the building categories

#### 4.7 Population

Population Density of the Arab District Based on an ancient map dated back to 1916, which describes the ancient city of Erbil, the population density at the time of the Arab District was more than Tajeel and Khanqah Districts (Akram, Ismail, & Franco, 2016). According to the statistical population of Erbil in 1947, the population of the Arab District was 5644 people. As the 1957's census showed, the population of the Arab District increased to 6850 people. The number of Muslims by the previous census was 6544 Muslims & 294 Christian. The population of the Arab district in the census of 1977 was 21290 people, and in 1984 was 26 399 people. The last census of the Arab District shows around 1975 inhabitants in 2015, being around 500 houses, as shown in Table 1 (Akram, Ismail, & Franco, 2016). According to the authority's information in the Arab district, in December 2020, only about 50 houses were occupied out of 488 houses, as shown in table 2. The remaining families are in poor financial status. Otherwise, they would leave the district (Osama, 2020).

Table 1: The census of population density population (Akram, Ismail and Franco, 2016)

Year	People
1947	5644
1957	6850 (6544 Muslim & 294 Christian)
1977	21290
1984	26399
2015	1975

Table 2: Population and buildings in the Arab district in 2020 (Osama, 2020).

The Arab District	Variable
Population	230
Number of houses in the district	488
Number of empty houses	438
Average of population in one family	5

The mentioned urban problems and the development in nature of urban life as the changes in the needs of the people resulted in a dramatic decrease in the district population, left the district empty, as shown in Figure 11. Therefore, the historic district's function and the program should be changed to target tourists and serve cultural tourism.

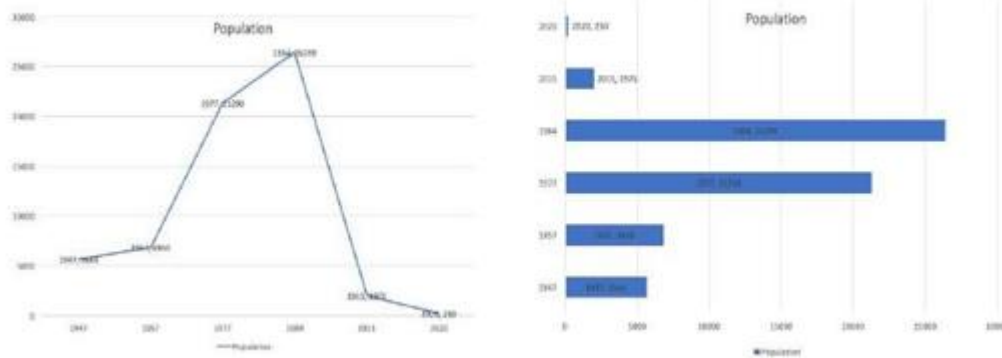


Figure 11: Shows the district's population was at its peak in 1984 and dramatically decreased in the later years (Akram, Ismail and Franco, 2016) (Osama, 2020).

#### 4.8 Building Height

As shown in Figure 12, the building heights in the inner district are up to two floors. The maximum height of a building is four-story (15 meters) at the urban corridor, one area (Sultan Mudafar and Shexi Cholli street), and three floors at the remodeling areas (Qalat and Bata street) (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72). Some of the building heights are against the legislation of the buffer zone (A).



Figure 12: Arab district map showing the building heights

## 5. Legislation

The district is located in Erbil citadel's Buffer zone (A). Buffer zone (A) includes the citadel surrounding, Qalat road and the first ring road. This zone has high heritage value buildings and is subjected to a higher level of protection. The buildings in the buffer zone are subjected to a homogeneous set of types and conditions, as shown in table 3, and written in detail at Planning and Building Regulations for the Buffer Zone of Erbil Citadel (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72). When communities try to improve the local heritage without regulations and help from experts, it could simply destroy the site and diminish cultural heritage values. Therefore, it is necessary to cooperate between government officials and specific legislations of the buffer zone of Erbil city.

Table 3: Building types and interventions (UNESCO, HCECR, &amp; Erbil Governorate, 2013, pp. 4–72).

Intervention	Building type
Conservation/Restoration	High-quality heritage buildings
Restoration/Rehabilitation	Heritage buildings and vernacular buildings
Reconstruction	Derelict vernacular or heritage buildings if there are sufficient traces of the architectonic evidence.
New building in historic areas	Derelict vernacular or heritage buildings when reconstruction is not possible.
New building	Modern buildings, no heritage values, buildings in contrast with its surrounding, and to vacant lands
Refurbishment	Modern buildings not in contrast with the context
Harmonization	Contrast building
Demolition without reconstruction	Existing derelict or contrast building. (The land can be made available only for public purpose, including new landscape arrangement, parking or improvement of urban infrastructure).

## 6. Proposal

Understanding and analyzing the site's rich history, problems and studying similar examples give an idea or a concept on how to deal with the historical district and who to target as the users for the site. The idea is to preserve the past to influence visitors and tourist experience and visualize the history by walking through the district. This attempt is achieved by conserving and rehabilitating the district, adaptive reuse of certain buildings to traditional cafés, restaurants, shops, and crafts centers. The neglected alleys will make populated areas that preserve heritage if it activates with various activities such as shopping relaxation, meetings, and celebrations; this will also secure the alleyways and make them attractive. The building types in conservation areas in the Arab district map are shown in Figure 13. The interventions for the building types are shown in Table 4, including the building numbers and their areas.



Figure 13: Arab District map showing conservation area

Table 4: Conservation area buildings types and intervention

Building type & Intervention	No. of building	Area
High-quality conservation buildings (Conservation / Restoration)	20	5,000 m <sup>2</sup>
Heritage buildings (Restoration/ Rehabilitation)	34	7,000 m <sup>2</sup>
Vernacular building (Restoration/ Rehabilitation)	144	28,000 m <sup>2</sup>

- Conservation intervention is applied to high-quality heritage buildings. It aims to preserve and restore the architectural features and typological of the building regarding the original materials and all the historical additions and alterations. No destruction, removal, or alteration is permitted in any form. Only minimal changes are allowed to store sufficient kitchens, toilets and adapt to modern living standards and new uses (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72).
- Restoration / Rehabilitation is applied to heritage and vernacular buildings. Interventions in these buildings are similar to conservation interventions. The difference is that restoration/rehabilitation interventions are broader, with opportunities to change the existing structures to modern living standards like the internal opening of doors to combine adjacent rooms or buildings of various plots is allowed. No alteration is allowed in the building, which changes the characteristics of the building like the layout of volumes, including alignments, building heights, architectural elements, and facade style. Alteration in the openings, type and shape, facade decoration, and finishing is also prohibited. This type of intervention aims at rehabilitating buildings to the new uses or previous ones (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72). Other buildings require different interventions, as shown in figure 14 and Table 5.

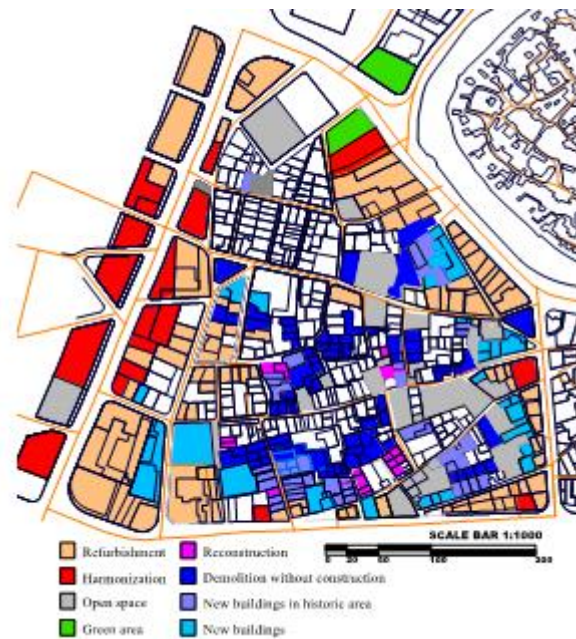


Figure 14: Arab District map showing different interventions

Table 5: Intervention areas

Intervention	No. of building	Area
Refurbishment	88	19,000 m <sup>2</sup>
Harmonization	20	10,000 m <sup>2</sup>
Reconstruction	6	2,000 m <sup>2</sup>
New building in historic areas	31	6,500 m <sup>2</sup>
New building	35	10,000 m <sup>2</sup>
Demolition without reconstruction	61	12,000 m <sup>2</sup>

- Reconstruction intervention is applied to derelict vernacular and derelict heritage buildings only of a total loss would distribute the traditional urban fabric. There should be adequate architectonic and archeological evidence or documentation (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72).
- When reconstruction is impossible, the intervention of new buildings in historic areas is applied to derelict heritage and vernacular buildings. This intervention is also used to vacant land in historic areas and modern buildings. Modern buildings have no architectural importance nor inadequate evidence of architectonic, archeological traces, and documentation. This intervention is also used to vacant land in historic areas and modern buildings of no architectural importance (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72).
- Refurbishment intervention is used in modern buildings, not in contrast with the environment.



- New Building intervention is used to modern buildings of no heritage values, vacant lands, and buildings in contrast with the environment (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72).
- Harmonization intervention is used to contrast buildings (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72).
- Demolition without reconstruction intervention applies to contrast buildings and existing derelict buildings (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72).

It is acknowledged that reusing heritage buildings have environmental sustainability benefits. Conserving heritage buildings reduces energy usage and distribution of waste, destruction, and construction. Therefore, it encourages sustainable development by preserving the energy in the existing buildings. Cultural heritage is threatened by environmental destruction and climate change, socioeconomic forces, and urbanization development. Erbil citadel's program was taken from the master plan of the Erbil citadel with the assistant of the HCECR (High Commission for Erbil Citadel Revitalization), which includes the adaptive reuse of the buildings. It is essential to preserve the identity of these high-quality heritage buildings, heritage buildings, and vernacular buildings. High-quality heritage buildings can be made available for former or new uses. Heritage and vernacular buildings can be used for previous uses or new uses. The buildings identified for adaptive reuse are shown on the Arab district map in Figure 15, and the number of the buildings is shown in table 6, including their total areas.



Figure 15: Arab District map showing Adaptive reuse area

Table 6: Adaptive reuses

Number of building	Area
151	23,000 m <sup>2</sup>

Essential significant regions where revitalization works are applied are pedestrian spaces to organize a walk, open spaces, and greenery to give life to the neglected district again. Reforming the district's open spaces through interconnectivity and integration with city culture and heritage shall make the

area a significant destination. Instead of parking vehicles, these areas shall provide economic, social, and cultural activities that strengthen the relationship between its people, city, culture, and heritage, giving joy and excitement hosting various events that will revitalize its economy. Turn the district's derelict buildings and car parking areas that have made the alleys disconnected and inaccessible into green and entertainment areas, as shown in Figure 16 and Table 7, connecting the district and creating nodes.

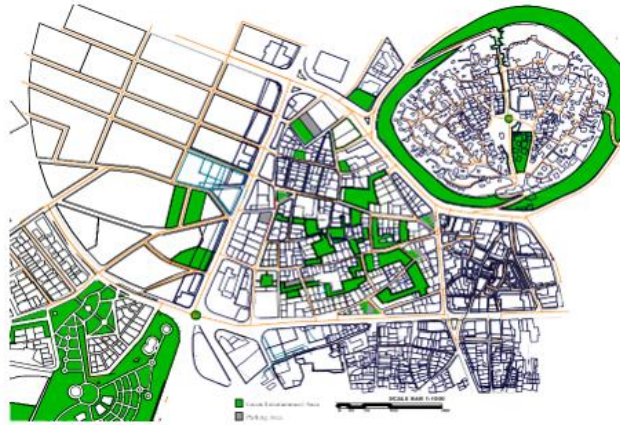


Figure 16: The Arab District map & its surrounding areas showing open space

Table 7: Open spaces area

Open spaces	Quantity	Area
Green/Entertainment areas in the Arab district	20	20,600 m <sup>2</sup>
Green areas surrounding the Arab district	6	14,000 m <sup>2</sup>
Parking lots	8	6,000 m <sup>2</sup>

Green spaces also help decrease air and sound pollutions in the city center. Therefore, some areas should be redesigned, as shown in Figure 17. The number of the redesigning zones is mentioned in Table 8, including their total areas.



Figure 17: Arab District map & its surrounding areas showing Re-designing Areas

Table 8: Re-designing area

Number of redesigning area	Area
14	75,000 m <sup>2</sup>

In terms of history; Sultan Mudhafar Gökböri, who built the Al-Mudhafariah Minaret (“IRAQ – General Assessment of Minaret Choli, Erbil” n.d.), was the first Muslim ruler to publicly celebrate the birth of the Prophet Muhammad (PBUH) in an impressive ceremony in Erbil city (Coeli & Adam, 2014). Therefore, attempts to give life and revitalize the historical district by connecting the Erbil citadel and Al-Mudhafariah Minaret by a livable and walkable pedestrian route starting and coming down the citadel, going through the alleyways of the Arab district, and crossing over to Minaret. Opening a new pedestrian route to reach the Minaret easily when crossing the intersection in this way, the three sites can be easily accessible and connected. Creating this axis is also an attempt to revitalize observing the month's crescent and advent Eids in Ramadan nights on the Cholli minaret. The purpose is to make the district an attraction spot in Erbil, positively affecting cultural tourism. In this way, people could relive the traditional experience as they walk down the citadel to the Minaret through the Arab district's historical alleyways, representing the nation's memory and aiming to connect the past with the future. It provides livability and economic growth for Erbil because it leads to the direct revival of the Erbil citadel and Al-Mudhafariah Minaret. The area physically, economically, and socially will be revitalized. Architects, urban planners, the Erbil governate, and UNESCO benefit from these analyses, data, and proposals to step towards solutions and revitalize the historic district. The data and proposals can be used for further insights and development. Many designs can be proposed to solve the mentioned urban issues, such as; suitable land use for the district, landscape design, pedestrian and car flow, and street designs. Designs for façade and elevations of the buildings located on Sultan Mudafar, Shexi Cholli, and Bata Street can also be proposed to step towards solutions. Cities take their identities from cultural continuity and history. Revitalization plays an essential role in maintaining this continuity. The nation's consciousness will introduce many ideas and activities throughout the district regarding arts and crafts, traditional festivities, and fairs. Tourists need to be sensitized to the historic environment and cultural factors. Renovating and preserving the city's environment and the image will introduce activities into the district and urban life to connect cultural heritage.

## 7. Conclusion

This study aimed to point out severe urban problems of the Arab district by several analyses. The study shows that the historic district has a rich cultural heritage and architecture (UNESCO, HCECR, & Erbil Governorate, 2013, pp. 4–72). The inherited heritages are currently suffering from deterioration and decay due to the existing land use, resulting in total neglect of the historic district. These heritage buildings could have been used for tourist attractions and presenting the city's identity to revive the area. However, there are no tourist activities and no nodes in the inner district, which strongly affected the district's negligence. The open spaces are used as parking lots, and the historic district has turned into a service district. The paths and alleyways are not walkable, unsafe, and unattractive. Its elements and urban furniture are types, diversity, kind, placement, lack of identity, and integration with the environment. The new buildings, which are built-in in contrast with their surrounding environment, threaten the city's identity. These urban problems and the development in nature of urban life as the changes in the needs of the people resulted in a dramatic decrease in the district population and left

the district empty. Arab district has faced difficulties in making the needed improvement and adaptation to the present needs and developments. Therefore, the historic district's land use should target tourists and serve cultural tourism. After understanding the issues, a proposal is given to revitalize the historic district. Preserve the historic buildings to influence visitors and tourists to visualize the history by walking through the district. This attempt is achieved by conserving and rehabilitating the district, adaptive reuse of certain buildings to traditional cafés, restaurants, shops, and crafts centers. The neglected alleys will make populated areas that preserve heritage if it activates various activities. The proposal includes reforming the district's derelict buildings and car parking areas that have made the alleys disconnected and inaccessible into green and entertainment areas. The aim is to give life and revitalize the historical district by connecting the Erbil citadel and Al-Mudhafariah Minaret by a livable and walkable pedestrian route starting and coming down the citadel, going through the alleyways of the Arab district, and crossing over to Minaret. Opening a new pedestrian route to reach the Minaret easily when crossing the intersection in this way, the three sites can be easily accessible and connected. In this way, people could relive the traditional experience as they walk down the citadel to the Minaret through the Arab district's historical alleyways, representing the nation's memory and aiming to connect the past with the future. Architects, urban planners, the Erbil governorate, and UNESCO benefit from these analyses, data, and proposals to step towards solutions and revitalize the historic district. The data and proposals can be used for further insights and development. Many designs can be proposed to solve the mentioned urban issues, such as; suitable land use for the district, landscape design, pedestrian and car flow, and street designs. Designs for the façade and elevations of the buildings located on Sultan Mudafar, Shexi Cholli, and Bata street can also be proposed to step towards solutions.

Declarations and ethics statements:

Availability of data and material: The data that support the findings of this study are available on request from the corresponding author.

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