

## Distortion of Local Architecture Identity

### A comparative study for the rebuilding process of the buildings on Sabunkaran street

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#### Abstract



The historic urban regions and architecture are more than mere materials remained, they are central to how the community see themselves and their architecture identity as individuals, communities and as a nation. In a transient and rapidly changing world, interests are in; "What the local identity of the community architecture is? and how the original identity of the local architecture could be kept during the new rebuilding process in the historic and old regions of the city?" Architecture identity is therefore; an inheritance that helps to define the future architecture by inspiring new ideas and providing solutions to the problems that the community face in the age of globalisation. In this way, historic and old urban regions of the city greatly show the original architecture identity which helps the community to distinguish their architecture from others.

This paper studies the distortion of local architecture identity on Sabunkaran Street as a part of the old region and city centre in Sulaimaneyah city in means of style, building materials and architectural elements as a result of the new rebuilding process. The distortion of building materials, styles and elements for the new rebuilt process are compared to the context of the region without subcategorizing each part to specific items. This paper makes a comparative study for the architecture on Sabunkaran Street to show how the local architecture identity of the old region has the risk of distortion as a result of the new rebuilding process done in the last decades. This study aims to keep the local architecture identity of the old urban regions to show the future generations their original architecture identity. The study hypothesises that; new rebuilding process achieved by the individual owners in old urban spots lead to the distortion of local architecture identity if it is not monitored by specialized local authorities.

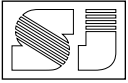
**Keywords:** identity, local architecture, local architecture identity, distortion.

#### 1. Introduction

From the multi valued definitions and tasks of architecture, it could be inferred that, the purpose of architecture is to reveal a unique situation which has never been experienced before and broaden the feelings, thoughts and imagination of human beings (Abdullah, 2012, P. 37). Considering that the concepts of identity and uniqueness are close enough to be used for the same meaning, the main purpose of architecture can be defined as designing a building which has a certain identity. At the same time identity is an answer to the question of who or what is a human or any other valued entity such as architecture. Therefore, identity is related to originality of cultural and social entities of human beings. This in turn shows that cultural entities reflect the interactions between people and their natural environment over space and time. They are a complex phenomenon with a tangible and an intangible identity. Human societies use their own peculiar forms and styles in the production of art, architecture, environment and have their own ways, methods and means of expressing their feelings or aspirations. Architecture, therefore, could be considered as a part of the non-verbal system of symbols that influence human life; transmitted and shared, these symbols express cultural values, images and beliefs, that produce a sense of social unity and security leading to a feeling of identification of the inhabitant with the environment. Thus, there exists a close relationship between architecture and society through identity. (Tran, 2012, P.3)

Regarding architecture, it is clear that architecture possesses a single identity which remains consistent over time. This notion can be recognised within conventional areas of architectural design, heritage preservation, history and forms of architectural literature





which approach the meaning or value of architecture in static terms. Architecture possesses the capability to reflect the essence of a time and a place like no other artefact. It does not only embody the collective cultural values of the society that made it possible, but also palpably manifests the society's creative response to environmental imperatives, the ecological milieu, power structures, and material deprivation (De Lara, 2016, P.25). Such crucial depictions of the built environment tend to view architectural identity as a physically defined construct; they often privilege and rely on the designer's concepts to define a building; and articulate architectural history as a continuous narrative outlining the historical improvement of built form across time. As such, these traditional ideas and representations of architecture conceptualise and represent architectural identity as an immutable and historically stable entity (Connolly, 1991, P.62).

An important issue that is related and sometimes has conflicts with architecture identity is rebuilding process of historical and old urban regions as such parts of cities have cultural, historical and national importance. Any rebuilding process in historical and old urban spots must be done according to special architectural and historical conservation process to avoid any distortion of the architecture identity of the region known as local identity (Jones, 2006, P. 549-565).

Rebuilding process in this study includes any change to the original buildings of the study region such as totally changing process to the old buildings that include demolishing old buildings and building another building in its place and changing a part of buildings such as addition of new building materials or architectural elements for the facades of buildings.

## 2. Identity

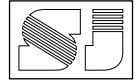
The concept of identity is multidimensional in many ways, to define one's identity is to consider the originality of the object; it is to find the elements that make objects different from each other; in other words, what makes them unique. In any case, identity always consists in a set of elements, thus it is a complex concept. According to William Connolly; identity is established in relation to a series of differences that have become socially recognized. These differences are essential to its being. If they did not coexist as differences, it would not exist in its distinctness and solidarity. Identity requires difference in order to be, and it converts difference into otherness in order to secure its own self-certainty

(Connolly, 1991, P.64). Charles Correa (1983) defines identity as a process, and not a found object. He asserts that our search for identity could give us a much greater sensitivity not only to our environment, but to ourselves and to the society in which we live (Correa, 1983, P.10). Castells (2004) shows that, the construction of identities is fundamental to the dynamic of societies and the cultural identity is the process by which social actors build their own meaning according to cultural attributes.

## 3. Architecture Identity

Architectural identity is perceived by an order of qualities related to uniqueness, differentiation, functionality and cohesion of the built form. Persisting within certain areas of building design, heritage preservation, architectural history and literature, such traditional notions of the built environment assume that architectural meaning is prescribed by built form; that architectural identity is essentially defined by the intentions of the designer; and that architecture possesses a definitive identity as it historically progresses toward a single, 'perfect' state over time. (Tran, 2012, P.1)

Anthropologist Victor Buchli indicates that "*often the way to understand a given society is to understand the physical and, by metamorphic extension, the social architecture of its organization*" (Buchli, 1991, P.1). Increasingly in any analytical study of any type of identity, architecture has always been utilized as a nexus of a re-examination of the nature and definition of identity of any nation (McNeill et al. 2003, P.738). Identity consists of complicated characteristics and different feature. As a result, identity has taken into consideration history, heritage, culture, religion, ethnicity, language, and consciousness (Peterkov 2003, P. 1-5). Sarup (1996, P.47) suggests that identity is not given, as it is the outcome of the process of interaction with the other and this process results in the construction of identity. In other words, identity is cyclical or ever changing since the interaction with others frequently contains the self, and he adds that "identity is conceivable through difference". According to Jones, the brilliance of architecture's characteristic as a concrete focus for identity discourses of many kinds is not defined only by its ability to represent abstract values materially, but also literally by being "in concrete" (Jones, 2006, P. 549-565). To make it clear, the space production always has a political dimension, as he states that; "Architecture should not be considered a neutral of free-floating cultural form, but rather



as an inherently social production that reflects one way which those with political power attempt both to materialize this status and to make it socially meaningful” (Jones 2011, P. 166).

#### 4. Local Architecture

Local architecture means that it is the result of its location, building materials and manpower. It only works in its location, and any other architectural element or style or material out of its culture and environment would eliminate the local status. The architecture of the coast does not represent the architecture of the mountain or the architecture of the desert. The local architecture is always the building of people and not the building of the state, which is not the official architecture (Al-Lafy, 2015). The spatial characteristics of identity are generated from the connection with the place intellectually and locally and to achieve communication with the contemporary social and human requirements within the local spatial space and the generation of the architectural symbols that express this relationship between the old and the contemporary through the application of the correct mechanisms of the method of linking between the regional and the world to give the spatial characteristics of architecture renewal and communication with human thought and social changes (Ameen, 2010, P146).

#### 5. Distortion

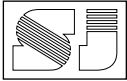
It is a change in a body or drawing or any form, either by man or nature or circumstances, from good to bad and from beautiful to ugly, or giving a picture that is not identical to the reality of the thing. It is meant here every element is an outsider on the facade does not represent an integral part of them and did not enter the design. The act of the perpetrator, which would cause damage to the place of abuse in a way that would harm its physical appearance (Salem, 2013, p. 97). Ibrahim 2007 states that, distortion is anything unpleasant to human eye where vision tries to escape from it, including ugly, heterogenous, inconsistency view, and distorted elements for the aesthetic forms of all architecture levels. Visual adaptation of human plays an important role in behavioural direction that reflects as a result of the accumulation and experiencing the surrounding environment which lacks aesthetic values. This in turn affects

negatively on the society products and public taste. (Ibrahim, 2007, P. 126)

#### 6. Types of building distortion

There are many types and levels of distortion of the facades of buildings, starting with their problems in terms of formal organization and unity and harmony of elements or color coordination and the adequacy of materials and finishing ads and methods of coordination with street furniture, but this study looks at the impact of the system of building services that were added after the stage of building construction to its facades exclusively (Shari,2008, p. 85). It is considered that the original in the construction services is to hide them and to allocate corridors or paths to pass them, considering that any visual element added to the front of any building did not enter into the interface calculations when they are designed and thus is an intrusive addition to the general configuration of the facade.

It may be because of the cultural level of the members of the society. Ibn Khaldun mentioned in his introduction that "*culture is man-made in its effort, thought and activity to fill the deficiency of its first nature and its needs in its environment in order to live a full life full of tools and factories.*" The concept of culture, as stated in the Webster Dictionary, is the sum total of patterns of human behavior and technology transmitted from generation to generation: the basic or total structure of ideas and material objects that a community or group has adopted for the continuity of their collective life (Petrous, 1992, P.11). Or because of the materials which are the building methods used and used in the construction of buildings, and the extent of their exploitation in order to create an environmentally, culturally and socially compatible building (Al Harbi, 2002, p. 27). The causes of this phenomenon are many in our human settlements, some of which are legal causes resulting from the lack or absence of legislation that governs and controls the city's facilities, others are linked to the absence of visions and effective plans to ward off the existing phenomena of contaminants and avoid the occurrence of more in the future, The cultural awareness of the society and the lack of cognitive maturity of the general public, causing them to transcend the self-interest and subject them to the benefit of the total (Shari,2008, p. 95). These visual features of buildings can be strongly or weakly linked to formal elements such as colors, doors, windows, walls, details, as well as



the relationship between horizontal and vertical elements. (Al Bayati, 2000, p. 12)

## 7. The Case Study

Sulaymaneyah city is Located in the northeast of Iraq and was established on November 14, 1784 by Ibrahim Pasha Baban. (Ali, 2011). The historic town of Sulaymanyah city is divided into eight neighbourhoods which are (Bazrgani, Dargazen, Jwlakan, KaniAskan, Malkandi, Sabunkaran, Sarshaqam and Shekhan). "Sabunkaran" is one of the city's first neighborhoods, its name means "soap makers". (DSI, 2013). Streets and paths are laid out in irregular patterns that emerged over the time along with the urban development, but it did not follow any kind of strict order. The historic centre developed in an organic pattern along with the social and cultural criteria of the time. A functional infrastructure of shops, services and small workshops dominates in the historic quarters. Shops, services and workshops are located along the main traffic arteries. Along these axes usually a two-storey mixed land use consisting of residential and commercial uses are found (IGCO, 2008, P.3.1-1). This study seeks about a problem stating that; An important issue that conflicts with architecture identity is the rebuilding process of historic urban regions having cultural, historical and national value by their owners. While the study hypothesises that; new rebuilding process achieved by the individual owners in old urban spots lead to the distortion of local architecture identity if it is not monitored by specialized local authorities.

### 7.1. Building Materials

Most of the buildings in the historical part of the city including Sabunkaran buildings were constructed from bricks. The mortar consisted of mud reinforced with straw. Gypsum mortar was used for more indoor parts, arches and thin walls. The monotonous structure of the layers of bricks is often covered by a dressing of gypsum or clay mortar. Exterior walls were often built from quarry stones that were covered by bricks afterwards whereas, steel beams for structural purpose for roofing construction and clay, as the building materials could be clearly seen in figures (1, 2 and 3).

### 7.2. Architectural Style

The architectural style used in the design of the buildings in Sabunkaran region is considered as the original architecture of the city through

using many architectural features such as special building materials, architectural elements used in the facade of the buildings as shown in figure (1,2).

### 7.3. Façade Elements

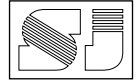
Regarding the architectural elements used in the facade of the buildings on Sabunkaran street that enrich the local identity of the architecture in this region, figure (4) show some examples of the architectural elements such as entrances, windows styles, arches, louvers and roof types. Sabunkaran street as a dominant and obvious part of the city centre was one of the main streets of Sulaymaneyah city which was recognizable through the architectural style that it had from the time of formation of the street to the end of 1950s as shown in figure (5). Most of the buildings were in architecture harmony that made the recognition of its local architecture identity as the panorama of the street in 1930 shown in figure (5) emphasises this reality.

Rebuilding process for some buildings in Sabunkaran street that has occurred through different years such as rebuilding of some units in 1950s, 1980s and after 2000. Most of the rebuilding process that occurred after 2000 did not consider the unique architectural style which recognizes the local architecture identity. Fig. (6) is the plan of Sabunkaran street showing and enumerating all buildings found on it and table (1) shows the number of the buildings that have been distorted as a result of rebuilding process occurred between 2005 and 2017.

## 8. Results and Discussion

In order to know whether the local architecture identity has been distorted or not, a comparison has been made to compare each building's architectural condition between 2005 and 2017 through a comparative study to specify the number of buildings that have been rebuilt between 2005-2017, then studying the type of distortion. Table (1) shows the number of buildings that have been rebuilt between 2005-2017.

After specifying the buildings that have been rebuilt on Sabunkaran street on the main buildings layout as shown in the Fig. (6), it is important to indicate whether the new rebuilding process caused distortion of the architecture identity or not. For this purpose, Table (2) shows the type and the range of distortion happened to the buildings of the region in (building materials, architectural elements in the facade of



buildings and architecture style). In order to show the original identity and the distorted situations of the buildings on Sabukaran street., Table (3) shows the comparison between the distorted buildings during 2005-2017 due to the new rebuilding process.

- According to the survey that has been done to show the number of buildings distorted due to rebuilding process, (17) buildings have been distorted due to new rebuilding process out of (54) building between 2005-2017. The distortion includes building materials, architectural style and architectural elements that are found in the original architecture on Sabunkaran street.
- In order to calculate the ratio and percentage of the distortion happened to the buildings on Sabunkaran Street due to the new rebuilding process, the following formula is used:

$$y = \frac{b}{a}$$

Where; ( $y$ ) is the ratio of building distortion

( $b$ ) is the number of buildings distorted after 2005

( $a$ ) is the total number of buildings on Sabunkaran street in 2005

$$y = \frac{17}{54} = 0.315$$

And the percentage of the distortion

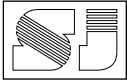
$$= \frac{17}{54} \times 100 = 31.5\%$$

### 9. Conclusion

- 1- The result shows that 31.5% of the buildings that had the local architecture identity have been distorted during 2005-2017 due to the new rebuilding process that have been made to the buildings of Sabunkaran street.
- 2- This result shows the risk of distortion and losing local architecture identity in Sabunkaran street since 31.5% of buildings local architecture identity has been distorted and unfortunately even other buildings on Sabunkaran street has lost their local architecture identity before 2005.
- 3- From the distortions that have been made to the buildings, 88% of the new rebuilding process includes the distortion of (building materials, elements of facades and architectural styles)
- 4- The results show that only 12% of the buildings have distortion only in building material and keeping elements of façade and architectural styles not distorted.
- 5- The result indicates that if new rebuilding process continues in such way, local architecture identity of the whole neighbourhood may totally be distorted and lost in the future decades.
- 6- The results show the risk that a totally different architecture style would appear that would not have any relation to the original local architecture identity. This process in future would make people to forget their architecture identity because the ability to remember comes from what is still visible but the original architecture identity on Sabunkaran street is about to be invisible.

### 10. Recommendations

- 1- Governmental related authorities such as municipality or directory of historical and heritage buildings must take care of the buildings that have the local architecture identity and do not let the owner of the buildings to distort it.
- 2- In architecture that is rarely static, rebuilding process and changing are necessary due to different causes such as destruction of buildings, desire to rebuild or any other causes, uncontrolled rebuilding process would lead to the formation of new styles in architecture and the new styles must seek for new meanings in architecture through keeping the sense of originality.
- 3- In case of any rebuilding process for the buildings, governmental related authorities must give instructions according to certain rebuilding policy of historical buildings for the new rebuilding process to keep the local architecture identity through using same building materials, architectural elements found in the design of the facades of old buildings and using the architectural style of Sabunkaran original buildings.
- 4- The buildings that have distorted the local architecture identity of Sabunkaran street should be rebuilt again according to the features of its original architecture identity.



## Reference

- 1- Buchli, Victor, (1999): An archaeology of socialism. Oxford, Berg Publishers.
- 2- Connolly, William E., Identity/Difference: Democratic Negotiations of political Paradox. University of Minnesota Press, Minneapolis / London. 1991
- 3- Jones, P., (2011): The sociology of architecture: constructing identities. Liverpool, Liverpool University Press.
- 4- Sarup, M., (1996): Identity, culture and the Postmodern world. Edinburgh, Edinburgh University Press.
- 5- Tran, J., (2012): Static Illusions: Architectural Identity, Meaning and History. Curtin University.
- 6- Vale, L. J, (1992): Architecture, power and national identity. London, Yale University Press.
- 7- Correa, C. (1983): Quest for Identity, In Proceedings of the Seminar: Exploring Architecture in Islamic Cultures 1: Architecture and Identity, The Aga Khan Award for Architecture, Geneva, Switzerland.
- 8- Ibrahim, Osama M., (2007): Visual pollution and its influence on the modern Egyptian city. 9<sup>th</sup> Al-Azhar Engineering International Conference by Architecture and planning department and college of Engineering, Suez Canal University.
- 9- Jones, P. R., (2006): The sociology of architecture and the politics of building: the discursive construction of Ground Zero. Sociology 40(3): 549-565.
- 10- McNeill, D. and M. Tewdwr-Jones (2003): Architecture, banal nationalism and re-territorialization. International Journal of Urban and Regional Research 27(3): 738-738.
- 11- Peterkova, J., (2003): European Cultural Identity: The Role of Cultural Heritage in the Process of Mutual Communication and Creation of Consciousness of Common Cultural Identity. 1-5.
- 12- Abdullah, Wrya Sabir, (2012): The Mistake In Architecture: The effect of designer's experience on the propagation of mistakes in contemporary architectural design-Sulaimani city as case study. MSc. Thesis, University of Sulaimani.
- 13- Al Bayaty, Talal A, (2000): Visual pollution in commercial streets, MSc. Thesis, Urban and regional planning centre, Baghdad University.
- 14- Al Harby, Muhammad S. (2002): Civilized inherited and Al Hijaz architecture on International outskirts "twenty first century", MSc. Thesis, Cairo University.
- 15- Ameen, Alan Faraydoon, (2010): The effect of political system on architectural identity. PhD. Thesis submitted in the University of Sulaimani, College of Engineering, Architecture Department.
- 16- De Lara, Pristine Angel Punzalan, (2016): BARANGAY HALL: Vernacular Identity in Post Disaster Community Rebuilding (An explanatory document submitted in partial fulfillment of the requirements of the degree of Master of Architecture (Professional) Unitech Institute of Technology.
- 17- Petrous, Ashraf Kamil, (1992): In the culture in Architecture, MSc. Thesis, Cairo University
- 18- Salem, Isra M. A and Nbras, Abdulkadh, (2013): Protection of holy sites from criminals. MSc. Thesis, Babel University.
- 19- Shary, Aako Noory, (2008): The influence of modern architecture on drawing the features of urban scene, MSc. Thesis, Baghdad University
- 20- Ali, Meer Ako: 13/11/2011, website (https://kurdistantribune.com/Sulaymaneyah-years-of-glory/) last accessed 31/7/2017
- 21- Al-Lafy, Dec. 2015 (http://mirathlibya.blogspot.com/2015/12/blog-post\_4.html) last accessed on (11/8/2017 at 6:00 pm)
- 22- Castells, M., (2004): The Relationship between Globalization and Cultural Identity in the early 21st Century, Forum 2004 Barcelona. From

- (http://www.barcelona2004.org/www.barcelona2004.org/eng/banco\_del\_conocimiento/documentos/fichaa56b.html?IdDoc=1700#top) last accessed 11/7/2017.
- 23- DSI, Directorate of Sulaymaniyah Immigration, (2013): (http://www.sulresidence.com/en/?page\_id=108) last accesses 31/7/2017
  - 24- HHS: Historical houses of Sulaymaniyah, (http://hhs.routes-assn.org/) last accessed on 31/7/2017. Powdered by BraDypUs Communicating Cultural Heritage In collaboration with studio 3R s.a.s. di Alessandro e Sven Stefano Tilia.

## تشويه هوية العمارة المحلية دراسة مقارنة لعمليات إعادة البناء للأبنية في شارع صابونكران

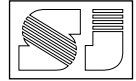
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## المستخلص

تعد المناطق والأحياء القديمة والتاريخية أكثر من مجرد مواد وعناصر ورتناها من أسلافنا ، إنها تمثل رؤية المجتمع لما يرى نفسه عليها من هوية وتمييز وفق منظور معماري ، وفي عالمنا المتحول يبقى السؤال المطروح هو ماهي هوية العمارة المحلية؟ وكيفية الحفاظ على الهوية الاصلية للعمارة المحلية أثناء عمليات إعادة البناء في المناطق القديمة والتاريخية من المدينة؟ حيث ان الهوية المعمارية هو ذلك الإرث الذي يساعد في تحديد وتعريف عمارة المستقبل من خلال إلهام أفكار جديدة وطرح حلول مناسبة للمشاكل التي تواجه المجتمع في زمن العولمة. حيث تعبر الأحياء القديمة والتاريخية عن الهوية المعمارية الأصلية مما تساعد المجتمع في تمييز عمارتها عن غيرها.

يدرس البحث تشويه هوية العمارة المحلية في شارع صابونكران كجزء من محلة صابونكران القديمة في مدينة السليمانية على صعيد كل من: الطرز، مواد البناء والعناصر المعمارية، نتيجة عمليات إعادة البناء. يتم مقارنة هذا التشويه في كل من الطرز والمواد والعناصر بالسياق العام للمنطقة دون الخوض في تفاصيل وأصناف أي من تلك المكونات. هذا البحث يقوم بإجراء دراسة مقارنة للعمارة المطللة على الشارع الرئيسي بمنطقة صابونكران للتحقيق في مدى تشويه هوية العمارة المحلية للمنطقة نتيجة عمليات إعادة البناء والترميم فيها في العقود الأخيرة من الزمن لبعض الأبنية التي شهدتها. يهدف البحث الى الحفاظ على هوية العمارة المحلية لمنطقة الدراسة من خلال الحفاظ على السياق العام، كي نري الأجيال الجديدة كنوز عمارتهم وهويتهم الثقافية دون غوش. تفترض الدراسة ان عمليات إعادة البناء والترميم التي قامت بها مالكو أبنية منطقة الدراسة قادت الى التشويه في هوية العمارة المحلية فيها ما لم تخضع تلك العمليات الى رقابة الهيئات المحلية المختصة .

**الكلمات المفتاحية:** الهوية، العمارة المحلية، هوية العمارة المحلية، التشويه.



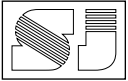
**Figure 1:** A building on Sabunkaran street with local architecture identity.  
(Source: Researchers)



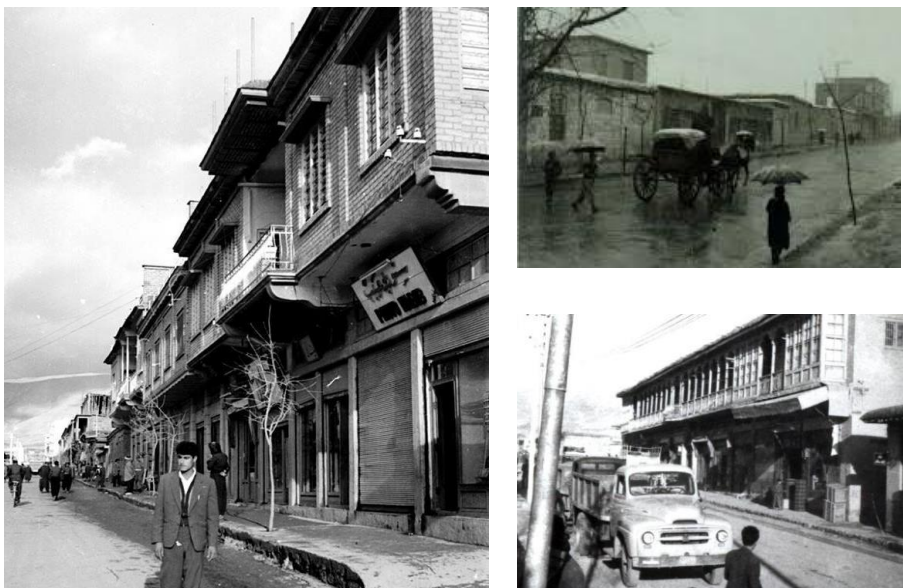
**Figure 2:** Two buildings on Sabunkaran street with local architecture identity (Source: Researchers 2005)



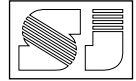
**Figure 3:** Two buildings of Sabunkaran street showing building materials (Source: Researchers)



**Figure 4:** Some examples of the architectural elements used in the facade of most buildings designed in Sabunkaran. (Source: Researchers)

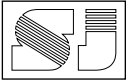


**Figure 5:** Panorama of Sabunkaran Street in 1930 showing local architecture identity through using definite architectural style, building materials and architectural elements (Source: HHS, 2008)



**Table 3:** Comparison between buildings on Sabunkaran Street between 2005-2017 (Source: Researchers)

Build.No.	Building in 2005	Building after rebuilding process 2017
Bld. 4		
Bld. 8		
Bld. 13		



**Table (3)**

Bld. 23

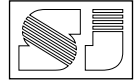


Bld. 26



Bld. 30



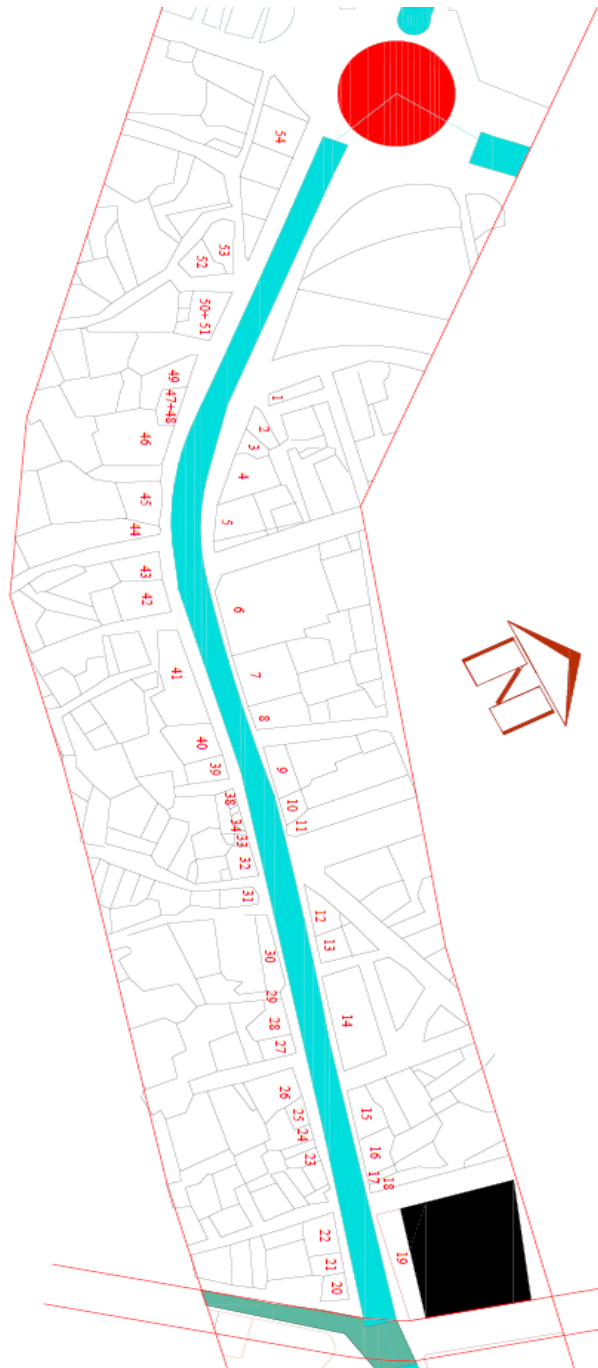
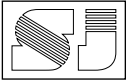


**Table 1:** Buildings of the study area showing the rebuilding process between 2005-2017

Buildings in 2005 (Bld. No.)	Buildings condition 2017	Buildings in 2005 (Bld. No.)	Buildings condition 2017	Buildings in 2005 (Bld. No.)	Buildings condition 2017
Bld. 1		Bld. 17	Rebuilt	Bld. 32	
Bld. 2		Bld. 18	Rebuilt	Bld. 33	
Bld. 3		Bld. 19	Rebuilt	Bld. 34	
Bld. 4	Rebuilt	Bld. 20		Bld. 35	
Bld. 5	Rebuilt	Bld. 21		Bld. 36	
Bld. 6		Bld. 22		Bld. 37	
Bld. 7		Bld. 23	Rebuilt	Bld. 38	
Bld. 8	Rebuilt	Bld. 24		Bld. 39	
Bld. 9	Rebuilt	Bld. 25	Rebuilt	Bld. 40	
Bld. 10		Bld. 26		Bld. 41	
Bld. 11		Bld. 27	Rebuilt	Bld. 42	
Bld. 12		Bld. 28		Bld. 43	Rebuilt
Bld. 13	Rebuilt	Bld. 29		Bld. 44	
Bld. 14	Rebuilt	Bld. 30a		Bld. 45	Rebuilt
Bld. 15	Rebuilt	Bld. 30b	Rebuilt	Bld. 46	
Bld. 16	Rebuilt	Bld. 31		Bld. 47	
Bld. 48		Bld. 51		Bld. 54	
Bld. 49		Bld. 52			
Bld. 50		Bld. 53			

**Table 2:** Type and ratio of distortion of architecture identity for the buildings on Sabunkaran street where; (1) indicates the distorted and (0) indicates not distorted.

Buildings in 2017	Type of Distortions				Buildings in 2017	Type of Distortions			
	Building Materials	Architectural elements	Architectural style	Ratio of Distortion		Building Materials	Architectural elements	Architectural style	Ratio of Distortion
Bld. 4	1	1	1	100 %	Bld. 18	1	1	1	100 %
Bld. 5	1	1	1	100 %	Bld. 19	1	1	1	100 %
Bld. 8	1	0	0	33.33 %	Bld. 23	1	1	1	100 %
Bld. 9	1	1	1	100 %	Bld. 26	1	1	1	100 %
Bld. 13	1	1	1	100 %	Bld. 27	1	1	1	100 %
Bld. 14	1	1	1	100 %	Bld. 30b	1	1	1	100 %
Bld. 15	1	1	1	100 %	Bld. 43	1	0	1	66.66 %
Bld. 16	1	1	1	100 %	Bld. 45	1	0	0	33.33 %
Bld. 17	1	1	1	100 %					



**Fig.6:** Sabunkaran Street's buildings layout showing the number of buildings on both sides.  
(Source: Directorate of Sulaimani Municipality)