World Academy of Science, Engineering and Technology
International Journal of Urban and Civil Engineering
Vol:13, No:4, 2019

Transformation of the Traditional Landscape of Kabul Old City: A Study for Its Conservation

Mohammad Umar Azizi, Tetsuya Ando

***Abstract*—**This study investigates the transformation of the traditional landscape of Kabul Old City through an examination of five case study areas. Based on physical observation, three types of houses are found: traditional, mixed and modern. Firstly, characteristics of the houses are described according to construction materials and the number of stories. Secondly, internal and external factors are considered in order to implement a conservation plan. Finally, an adaptive conservation plan is suggested to protect the traditional landscape of Kabul Old City.

***Keywords*—**Conservation, District 1, Kabul Old City, landscape, transformation, traditional houses.

I. Introduction

KABUL old city is located in District 1 according to the latest master plan [1] (Fig. 1). It is an active urban area of both residential and commercial use. It is surrounded by the Kabul River to the north, the Sher Darwaza Mountain to the south, the Bala Hissar citadel to the southeast, and the Kabul walls from the south to the west (Fig. 2).

The Kabul Old City is characterized by the mixed lifestyles of Hindus, Sikhs, and Muslims. The traditional houses, located on twisting alleyways, are made of adobe and have courtyards. There was a central bazaar (Char Chatta) for local and international trade, but modernization began in 1949 with the construction of the first road (Jaade Maiwand) to connect west and east in the center of Kabul Old City [2], and many new shops that were built along this road undermined the commercial value of the old bazaars [3].

In the civil war of 1992–1996, 80% of Kabul Old City was destroyed [4]. After the war, many of the heritage buildings were damaged and left with no proper mechanism for their restoration [5]. However, the AKTC (Aga Khan Trust for Culture) has focused attention on the conservation of Kabul historic sites. Its 2003 survey identified the Asheqan wa Arefan neighborhood as the least damaged area in District 1 [6]. Between 2003 and 2009, the AKTC restored 20 public buildings and 15 traditional houses, as well as supporting the repair of 50 other houses through small-scale grants in Asheqan wa Arefan [7].

Few studies have examined the transformation of traditional Afghan houses. Nabizada's [8] study examined the mechanism of transformation in settlements in Kabul. The studied areas are the historical area, sprawled area, planned area, and newly-planned area. The study aimed to find the development process of houses through time, as well as the quality of the spatial structure of the open spaces, outdoor activities, and social interaction. Nevertheless, only one of the research areas was in the Asheqan wa Arefan quarter, and the study does not relate to conservation.

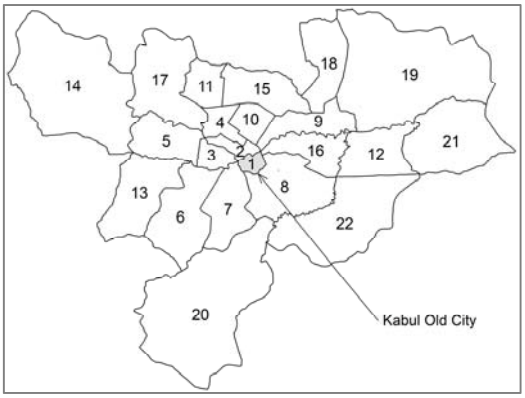


Fig. 1 Districts of Kabul (Drawing by Author, 2019)

Sharifzai et al. [9] conducted another comparative-based study on Afghan traditional and contemporary courtyard houses. The study aimed to analyze the affordability of both types of houses. They discuss how the primary form of residential building in Kabul consists of four walls constructed around a rectangular or square yard. The walls are a part of the building in some cases, but they are boundary walls in other cases, and the courtyard is uncovered, allowing air and light in.

Marcus [10] has examined the Western influence on the traditional architecture of Kabul, and how modern materials have modified traditional houses in the Asheqan wa Arefan quarter. However, once again, this study does not relate to conservation. Therefore, the present study concerns the conservation of traditional landscapes in Kabul Old City, regarding traditional houses as well as newly constructed houses. Firstly, the study focuses on the characteristics of existing houses, such as materials and the number of stories. Secondly, it compares the elements of traditional houses with newly constructed houses. Finally, an adaptive conservation approach is proposed based on the outcome of the research.

II. Building Policies in Kabul Old City

Four master plans have been prepared for Kabul urban planning. The first (1964), second (1970) and third (1978) master plans proposed to replace most of the areas of Kabul Old

Mohammad Umar Azizi is a doctoral candidate at the Graduate School of Engineering and Science, University of the Ryukyus, Okinawa prefecture 903-0213, Japan (corresponding author; e-mail: moh.umar@hotmail.com).

Tetsuya Ando is a professor at the Graduate School of Engineering and Science, University of the Ryukyus, Okinawa prefecture 903-0213, Japan (e-mail: tando@tec.u-ryukyu.ac.jp).

City for public use, such as industries and green space [11]. However, the plans were not implemented properly due to a number of wars that continued until 1996. The Japan International Cooperation Agency (JICA) prepared the most recent master plan in 2013. The presence of Kabul Old City and its neighborhoods is recognized and indicated as the Old City (in English). According to this master plan, residential areas are defined into three categories: (1) medium-rise high-density, (2) low-rise medium-density, and (3) low-rise low-density [12]. Kabul Old City is not mentioned in the categories, and no specific regulations have been defined thus far. The District 1 municipality office has banned the construction of new buildings. However, they issue official temporary building permits to people who want to do repairs on the condition that local materials are used for the work [5].

In 2017, the Kabul municipality started identifying historic buildings in Kabul [13]. The purpose is to reconstruct public buildings with historical values. Overall, 225 buildings are identified in 22 districts. In District 1, six zones have been defined according to the existence of access networks to enhance the process of reconstruction (Fig. 2 and Table I). However, they do not consider traditional houses as heritage buildings.

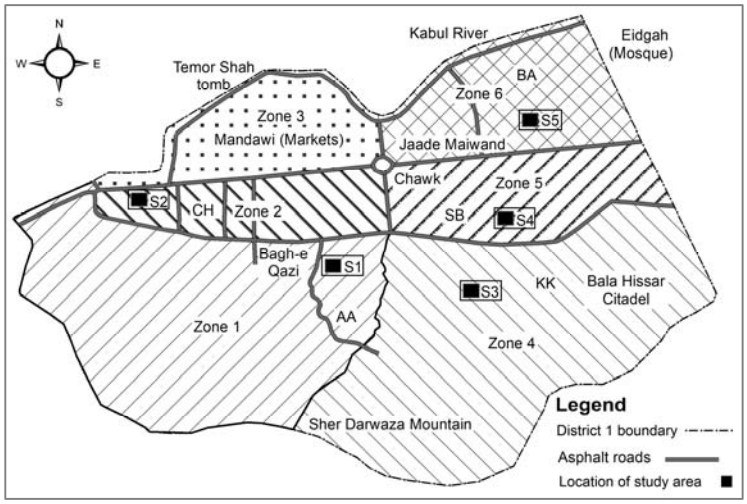


Fig. 2 Zones and location of study areas in District 1 (Drawing by Author, 2019) S – Study area, AA – Asheqan wa Arefan, CH – Chindawol, KK – Khuch-e Kharabat, SB – Shur Bazaar, BA – Bagh-e Ali Mardaan

TABLE I
HISTORICAL PUBLIC BUILDINGS IDENTIFIED IN SIX ZONES [13]

Zone	Type of historical building						Total
	Mosque	Temple	Shrine	Khanqah	Graveyard	Other	
Zone 1	4	-	4	1	1	3	13
Zone 2	4	-	1	6	1	1	13
Zone 3	2	1	-	-	1	1	5
Zone 4	3	4	2	-	1	2	12
Zone 5	1	1	-	2	1	-	5
Zone 6	3	1	1	1	-	2	8
Total	17	7	8	10	5	9	56

Note: Other is mixed historical properties such as citadel, defense walls, serai[1], and bazaar.

Zone 1 – Asheqan wa Arefan (AA)

The name of this residential area comes from the graves of two brothers, Khoja Abdul Salam (Asheqan) and Khoja Abdul Samad (Arefan), who were grandsons of Khoja Abdullah Ansari. The quarter is situated between the Chindawol area to the north and the Sher Darwaza Mountain to the south. In this zone, there is a garden (Bagh-e Qazi) and 13 historical buildings. These historical buildings are mostly mosques and shrines (Table I).

Zone 2 – Chindawol (CH)

Chindawol is a residential area situated between Mandawi (markets) to the north and the Asheqan wa Arefan quarter in the south, and it is enclosed by asphalt roads. The majority of the Qizilbash ethnic group settled in the area during the Nader Afshar attack [14]. In this zone, 13 historical buildings are identified, with khanqahs[2] being the most prevalent, followed by mosques (Table I).

Zone 3 – Mandawi (Markets)

Several small shops and markets occupy the area. This zone is a central trading place and supplies goods for Kabul city and other provinces. Temor Shah's tomb, in the northern part, and five other public buildings are located in this zone (Table I).

Zone 4 – Kuch-e Kharabat (KK)

The Kuch-e Kharabat residential area is surrounded by the Shur Bazar quarter to the north and the Bala Hissar citadel to the south and east. The area seems to be the previous home of Sikhs and Hindus, as four temples (Daramsal) are located in this zone (Table I).

Zone 5 – Shur Bazaar (SB)

The area is located between Bagh-e Ali Mardaan to the

[1] A serai was a hostel for rural merchants or foreign traders.

[2] The term khanqah is made up of two Persian words khana-gah and means "a place of residence" for the Sufis, a "place at the table" or a "place of recitation". [15]

north, the Kuch-e Kharabat quarter to the south, and Chindawol to the west. Many asphalt roads enclose the area. Five historic buildings are located in this zone (Table I).

Zone 6 – Bagh-e Ali Mardaan (BA)

This residential quarter is positioned between the Kabul River to the north, Shur Bazaar to the south, and Mandawi (markets) in the west. The name of the area derives from a garden built by Shah Jahan's governor, Ali Mardan Khan. Many asphalt roads surround the quarter, and one road passes across the area. Eight historical buildings are identified for rehabilitation (Table I). Therefore, for this study, we adopted the Kabul municipality zoning and selected one case study area in each zone, with the exception of zone 3 (markets).

III. Characteristics of Houses in Kabul Old City

The physical observation of 66 houses (Table II) was conducted in five studied areas (Fig. 2) from early February to mid-March of 2018. The surveyed houses were selected based on the recommendation of the Wakil Gozar (community representative) of each quarter. Since security is the primary concern in Kabul city, the residents are not willing to agree to their houses being surveyed without the Wakil Gozar's support. The observation of houses was completed based on the pictures taken from the exterior (alleyways and streets) and the interior (courtyard).

TABLE II
The Number of House Samples in Five Case Study Areas

Study area	Quarter name	No. of surveyed houses
S1	Asheqan wa Arefan (AA)	14
S2	Chindawol (CH)	15
S3	Kuch-e Kharabat (KK)	12
S4	Shur Bazar (SB)	13
S5	Bagh-e Ali Mardaan (BA)	12
	Total	66

A. Types of Houses

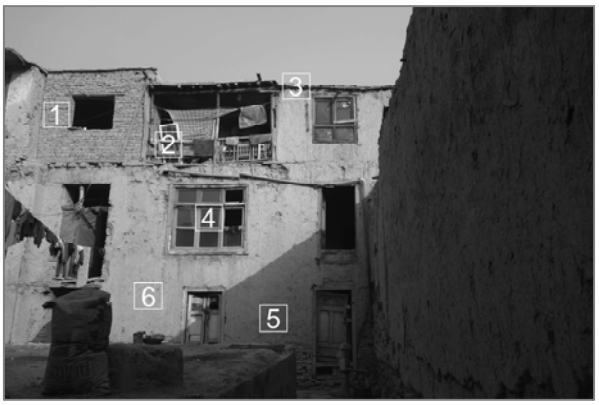
Three types of houses are identified in the studied areas: traditional, mixed and modern. In traditional houses, walls are made of stone masonry and sun-dried bricks (Khesht Khaam) covered with a mud–straw plaster. The roofs are constructed from a thick layer of mud supported with wooden timbers. The rooftop finishing has been covered by mud–straw plaster (Kaah-gel) to prevent rain or snow water penetration (Fig. 3 (a)).

Mixed type houses are built with traditional materials but also include industrial materials such as fired bricks and metallic beams (Fig. 3 (b)).

Modern type houses are built with industrial construction materials. The walls are made of fired bricks, with reinforced concrete/metallic beams used for the roofs (Fig. 3 (c)).

Table III shows that modern houses account for more than half of the houses (53.0%) in the five studied areas. In four quarters (CH, KK, SB, and BA), modern houses are in the majority, as compared to the traditional and mixed types. Only in AA do traditional houses account for the majority (78.6%). This indicates that modernization has affected all quarters, but among them, AA is the best conserved.

(a) A traditional type of house: 1 – Wooden parapet, 2 – Mud roof, 3 – Adobe wall (Sinj construction), 4 – Wooden window, 5 – Mud–straw plaster, 6 – Adobe column



(b) A mixed type of house: 1 – Fired-brick wall, 2 – Wooden protected balcony, 3 – Mud roof, 4 – Wooden window, 5 – Mud–straw plaster, 6 – Adobe walls

(c) A modern type of house: 1 – RCC roof, 2 – Fired-brick parapet, 3 – Wooden window, 4 – Fired-brick walls, 5 – Metallic main door

Fig. 3 The three types of houses identified in the studied areas

B. The Number of Stories

Table IV indicates that houses with two living floors are the most common in Kabul Old City. The data also show that houses located in the study areas of Chindawol (CH) and Shur

Bazar (SB) rise to a level of four living floors.

TABLE III
THE RATIO OF THREE TYPES OF HOUSES IN FIVE CASE STUDY AREAS

Study area	Type of house			Total
	Traditional	Mixed	Modern	
AA	11 (78.6%)	-	3 (21.4%)	14 (100.0%)
CH	3 (20.0%)	4 (26.7%)	8 (53.3%)	15 (100.0%)
KK	1 (8.3%)	1 (8.3%)	10 (83.3%	12 (100.0%)
SB	3 (23.1%)	2 (15.4%)	8 (61.5%)	13 (100.0%)
BA	3 (25.0%)	3 (25.0%)	6 (50.0%)	12 (100.0%)
Total	21 (31.8%)	10 (15.2%)	35 (53.0%)	66 (100.0%)

TABLE IV
THE NUMBER OF LIVING FLOORS IN FIVE CASE STUDY AREAS

Study area	Number of floors				Total
	1LF	2LF	3LF	4LF	
AA	2 (14.3%)	11 (78.6%)	1 (7.1%)	-	14 (100.0%)
CH	4 (26.7%)	8 (53.3%)	2 (13.3%)	1 (6.7%)	15 (100.0%)
KK	4 (33.3%)	8 (66.7%)	-	-	12 (100.0%)
SB	2 (15.4%)	9 (69.2%)	1 (7.7%)	1 (7.7%)	13 (100.0%)
BA	-	11 (91.7%)	1 (8.3%)	-	12 (100.0%)
Total	12 (18.2%)	47 (71.2%)	5 (7.6%)	2 (3.0%)	66 (100.0%)

LF- Living floor(s)

The relationship between the types of houses and the number of stories is examined (Table V). The numbers of houses with three and four living floors are not significant. The maximum number of living floors in traditional houses is three, whereas in modern houses it is four. This indicates that the industrial construction materials allow houses to have four living floors and transform the façade of houses through the use of fired bricks.

TABLE V
THE RELATIONSHIP OF TYPES OF HOUSES WITH THE NUMBER OF FLOORS

Type of house	Number of floors				Total
	1LF	2LF	3LF	4LF	
Traditional	3 (25%)	17 (36.2%)	1 (20.0%)	-	21
Mixed	1 (8.3%)	8 (17.0%)	1 (20.0%)	-	10
Modern	8 (66.7%)	22 (46.8%)	3 (60.0%)	2 (100.0%)	35
Total	12 (100.0%)	47 (100.0%)	5 (100.0%)	2 (100.0%)	66

LF- Living floor(s)

C. The Streetscape

In Kabul city, the houses are inward-looking and have an opening to a private courtyard [16]. Thus, houses have a two-sided appearance: (1) façade to the street and (2) façade to the courtyard.

The façade to the street is publicly visible and forms a streetscape. In the case of Kabul Old City, exterior walls (street-front and side walls), parapet walls, exterior windows and the main door are visible from the street, and they are the elements of the streetscape (Fig. 4).

A comparison of the streetscape appearance of traditional houses with mixed and modern houses is described in Table VI. The façades of traditional houses are built with local materials, such as adobe walls, mud–straw plaster, and wooden windows and doors. In contrast, mixed and modern type houses have surfaces of industrial materials. They are built with fired-brick walls, concrete roofs, and metallic doors. Where mixed and modern houses have become dominant, the streetscape is transformed from traditional to modern.

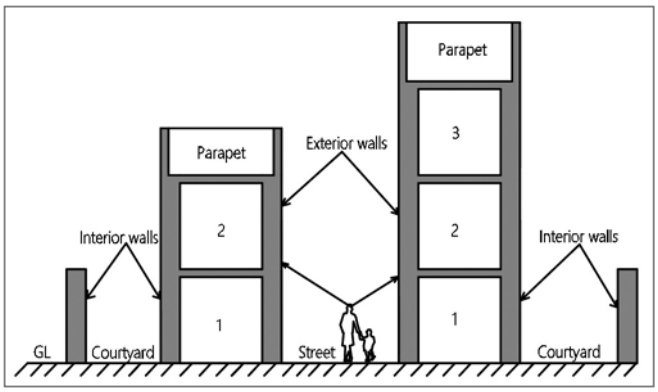


Fig. 4 Section of the streetscape of houses (Drawing by author)

TABLE VI
THE STREETSCAPE APPEARANCE OF HOUSES FACING THE PUBLIC PASSAGES

Type of house	Materials of elements			
	Walls	Main door	Window	Plaster
Traditional	Sun-dried bricks	Wooden	Wooden	Mud–straw
Mixed	Sun-dried + Fired bricks	Wooden + Metal	Wooden + Metal	Mud–straw + Cement
Modern	Fired bricks	Metal	Wooden + Metal	Cement

IV. PROPOSED CONSERVATION PLANNING IN KABUL OLD CITY

A. SWOT Analysis

SWOT analysis (Table VII) was undertaken to identify internal and external factors if the conservation plan is implemented.

TABLE VII
THE SWOT ANALYSIS FOR CONSERVATION AND INNER AND OUTER FACTORS

SWOT (Strengths, Weaknesses, Opportunities, Threats)
Strengths
Availability of local materials: Located in the center of the city and near to construction material stores.
High residential occupancy rate: Close to central business district and office buildings.
Tourist attraction: The influence of Islamic architecture, the existence of the Bala Hissar citadel and local bazaars can attract many foreign visitors.
Weaknesses
A technical life span of traditional houses: Most of the traditional houses are in bad condition.
High-rise buildings: The increased number of houses with four living floors, and maybe more in the future, will change the traditional landscape.
Modification of traditional elements: People are using fired-bricks and metallic windows and main doors now.
Vacant plots: Availability of vacant plots for construction.
Lack of proper drainage and sewage systems: There is no proper drainage for rainwater and transfer of liquid waste.
Opportunities
Housing: Growing housing demands for the residents.
Political situation: Current political stability.
Municipal commitments: Local district offices improve accessibility and sewerage.
Job opportunities: Provide more employment for people.
Threats
Increase population: Increase of households in District 1.
City's vacancy rate: Other districts' housing occupancy rates will decrease.

The analysis shows that there are many possible advantages

and disadvantages based on area characteristics and socio-economic factors. For instance, since Kabul Old City is in the city center and close to the central business district, after improving the area, the rate of occupancy might become significantly higher.

B. Building Regulations

From the aspect of traditional architecture, the streetscape (façade) and landscape (number of floors) are the most critical parts to conserve, since they are directly visible from public passages. In Kabul Old City, regulations must be established according to the nature of conservation for each quarter in order to maintain their traditional form. There are two approaches for the conservation of houses in Kabul Old City:

1. Building regulations for the already built (existing) houses
2. Building regulations for future construction of houses

Table VIII illustrates possible conservation regulations for the streetscape of the existing two types of houses (mixed and modern), since they are transforming the appearance of the area. Use of mud–straw plaster is suggested on the surface of the exterior walls built with fired-bricks.

Based on the field observation (Fig. 3 (a)), the majority of traditional houses are in poor condition. Regular maintenance of those houses, such as replastering, is recommended for durability.

TABLE VIII
REGULATIONS FOR THE CONSERVATION OF THE STREETSCAPE OF MIXED AND MODERN HOUSES

Elements	Type of regulation	
	Permitted	Restricted
Exterior walls	1) Mud–straw plaster	1) Leave fired bricks without mud–straw plaster 2) Cement plaster
Parapet walls	1) Mud–straw plaster	1) Leave fired bricks without mud–straw plaster 2) Cement plaster
Exterior windows	1) Brown paint[3]	1) Leave metal surface without brown paint or usage of other colors
Main doors	1) Brown paint	1) Leave metal surface without brown paint or usage of other colors

In Kabul Old City, according to the existence of traditional houses, the quarters can be categorized into two types: (1) high conserved area and (2) moderate conserved area (Table IX). Therefore, the second approach suggests imposing building regulations for future construction of houses proposed in each conserved area (Table X). The planned building regulations will ensure that each quarter must match the characteristics of the traditional appearance, such as: (1) streetscape façade of the houses, (2) landscape (number of stories) and (3) limited usage of metallic materials.

It is worth mentioning that the wooden art construction of traditional doors and windows is becoming less prevalent. Establishing craft institutes to provide education about the historical elements is recommended in order to preserve Afghanistan's woodworking heritage.

[3] In Kabul Old City, brown paint is the common color for wooden materials of traditional houses, and it is mostly used on the windows and doors.

TABLE IX
CATEGORY OF EACH QUARTER ACCORDING TO THE CONSERVATION NATURE

Quarter name	Ratio of traditional houses	Conserved type
Asheqan wa Arefan (AA)	78.6%	High conserved
Chindawol (CH)	20.0%	Moderate conserved
Kuch-e Kharabat (KK)	8.3%	Moderate conserved
Shur Bazaar (SB)	23.1%	Moderate conserved
Bagh-e Ali Mardaan (BA)	25.0%	Moderate conserved

TABLE X
FUTURE BUILDING REGULATIONS IN FIVE STUDIED AREAS

Conserved type	Max floors	Exterior wall		Plaster		Roof		Window		Door	
		SD	FB	MS	C	Mu	Co	W	M	W	M
HC (AA)	3	O	X	O	X	O	X	O	X	O	X
MC (Others: CH, KK, SB, BA)	3	O	O	O	X	O	O	O	X	O	X

HC – High conserved, MC – Moderate conserved, Max – Maximum,
AA – Asheqan wa Arefan, CH – Chindawol, KK – Kuch-e Kharabat,
SB – Shur Bazaar, BA – Bagh-e Ali Mardaan, SD – Sun-dried bricks,
FB – Fired bricks, MS – Mud–straw, C – Cement, Mu – Mud,
Co – Concrete, W – Wood, M – Metal, O – Permitted, X – Restricted

V. CONCLUSION

The study shows that the government currently has no specific building regulations to protect the traditional buildings of Kabul Old City. The District 1 municipality office only issues temporary building permits to residents for repair of their houses on the condition that local materials are used.

Based on the findings of this study, the following measures are suggested to preserve the traditional landscape of Kabul Old City:

1) Preservation zoning should be imposed based on the present condition of the traditional landscape. Although there are five quarters in District 1, Asheqan wa Arefan (AA) is the area with the highest level of conservation, and it should be the focus of conservation efforts.
2) In AA, strict regulations should be imposed. Existing traditional houses should be preserved as much as possible. Visible parts of existing mixed and modern houses should be covered with local materials. For new construction, houses should not have more than three living floors and all visible parts should be covered with local materials.
3) For the other four residential quarters of District 1 (CH, KK, SB, BA), regulation should not be excessive, and use of local materials should be encouraged.

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