

A STUDY ON THE TRANSFORMATION OF HERAT OLD CITY

- In case of the Momandha Quarter -

ヘラート旧市街地の変容

-モマンダ地区を事例として-

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Herat is an old city in Western Afghanistan on Silk Road known for its cultural heritages. However, as the urban population increases rapidly, the city is under strong development pressure. This study looks at the extent of physical change as well as changes of residents in the Momandha Quarter in the southwestern part of Herat Old City, where many traditional adobe houses with domed roofs are preserved relatively well until now. Through field survey, it finds that activities of new constructions and repairs using industrialized materials have been accelerated in the last 10 years as new residents are moving into the old neighborhoods attracted by lower property prices. The traditional landscape of the quarter is rapidly changing as a result and conservation means are urgently needed.

Keywords: *Afghanistan, Herat Old City, physical change, background of residents, conservation*

アフガニスタン, ヘラート, 旧市街地, 物理的变化, 住民属性, 保全

1. Introduction

The city of Herat is the capital of Herat province in the north-west region of Afghanistan. Herat province borders with Iran in West, Turkmenistan in North, and other provinces of Afghanistan in South and East (Fig. 1a). The city is crossed by the Afghanistan ring road and Harirud River. The city of Herat, with about 493,600 inhabitants living in 12 Herati districts (Loda et al., 2013), is the third largest city in Afghanistan and is famous because of its cultural heritage and picturesque landscape. The city lies within a region historically known as Khorasan that spans northeastern Iran and southern Turkmenistan.

The walled Herat Old City was an oasis city of Silk Road and the capital of Timurid Dynasty. During the fifteenth century, Timurid Shahs settled in the city of Herat, which henceforth served as the capital of empire (Noelle, Ch. and Karimi, 2014). Herat was endowed with impressive architectural monuments that were designed by the Timurid Shahs as the symbolic capital of the powerful empire.

In recent years, the Herat Old City has faced both rapid physical and social changes. According to reports prepared by UNESCO, the Herat Old City has the potential to become a world cultural heritage site because of its historic urban fabric and monuments, but recent changes are critically endangering that character. This paper focuses on the forces at play in the transformation of this area, and how those changes are endangering its unique appeal.

The importance of conservation of cultural heritages was not realized in Afghanistan until the second half of the 20th century. However, due to internal conflicts, it was completely forgotten until after the Taliban regime. Fortunately, unlike other historical sites in Afghanistan such as the Old City of Kabul and statues of Buddha in Bamyán, Herat Old City is still intact despite the internal war in Afghanistan (Fig. 1b). In recent years, largely because of relative peace in the region, the cultural importance of Herat Old City has attracted attention from national and international organizations.

After the Taliban regime, a new government was established in Afghanistan. The Aga Khan Trust for Culture (AKTC) showed interest in the conservation of cultural heritage sites in Afghanistan. AKTC, in 2005, started its mission through mapping and documenting all

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properties in the Herat Old City and conservation of historic houses and public buildings, along with provision of small-scale grants to households. Conservation of cisterns, mosques and private houses progressed. Repair and reconstruction of the drain system, laying of stone paving in pedestrian alleyways, and improvement of plazas by removal of solid and waste sewage was done by AKTC in order to upgrade the infrastructure of the Old City (AKTC, 2008). The AKTC mission ended in Oct. 2010 by repairing Qal'a-i-Ikhteyaruddin⁹.

2. Literature review

A few studies have investigated the physical conditions, residents and the conservation of cultural heritage of Herat Old City. In "Islamic Architecture in Herat" (1981), Samizay mentioned Herat Old City had been an important cultural center of the Islamic world at times. He pointed out "Herat New-City", a new residential quarter established 40 years ago and located outside the boundary wall of the Old City, as having attracted the wealthy population, leading to the gradual deterioration of living conditions within the Old City. Therefore, conservation and restoration of Herat Old City, as a significant national issue for Afghanistan, deserve to be at the top of the government's priorities. In Dec. 1981, for the first time, a report was prepared by UNESCO for the government of Afghanistan describing restoration activities for Qal'a-i-Ikhteyaruddin. Najimi (1988) focused on the physical characteristics of Herat, its inhabitants and the physical changes of Herat Old City due to modernization. Taking the Islamic culture of inhabitants into consideration, Najimi proposed applicable on-site environmental improvements in housing and sewage systems that would result in minimal changes to the physical appearance of the Old City. In April 2005, under the observation of UNESCO, the "Agreement of Conservation of Tangible Cultural Heritages of Herat" was prepared. This agreement defines the following 3 zones: Core Zone, Buffer Zone, and Skyline Zone. The height and architectural characteristics of buildings of each zone, necessary in order to preserve the skyline and save the traditional appearance of the city, are described (Loda et al. 2013). In this agreement any new construction and repair that endanger the historic urban fabric of the Old City, which is defined as a part of core zone, is prohibited. In Sep. 2012, "Third Expert Working Group Meeting for the Old City of Herat" was held by UNESCO World Heritage Centre in Turin, Italy. It recommends the government of Afghanistan to pressure the effort for effective protection of historic urban fabric of the Old City of Herat as well as preservation of monumental ensembles of Herat. Loda et al. (2013) point out "the process of building modernization going on in the Old City is, therefore, one of the most serious threats to the conservation of its physical integrity"(p.167), which means reconstructions and renovations using non-traditional materials are increasing in the retail area of Old City.

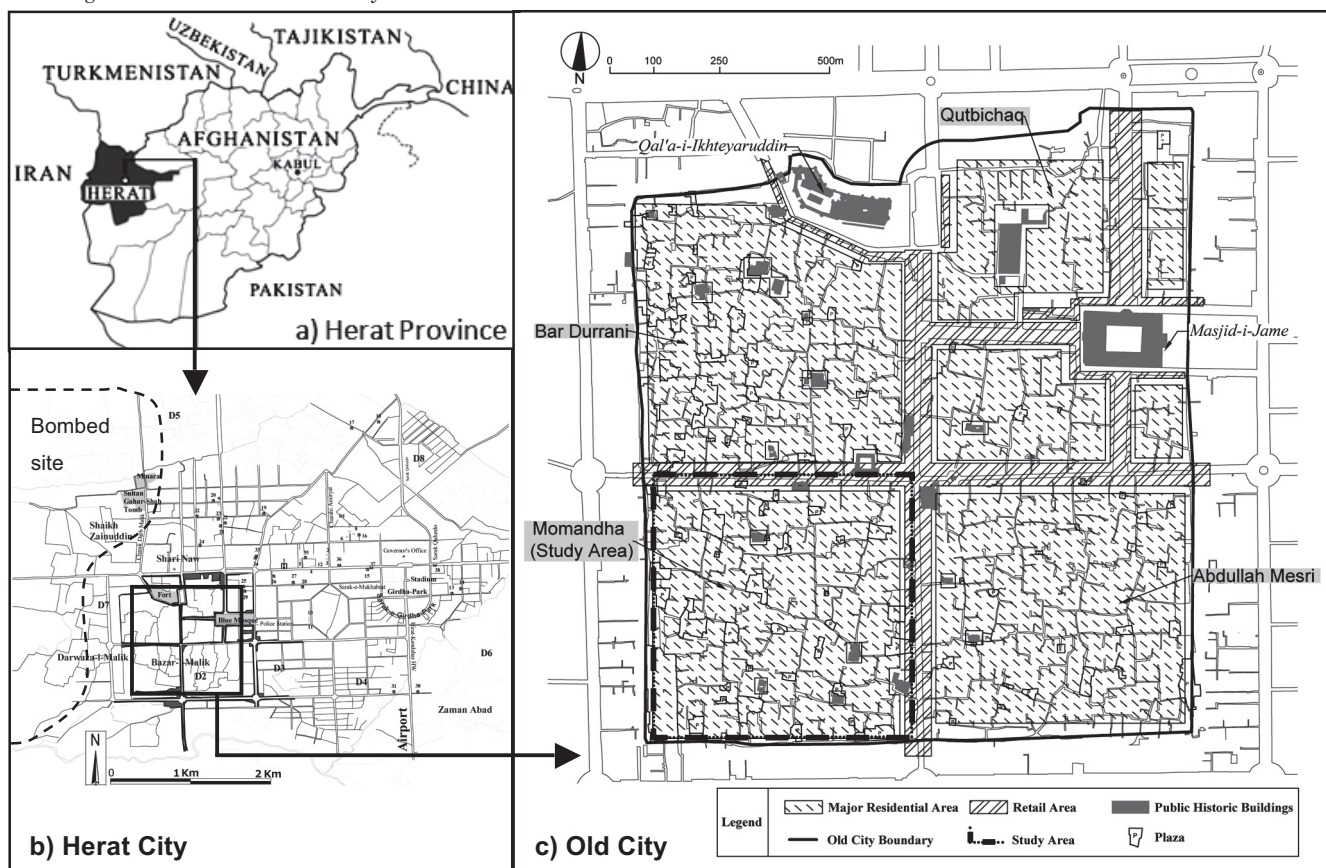


Fig. 1 a) Herat Province. b) Herat City (Source: AIMS-2005) and bombed site. c) Old City and study area (Base map: AKTC).

However, these previous studies have not explained recent and on-going changes in Herat Old City. This study investigates current changes in the physical characteristics of the Old City and the relation of these physical changes and changes of residents.

3. Study area and methodology

After many changes, Herat Old City now has five entrances and two main streets running east-west and north-south that split the Old City into four quarters. Along the two main streets there was and still is the central retail area or bazaar (Fig. 1c)ⁱⁱⁱ. The Old City used to be walled and had gates for entrance and towers for defense. Nothing is left of the city gatesⁱⁱⁱ and five towers that were originally used as measures of defense. Only a small part of the city wall still exists in the north of the site. In other parts, new constructions have taken place on top of the old wall. Significant architectural features are the central mosque (*Masjid-i-Jame*), the Citadel (*Qal'a-i-Ikhteyaruddin*), numerous minor mosques, synagogues, monumental cisterns, hammams and on extraordinary concentration of caravansaries and patrician homes (Loda et al. 2013).

Public buildings and private houses are connected by a network of streets and open spaces in the Old City. The two main streets separate the Old City symmetrically into the four quarters of Momandha, Bar Durrani, Qutbichaq and Abdullah Mesri. Based on AKTC surveys, within these four quarters there are 4,886 dwellings (445 are classified as historical and 3,611 as traditional), 101 caravansaries, 89 mosques and 363 more specialized buildings (Sacellum Chapels, Cisterns, Hammams, etc.). In 2006 there was a total of 19,215 shops in the streets flanking the walls, with 912 artisan workshops. Often the streets in a neighborhood are named after the profession of the inhabitants of that street; they can also be named after the head of a family to honor his name. The names of the city's four quarters serve as an example (Najimi 1988). Qutbichaq and Abdullah Mesri are names of persons, and Momandha is a name of family.

This study analyses the transformation of houses in the Old City. For the aim of this paper, we define Herat City as the area consisted of 'Old City' and 'New City'. 'Herat Province' means Herat Province area excluding Herat City. 'Other Provinces' mean provinces of Afghanistan other than Herat Province. The area studied is the quarter of Momandha in the Old City, hereafter called "the study area". Among the four quarters, Momandha, as shown in the land use map (Fig. 1c), is the most residential quarter of the Old City with about

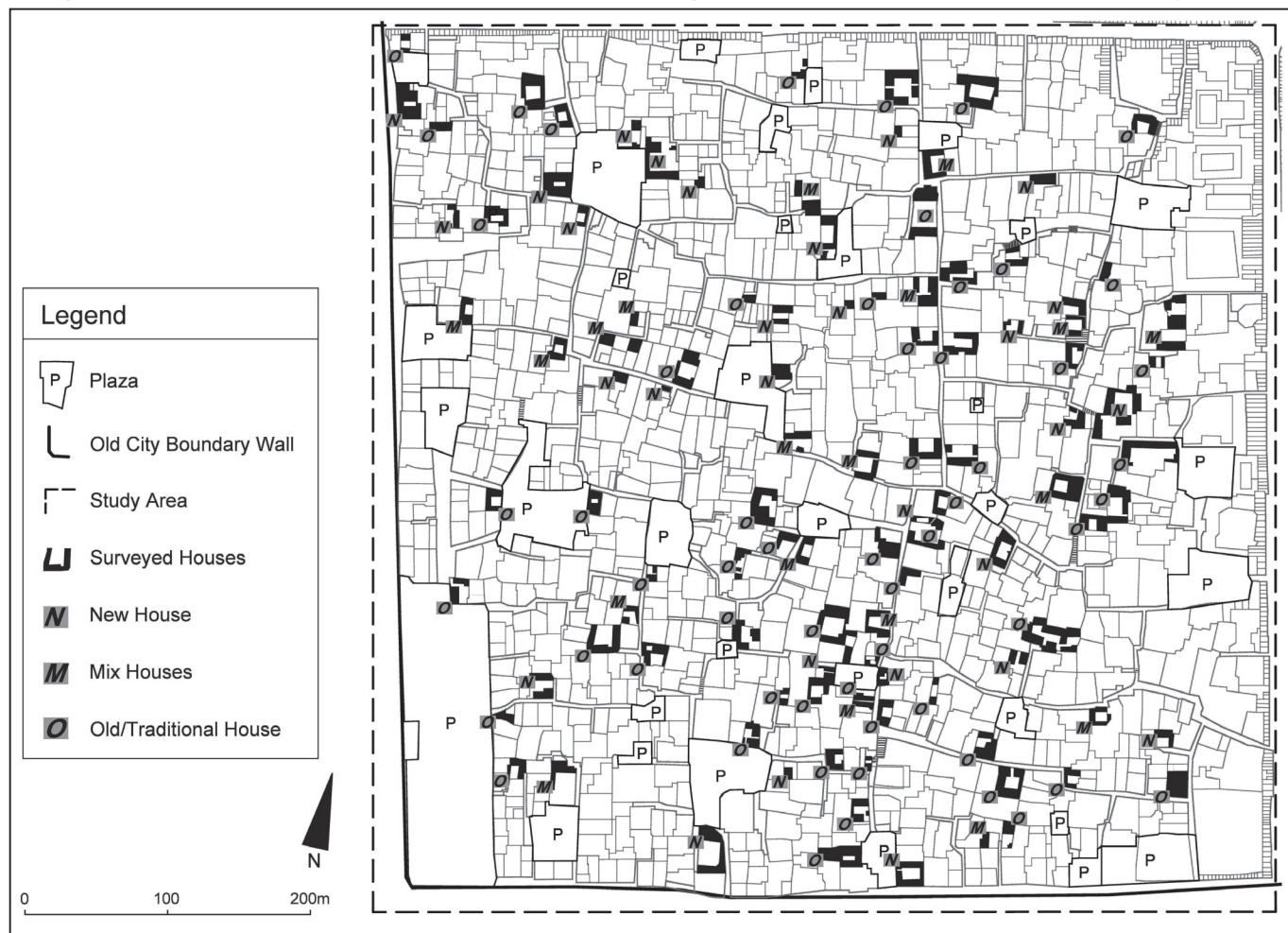


Fig. 2 Location and appearance of surveyed houses in the Momandha Quarter (Base map: AKTC)

1,050 residential houses. For the paper, both primary and secondary data are used. Primary data were provided by field surveys and interviews on the study area, while secondary data came mostly from property base maps provided by AKTC. As shown in Fig. 2^{iv)}, we surveyed 107 randomly selected houses in the Momandha Quarter via questionnaires in July 2015. We classified the network of streets into 3 different categories of alleys, plazas and dead-ends. Alleys are narrow passage ways and in most of cases cars cannot pass. Fig. 3a shows a sample alley in the study area between traditional mud walls of houses. Dead-ends are passage ways with no exit. Plazas are open spaces in the Old City that are usually surrounded by buildings, and in some cases they have small gardens inside. Based on site observations, some of these plazas have been improved, mostly by AKTC, and are used by the residents of the Old City, as a meeting place or as a children's playing yard. We surveyed about 10% of total houses of the study area and as seen in Table 1, 55 % of surveyed houses are located at alleys, 25% at dead-ends and 20% are at plazas.

For the aim of survey, we categorized houses in three different types of old, mixed and new houses. Old houses are original structures made of mud-bricks, hereafter called traditional materials, with domed or vaulted roofs and have private internal courtyards (Fig. 3b). New houses or apartments are made of concrete, bricks and facades with mirror-glass, hereafter called industrialized materials. They have flat roofs and no court yard and in most cases the building faced to access directly (Fig. 3c). Mixed houses are the houses which have newly constructed house with industrialized materials in court yard of old house, and/or removed the old house partially and added new part with industrialized materials to the house that changed the structure and appearance of old house (Fig. 3d). As it is seen in Fig. 3d, the owner of this mixed house constructed two-story new building behind the one story domed old building in the same property.

After pre-survey in May 2015, based on physical and social related indicators of the study area, a close ended questionnaire was prepared. Physical appearance of the houses (which was divided into the three categories of old, mixed and new houses as seen in Fig. 3), number of floors, and time and type of physical changes (repair and new construction) were defined as physical indicators in the questionnaire.

Additional questions were asked pertaining information on residents such as number of residents in each house, ownership of the property, number of relatives living as neighbors and duration of living in the house. We categorized the duration of living in the houses in three groups: "first generation", here after called 1stG, "second generation" or 2ndG and "third generation or longer", or 3rdGL. Each generation was assumed to have lasted approximately 20 years in the house.

4. Physical characteristics of the Momandha Quarter

Among the surveyed houses, 55% are categorized as old, 27% new and 18% mixed (Table 2). The most common type of house is the one story building (64%), while 32% are two story buildings and 4% are three story buildings (Table 3). None of the old buildings have 3 stories; traditional two story houses are usually constructed on the streets creating corridors called "Daalan" that is part of the typical

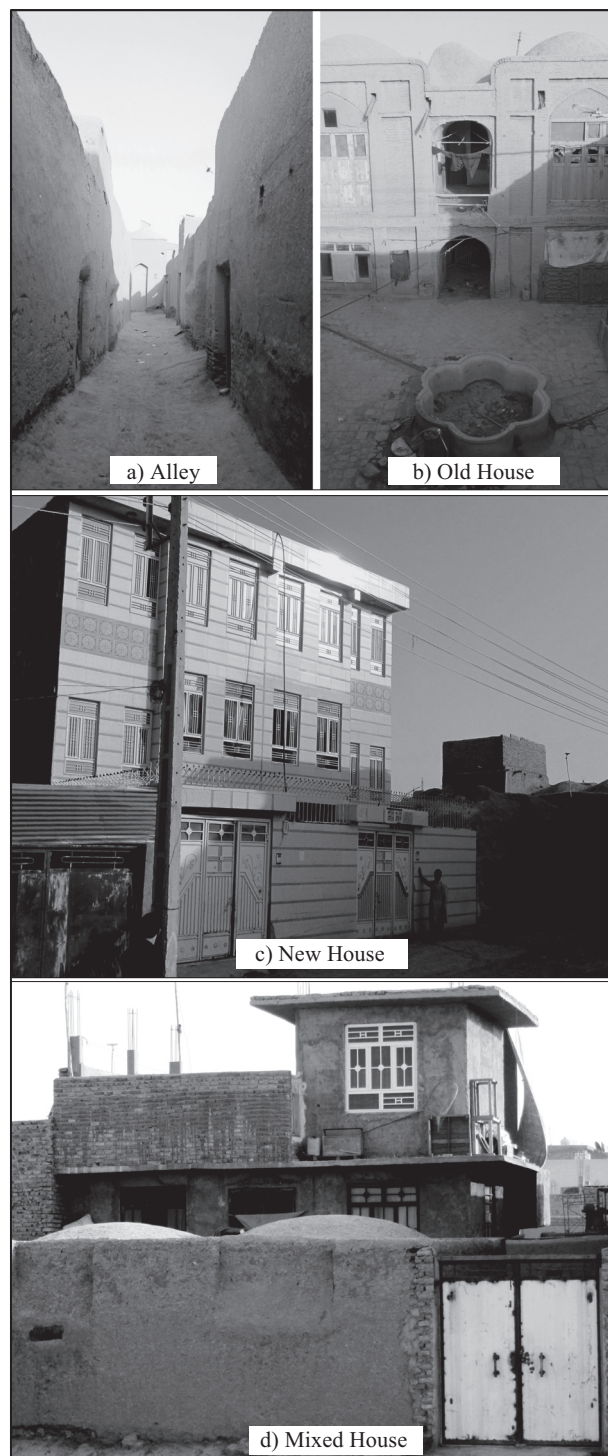


Fig. 3 Alley and types of Old City houses

Table 1 Location of houses

House Location	Surveyed Houses		Total Houses	
	No.	%	No.	%
Dead-End	27	25%	275	26.2%
Plaza	21	20%	255	24.3%
Alley	59	55%	520	49.5%
Total	107	100%	1050	100%

architecture of the Old City. These houses, as well as traditional one story buildings, have dome roofs. Conversely, new constructions in new and mixed houses are built with industrialized material and have flat roofs that have changed the appearance and sky line of the Old City.

As it is shown in Table 4, about 34% of the houses have kept their traditional shape. All the other buildings have been modified either through new constructions or repair and renovation of the old house. Table 5 shows the number and type of changes in the physical appearance of the houses that have changed. 58% of changes are new constructions and 42% of changes are repairs. Although repairs don't change the structure of old houses, by using industrialized materials for repairing and/or covering, they change the appearance of the old house.

Based on timeline of improvements implemented by AKTC, we categorized recent changes into 3 phases: pre-Aga Khan period (before 2005), Aga-Khan period (2005 to 2010) and post-Aga Khan period (After 2010). The study shows that 5% of total changes (including new constructions and repairs) were implemented in the pre-Aga Khan period, 45% in the Aga-Khan period and 50% in the post-Aga Khan period (Table 6). Most of the changes in physical appearance in the study area took place between 2007 to 2013. The changes reached their peak in 2010 (Fig. 4).

The survey shows (Table 7) that recent changes started along alleys, during Aga-Khan period and expanded to dead-ends and plazas

Table 2 Cross tabulation of house loc. * physical app.

Valid: 107 No answer: 0 Total: 107		Physical Appearance							
		New		Mixed		Old		Total	
		No.	%	No.	%	No.	%	No.	%
House Location:	Dead-End	7	26%	4	15%	16	59%	27	100%
	Plaza	7	33%	3	14%	11	52%	21	100%
	Allay	15	25%	12	20%	32	54%	59	100%
Total		29	27%	19	18%	59	55%	107	100%

Table 3 Cross tabulation of physical app. * no. of stories

Valid: 107 No answer : 0 Total: 107		Number of Stories						Total	
		1		2		3			
		No.	%	No.	%	No.	%	No.	%
Physical Appearance	Old	46	78%	13	22%	0	0%	59	100%
	Mixed	8	42%	10	53%	1	5%	19	100%
	New	15	52%	11	38%	3	10%	29	100%
Total		69	64%	34	32%	4	4%	107	100%

Table 4 Cross tabulation of physical app. * change

Valid: 103 No answer: 4 Total: 107		Change				Total	
		Yes		No			
		No.	%	No.	%	No.	%
Physical Appearance	New	27	100%	0	0%	27	100%
	Mixed	17	100%	0	0%	17	100%
	Old	24	41%	35	59%	59	100%
Total		68	66%	35	34%	103	100%

Table 5 Cross tabulation of physical app. * type of change

Valid: 66 No answer: 2 Total: 68		Type of Change				Total	
		New Cons.		Repair			
		No.	%	No.	%	No.	%
Physical Appearance	New	25	100%	0	0%	25	100%
	Mixed	13	76%	4	24%	17	100%
	Old	0	0%	24	100%	24	100%
Total		38	58%	28	42%	66	100%

Table 6 Cross tab. of physical app.*type of change*period of change

Valid: 62 No answer: 6 Total: 68		Physical Appearance	Type of Change						Total		
			New Cons.		Repair		Sub-Total				
			No.	%	No.	%	No.	%	No.	%	No.
Period of Change	1995-2004 Pre-Agha Khan Period	Mixed	2	67%	1	33%	3	100%	3	100%	5%
		New	11	39%	0	0%	11	39%			
	2005-2010 Agha Khan Period	Mixed	4	14%	1	4%	5	18%	28	100%	45%
		Old	0	0%	12	43%	12	43%			
2011-2014 Post-Agha Khan Period	New	12	39%	0	0%	12	39%	31	100%	50%	
	Mixed	7	23%	1	3%	8	26%				
Total		Old	0	0%	11	35%	11	35%	62	100%	100%
		Total	36	58%	26	42%	62	100%	62	100%	

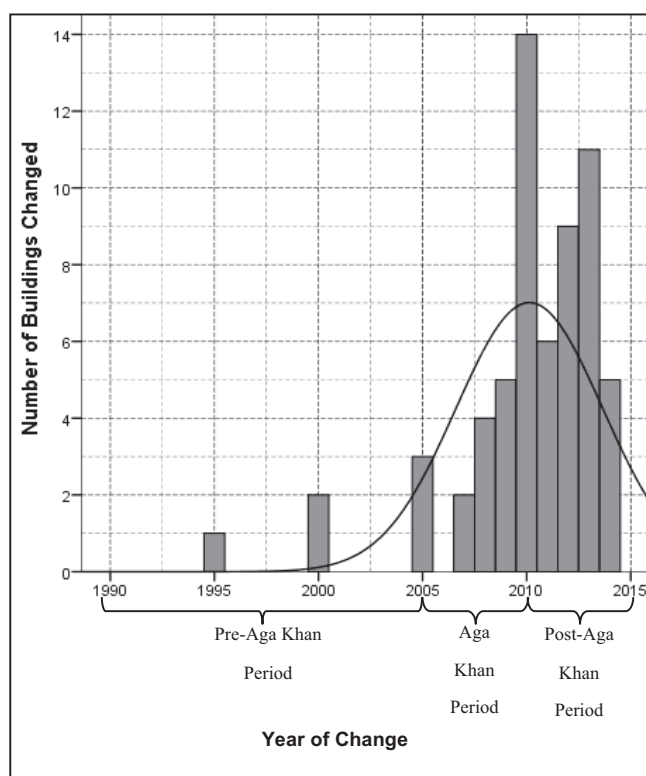


Fig. 4 Recent changes in physical app. of the study area

Table 7 Cross tab. of year of change * house location

Valid: 62 No answer: 6 Total: 68		Year of Change	House Location			Total
			Dead-End	Plaza	Allay	
			1995-2004 Pre-Agha-Khan Period	1995	1	0
2005-2010 Agha-Khan Period	2000	0	0	2	2	
	2005	0	0	3	3	
	2007	0	0	2	2	
	2008	0	0	4	4	
	2009	1	1	3	5	
2011-2014 Post-Agha-Khan Period	2010	2	3	9	14	
	2011	2	2	2	6	
	2012	2	1	6	9	
	2013	1	3	7	11	
Total		2014	2	2	1	5
		Total	11	12	39	62

during the post-Aga Khan period. Construction of new and mixed houses happens in all areas of the study area but, the constructions seem to have started first at alleys and then moved on to plazas and dead-ends. The reason behind this phenomenon, based on site observations, may be the lack of accessibility to houses in dead-ends. Usually the dead-ends are narrower and trucks which bring industrialized materials for constructions have to pass winding narrow accesses or even in some cases have to unload far from construction sites due to lack of accessibility. Distance from the Old City's two main streets and pavement conditions also affect the accessibility.

From the information provided, it can be concluded that the Momandha Quarter is under great pressure due to the changes that have taken place in the last 10 years. These changes were caused by the construction of new houses that began in more accessible parts of the study area and spread to other parts. New constructions because of the height (3 stories), materials (industrialized) and shape (flat roof), significantly influence the physical appearance of the study area, which is unseen in the history of the Old City.

5. Residential background of families in the Momandha Quarter

Of the total number of samples, 55% are 1stG, 12% 2ndG and 32% are the indigenous inhabitants of the houses (Fig. 5). As mentioned previously, the name 'Momandha' refers to a family name. In the past, relatives of the 3rdGL usually were living in the same neighborhood. Sometimes, two or three kin families were living together in the same house (Najimi 1988). This situation has since changed; 3rdGL families are now smaller. The study shows (Table 8) that the average number of inhabitants of 2ndG living together in same house is 12.4 persons; it is 9.4 for 1stG and 8.3 for 3rdGL, which means average number of 3rdGL inhabitants living together in the same house is smaller than 1stG or 2ndG.

The survey shows that 69% of the houses are inhabited by owners, while 14% are rented out and 13% are mortgaged (Fig. 6). More than half of the families live on their own or have one family of relatives in their neighborhood. 42% of 1stG and 69% of 2ndG inhabitants are living alone without any relatives in the neighborhood. On the other hand, 32% of 3rdGL are living alone and 38% have three or more

Table 8 Cross tab. of duration of living * no. of residents

Valid: 105 No answer: 2 Total: 107		Number of Residents										Total		Residents/house		
		1-5		6-10		11-15		16-20		20 <						
		Duration of Living	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	Min.	Ave.
1st G	8	14%	32	55%	16	28%	0	0%	2	3%	58	100%	3	9.4	40	
2nd G	4	31%	2	15%	4	31%	1	8%	2	15%	13	100%	4	12.4	30	
3rd GL	7	21%	21	62%	5	15%	1	3%	0	0%	34	100%	3	8.3	18	
Total	19	18%	55	52%	25	24%	2	2%	4	4%	105	100%				

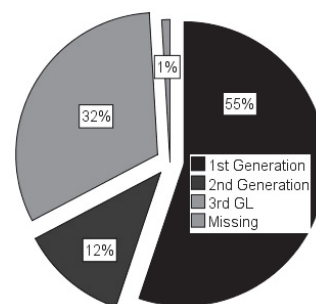


Fig. 5 Duration of living in Old City

Table 9 Cross tab. of duration of living * no. of relatives in neighborhood

Valid: 104 No answer: 3 Total: 107		Number of Relatives in Neighborhood:								Total	
		Alone		One Family		Two Families		3 or more			
		Duration of Living	No.	%	No.	%	No.	%	No.	%	No.
1st G	24	42%	10	18%	6	10%	17	30%	57	100%	
2nd G	9	69%	0	0%	1	8%	3	23%	13	100%	
3rd GL	11	32%	8	24%	2	6%	13	38%	34	100%	
Total	44	42%	18	17%	9	9%	33	32%	104	100%	

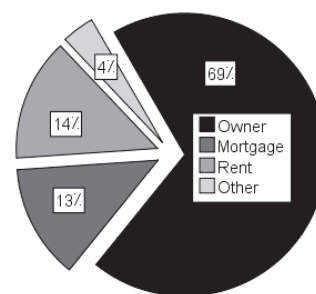


Fig. 6 Property ownership

Table 10 Cross tab. of duration of living * house ownership

Valid: 106 No answer: 1 Total: 107		House Ownership								Total	
		Owner		Mortgage		Rent		Other			
		Duration of Living	No.	%	No.	%	No.	%	No.	%	No.
1st G	30	51%	11	19%	15	25%	3	5%	59	100%	
2nd G	12	92%	1	8%	0	0%	0	0%	13	100%	
3rd GL	32	94%	2	6%	0	0%	0	0%	34	100%	
Total	74	70%	14	13%	15	14%	3	3%	106	100%	

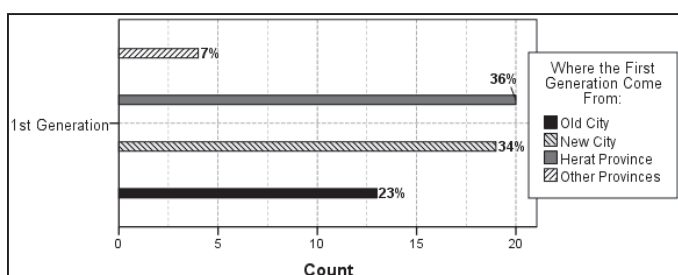


Fig. 7 1stG inhabitants come from different areas

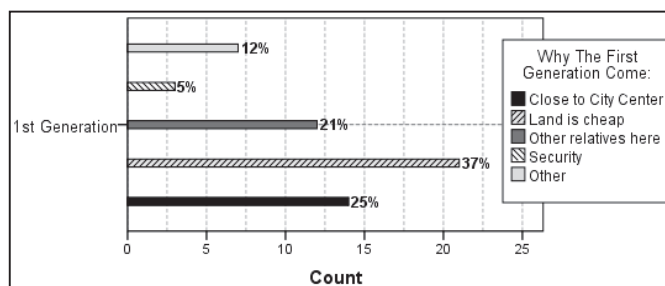


Fig. 8 Reasons of why 1stG inhabitants came to Old City

relatives in their neighborhood (Table 9).

The study shows that 36% of the 1stG inhabitants are from Herat Province, 34% from New City, 23% from different parts of the Old City and 7% from Other Provinces (Fig. 7). The new generation move to the site as property prices are considered lower than the actual land value. Other reasons for moving to the Momandha Quarter given by those interviewed include "Closeness to the commercial center", "Relatives are living here" and "It is secure place for living" (Fig. 8). Ownership gives one the right to change the structure of a house. Meanwhile, those who rent or mortgage a house can repair the house for their own use. Almost all of the residents of the 2ndG and 3rdGL are owners of the houses they live in. However, only half of the 1stG inhabitants interviewed are owners and the others are renting or have mortgages (Table 10).

As a result, not only have there been physical changes in recent years, but there have also been changes of residential background of families of the study area due to an influx from outside of the Old City, specially from Herat Province and the New City.

6. Mixed analysis of physical and residential background of families

We looked at the way in which the structure of the old houses had changed, and the reasons for those changes. 42% of inhabitants of the new houses are 1stG owners, 21% are 3rdGL owners and 17% are 2ndG owners. 20% are mostly 1stG, living in houses through renting, mortgages or other ways. Inhabitants of mixed houses are mostly 3rdGL (36%) and 1stG (31%) owners. 33% of the old houses are inhabited by 3rdGL owners, 21% by 1stG owners, and 29% are mortgaged or rented by 1stG. In general, the majority of the owners of the new houses are 1stG while the majority of owners of old houses are 3rdGL (Table 11).

Most of the residents of the new houses are 1stG and most of 3rdGL are living in old and mixed houses (Table 12). The number of 1stG living in old houses is also high. 62% of 1stG living in old houses moved from the New City, Herat Province and other parts of the Old City, and renting or mortgaging the old houses. The other 38% are owners of the houses they live in, and thus have the right to change the structure of their houses (Table 13).

Changes done at site are classified as either repair or new construction. Repair does not change the structure of a house, but because of use of industrialized materials, for example cement for covering, it changes the appearance of the house. New constructions like new houses or new parts of mixed houses significantly change the physical structure and appearance of the study area. 55% of new constructions are lived by 1stG residents. On the other hand, 52% of all repairing are implemented by 3rdGL (Table 14).

Among 1stG inhabitants of the study area, those who moved from the New City do the largest part of new constructions, those who moved from other parts of the Old City and Herat Province are next (Table 15). The new generation, who has carried out new construction on study area, mainly choose the area as they consider the cost of property in the study area is lower than its real value. Others mostly moved because their relatives are living in the neighborhood (Table 16). Migration of 1stG happened during and after AKTC projects of improvement of living environment. At the same time cost of property for the 1stG is considered low. These 1stG moved to the Old City and started to construct new houses in alleys which have relatively better accessibility. Then new constructions moved to

Table 11 Cross tab. of duration of living * house own. * physical app.

Valid: 106 No answer: 1 Total: 107		House Ownership								Total		
Physical Appearance		Owner		Mortgage		Rent		Other		No.	%	
New	Duration of Living	1st G	12	42%	2	7%	3	10%	1	3%	18	62%
		2nd G	5	17%	0	0%	0	0%	0	0%	5	17%
		3rd GL	6	21%	0	0%	0	0%	0	0%	6	21%
		Total	23	80%	2	7%	3	10%	1	3%	29	100%
Mixed	Duration of Living	1st G	6	31%	2	11%	2	11%	0	0%	10	53%
		2nd G	2	11%	0	0%	0	0%	0	0%	2	11%
		3rd GL	7	36%	0	0%	0	0%	0	0%	7	36%
		Total	15	78.9%	2	10.5%	2	10.5%	0	0%	19	100%
Old	Duration of Living	1st G	12	21%	7	12%	10	17%	2	3%	31	53%
		2nd G	5	9%	1	2%	0	0%	0	0%	6	11%
		3rd GL	19	33%	2	3%	0	0%	0	0%	21	36%
		Total	36	63%	10	17%	10	17%	2	3%	58	100%
Total	Duration of Living	1st G	30	29%	11	10%	15	14%	3	3%	59	57%
		2nd G	12	11%	1	1%	0	0%	0	0%	13	11%
		3rd GL	32	30%	2	2%	0	0%	0	0%	34	32%
		Total	74	70%	14	13%	15	14%	3	3%	106	100%

Table 12 Cross tab. of physical appearance * duration of living

Valid: 106 No answer: 1 Total: 107		Duration of Living						Total	
Physical Appearance		1 st G		2 nd G		3 rd GL		No.	%
Physical Appearance	New	18	62%	5	17%	6	21%	29	100%
	Mixed	10	53%	2	10%	7	37%	19	100%
	Old	31	53%	6	10%	21	36%	58	100%
Total		59	56%	13	12%	34	32%	106	100%

Table 13 Cross tab. of old houses * 1stG come from * ownership

Valid: 29 No answer: 2 Total: 31		House Ownership				Total		
Physical Appearance		Owner		Mortgage, Rent, etc.		No.	%	
Old	The First Generation Come From:	Old City	2	40%	3	60%	5	100%
		New City	1	11%	8	89%	9	100%
		Herat Province	6	46%	7	54%	13	100%
		Other Provinces	2	100%	0	0%	2	100%
		Total	11	38%	18	62%	29	100%

Table 14 Cross tab. of duration of living * type of change

Valid: 65 No answer: 3 Total: 68		Type of Change				Total	
Duration of Living		New Cons.		Repair		No.	%
Duration of Living	1st G	21	55%	9	33%	30	46%
	2nd G	6	16%	4	15%	10	15%
	3rd GL	11	29%	14	52%	25	38%
Total		38	100%	27	100%	65	100%

Table 15 Cross tab. of 1stG come from * type of change

Valid: 29 No answer: 1 Total: 30		Type of Change				Total	
		New Cons.		Repair			
		No.	%	No.	%	No.	%
The First Generation Come From:	Old City	5	25%	2	22%	7	24%
	New City	9	45%	2	22%	11	38%
	Herat Province	5	25%	5	56%	10	34%
	Other Provinces	1	5%	0	0%	1	3%
Total		20	100%	9	100%	29	100%

Table 16 Cross tab. of why 1stG come * type of change

Valid: 30 No answer: 0 Total: 30		Type of Change				Total	
		New Const.		Repair			
		No.	%	No.	%	No.	%
Why The First Generation Come:	Close to City Center	3	14%	2	22%	5	17%
	Land is cheap	8	38%	3	33%	11	37%
	Other relatives here	6	29%	2	22%	8	27%
	Security	0	0%	1	11%	1	3%
	Other	4	19%	1	11%	5	17%
Total		21	100%	9	100%	30	100%

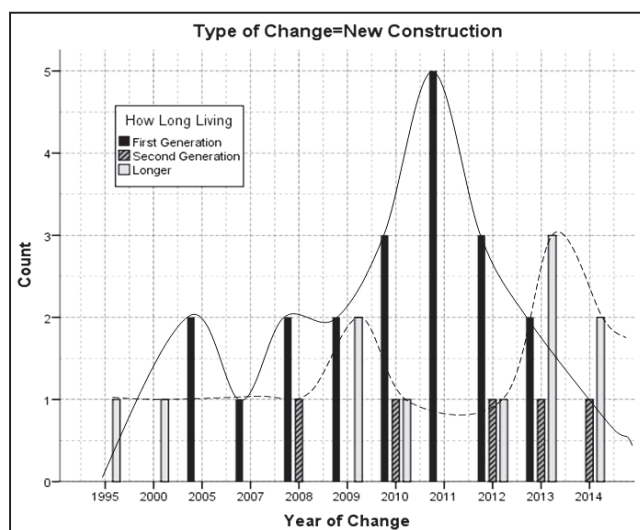


Fig. 9 No. of change in construction of the new houses

the less accessible parts like dead-ends of the Old City. The rate of changes implemented by new incomers is not equal to that of old inhabitants. The study shows that construction of new houses by 1stG began to increase around 2005, reached its peak in 2011 and then declined. After 2013, there has been a higher rate of construction of new houses by 3rdGL (Fig. 9). It seems the custom of maintaining old houses by 3rdGL is changing due to massive physical changes.

7. Conclusion

Based on reports of UNESCO and "Agreement of Conservation of Tangible Cultural Heritages of Herat" the entire Old City of Herat is defined as core zone and any new construction and repair that endanger the historic urban fabric of the area is prohibited. But, in recent years, especially since 2005, the Herat Old City has been facing the most drastic transformation in its history due to new constructions. The changes can be seen in both physical side and residents' background that influence one another. In particular, the development of public spaces funded by Aga Kahn Trust for Culture improved the living environment in Herat Old City, and at the same time new residents moved in. New residents renovate old houses with non-traditional materials or rebuild new houses entirely with industrialized materials, resulting in changes in the physical structure of the study area.

The Momandha Quarter is considered the most residential area of Herat Old City. However, half of its inhabitants are newcomers who moved from outside of the Old City because of higher cost of property elsewhere. Land value in this area is particularly lower compared to its real value. The study found that in this quarter, more than 40% of the buildings are either newly constructed buildings using industrialized materials or they are made of a mix of traditional and industrialized materials, changing the structure and appearance of the houses. Old buildings are usually one story high with dome roofs, while new constructions with industrialized materials in new and mixed houses have flatted roofs and have 3 stories high houses among them. These newly constructed buildings change the sky line of the Old City as well as its physical appearance. The new buildings were mostly constructed between 2007 and 2013, the same timeframe in which AKTC implemented site environmental improvements. Construction of new buildings was led by new comers from outside of the Old City, but by now 3rdGL inhabitants have also begun to do the same. The whole character of the quarter is rapidly changing due to these constructions. Without conservation efforts, much of the charm of the Old City will be lost.

The findings of this study on the Momandha Quarter suggest that the development of conservation means is urgently needed in order to conserve the character of the Heart Old City. Further field surveys are indispensable in other quarters of the Old City.

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Notes

- i) The Citadel of Herat, which has come to our day in its Timurid form, sits atop a mound at the northern edge of the Old City (Shahr-e Kuhna). It was saved from demolition in the 1950s, and was excavated and restored by UNESCO between 1976 and 1979. This citadel, which has been suggested as another possible site for Alexander's fort, is known today as the Citadel of Herat or Qal'a-i-Ikhteyaruddin.
- ii) The contents of legend of the Fig. 1c were added by authors to the AKTC's base map.
- iii) Herat had five gates named Darb-i-Malek, Darb-i-Qabchaq, Darb-i-Khush, Darb-i-Kandahar and Darb-i-Iraq. Nothing is left from these gates except the name which is still being used in daily conversation. People using these names for addressing the closest square of the related gates.
- iv) The contents of legend of the Figure 2 were added by authors to the AKTC's base map.

和文要約

ヘラートはアフガニスタン西部に位置するシルクロード時代から続く古都で、多くの文化遺産に恵まれている。しかし近年、急速な人口増加に伴い、ヘラート市内は大きな開発圧力に晒されている。本論文は、ヘラート旧市街の西南部に位置し、現在も比較的、アドベ造でドーム屋根を持つ伝統住居が残っているモマンダ地区を対象として、住居及び居住者の変化の実態を明らかにすることを目的として

いる。現地調査の結果、この地区は便利な立地の割に不動産価格が比較的安いため、特にここ 10 年の間に地区外から多くの新住民が流入し、近代的な素材や構法を用いて住宅の建て替えや改修を行っていることが分かった。またその結果、モマンダ地区の伝統的景観は急速に変化しつつあり、保全のための対策が急務であることも明らかとなった。

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