

Towards Conserving the Urban Vernacular in a Classical City: Bukhara, Uzbekistan

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Abstract

This paper presents the development and progression of the vernacular characteristics of Bukhara, Uzbekistan. It traverses the historical emergence of the city with its planning and spatial developments in the light of social, political and religious influences that have fathomed the city.

Bukhara's classical morphology – its frame of streets, squares and landmarks - remained relatively stable for centuries while the city's adobe houses within its plan's frame have been kaleidoscopically changed. In other words, the stable classical morphology has contained the changeable typology of the myriads of houses; the manifesto of the urban vernacular.

In the context of urban conservation, a city's identity and soul can be retained only if the totality of its built-fabric is maintained, restored and celebrated. The paper argues that in cities like Bukhara in Uzbekistan, the vernacular needs to be part of the historical conservation in order to ensure that it remains as a part city life; a life that exists not only in its classical colossi, but also in the ever changing architecture of everyday existence.

Keywords: Bukhara, Uzbekistan, Classical, Vernacular, Conservation

Introduction: the integrity of Bukhara's classical plan

To understand Bukhara's significance and to conserve it properly today, it's important to know that historically, with the expansion of Central Asia's Turks westward and southward, they took the model of Bukhara's plan for a range of capitals in the new Turkic states (Askarov, 2009). Repeated in these cities was not only Bukhara's citadel with the *shakhristan's* crossroad but the *Idgokh* on the north-west too (Fig. 1). *Idgokh* is usually an out-of-town open territory for festivities in front of a *Mussalla-Nomozgokh* prayer wall. In addition to that, the *mausolea* of these states' rulers were built on the west as the Samanids' burials in Bukhara (Fig. 2). As Bokhouddin Naqshband's complex on Bukhara's north-east, the holy places and shrines were built on those cities' north-east. The cream of the Bukharans made an influential religious and political fraction at the courts of India's *Temurids* and, with the Indian city of Khaidarabad becoming a bastion of Bukharan *Sunnies*, its architecture echoed in the 1807 Bukhara: Bukhara's famous Chor Minor, a gateway to Khalif Niyozqul's *madrassa*, was built by the prosperous merchant Niyozqul who, as many others, commuted for ages between Bukhara and India's Deccan, carrying goods and knowledge, of architecture too: "From time immemorial, merchants and riches brought goods from Gujarat and Malibar, but mostly from Deccan" (Khofiz, Tanysh 2000). Having turned the Turkic cities westward toward Mecca, for the ten centuries did Bukhara the Holy dictate the cult city canon, the placement of its buildings and complexes, and the style of architecture.

Bukhara as Model

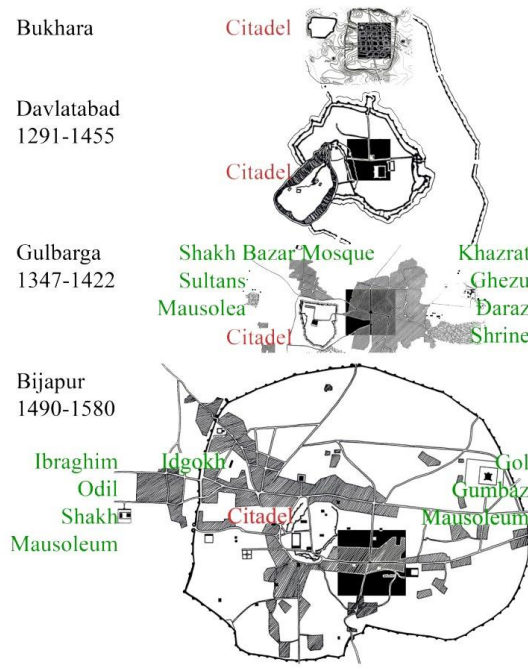


Fig. 1: Bukhara as a model for the 13th-16th century's capitals of India.



Fig. 2: The Samanids mausoleum as a model for the 14th-17th century mausolea of India.

During this time, urbanism was influenced by the Koran that connected a Muslim and his city's destiny to their righteousness:

“How many cities We have destroyed! In the night Our scourge fell upon them, or at midday, when they were drowsing. And when Our scourge fell upon them, their only cry was, “We have indeed been wicked men.” We will surely question those to whom the messengers were sent, and We will question the messengers themselves. With knowledge, We will recount to them what they have done, for We were never away from them. On that day all shall be weighed with justice. Those whose good deeds weigh heavy in the scales shall triumph, but those whose deeds are light shall lose their souls, because they have denied Our revelations”

(Penquin, 1956:99).

With its citadel towards Mekka, Bukhara the holy city was seen as resigning itself to God's wrath:

"I swear by this city (and you are a resident of this city), by the begetter and all whom he begot: We created man to try him with afflictions. Does he think that none has power over him? "I have squandered vast riches!" he boasts. Does he think that none observes him? Have We not given him two eyes, a tongue, and two lips, and shown him the two paths? Yet he would not scale the Height. Would that you knew what the Height is. It is the freeing of a bondsman; the feeding, in the day of famine, of an orphaned relation or a needy man in distress; to have faith and to enjoin fortitude and mercy. Those that do this shall stand on the right hand; but those that deny Our revelations shall stand on the left, with Hell-fire close above them"

(Penquin, 1956:99).

As Islam's learning center, Bukhara taught that God in the Judgment Day would spare the righteous city's obedient inhabitants. Even a holy *khadith* ascribed to the Prophet puts that, in the Judgment Day, Bukhara would be the most fortunate city because of its many *shakhids*, i.e. the fallen for the faith (Althamry, 1997). This is why the saints who had left Bukhara imparted its exemplary plan and architecture to their settlements in other countries, hoping for the Judgment Day salvation. The model of Bukhara as Islam's classical city includes, as we see, not only its historical core but the remote objects on this city's periphery too. Therefore, it is important to conserve Bukhara's integrity in this wide scale.

For the third century already the late 19th century plan by Parfionov-Fenin helps restore Bukhara's historical topography. The historical dynamics of Bukhara's formation was most trustworthy revealed by Bolshakov, Davidovich, and Filimonov. Decisive were their views of the *rabat* - a city form, usually of two walls, established with Islam's expansion in the 10th -11th centuries. Bolshakov showed them on his plan (Fig. 3) (Belenitskii et al, 1973). The plan was commented by Davidovich (Davidovich, 1978) who stated that: 1) Bukhara's historian Mukhammad Narshakhi (899-959) did not write (in 943-949) about two *rabats*, 2) a *rabat* wall was not a ring around the citadel and the *shakhristan*, 3) the south and the east between the *shakhristan* and the Shakhrud canal were open all the way through movements, 4) quarters of local merchants and craftsmen had gates to lock them up at night.

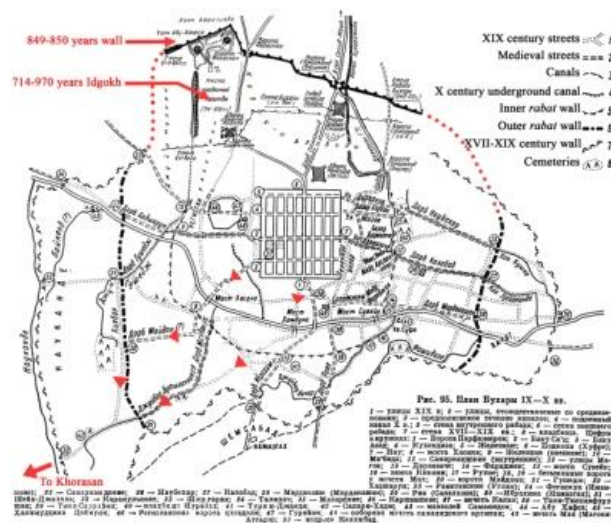


Fig.3: The 9th-10th centuries Bukhara plan by O.G.Bolshakov and V.M.Filimonov.

Filimonov (1988) has studied the northern part of the late 9th century *rabat* wall, not shown by Bolshakov, - and presented it. Bolshakov's and Filimonov's plans are put together by the author. Filimonov showed the 714-970 *Idgokh* mentioned by Narshakhi. The 714-970 *Idgokh* was embraced by the *rabat* wall of 849-850. From these, the following can be deduced.

- 1) The late 9th century wall became the first on the city's north to keep out nomadic forays.
- 2) The *rabat's* south got walled after Narshakhi: This means in the late 10th century.
- 3) At that time, evidently, the northern and southern walls were connected.
- 4) The so called inner *rabat's* wall either did not exist at all or it was so minor that vanished soon and left no memory of itself by Narshakhi's time.

Currently, a part of Bukhara's classical topography is being restored on the city's north-west by building the city's Khazrati Imom Gates (16th century) as well as by providing on an ancient cemetery beyond the Gates of public services and amenities, such as Imam Abu Khafs Kabir's mausoleum and the Friday mosque. Imam Abu Khafs Kabir Bukhari, popularly known as *Khojatbaror* (One who comes to the rescue, Benefactor) was born in 767 AD and died in 832 AD. He was the Islamic world's authoritative connoisseur of *sharia*, which is the Koran-based norms of the Islamic law, and systematized them for the practical use in daily life. It's widely believed that thanks to this founder of the Islamic law, Bukhara has acquired the fame of *Qubbat-ul-Islom*, Dome of Islam. The Imam, testifies Narshakhi, was buried on a hill north of the Khazrati Imom Gates. It was here and at a neighboring mosque Bukhara's population paid homage to him each weekend. The ancient cemetery was a burial ground of legendary rulers and Sufis. History connects the name of the Imam's son Abu Khafs Saghir (died in 877) with the formation of the Samanids' state (Yuldoshev et al, 2001). The mausoleum is being built on the place which Filimonov indicated as "hill of Abu Khafs", yet the "neighboring mosque" mentioned by the sources had rather been an open and vast *Idgokh*, not the Friday mosque building. Since the *Idgokh* place was to the south, Bukhara still has an opportunity of re-creating a grandiose ensemble for the city's festivities.

Pedestrian city: the module

City conservation cannot be confined to simply restoring historical topography. A historical city should survive in terms of contemporary planning principles and this is a complex problem of urban planning. Since the early 20th century's October Revolution, the Soviets kept an ideologically negative stance toward Uzbekistan's Islamic cities; one of the factors that may help understand Bukhara's current challenges. Since 1990s of Uzbekistan's independence, the continuity has been broken of scientific monitoring over urban design and urban development. The Uzbek Urban Planning Institute's scientific department ceased to exist while the urban planning norms, rules and conceptions of 1990s and 2000s were just repeating the conclusions of the 1980s. Bukhara's current problems could have been prevented by those urban planning recommendations which had been proposed in 1980s, and then partially introduced in urban planning norms & rules of 1994 and 2003. They have wanted verification in urban design and urban development. But that has not happened. So, what namely had been recommended as norm, but has not been implemented in urban development? In other words, where did the monitoring break off?

As other Islamic cities behind the Soviet 'Iron Curtain', the historical city of Bukhara suffered the intrusion of alien and inappropriate urban principles which the empire rashly borrowed from the West. Soviet cities were planned since the 20th century's second half by looking at Western norms, but saving on them: the German micro-district radius of 1500 m

(Gutchov, 1967) was reduced to 1000 m of Soviet district. For this reason, in the built districts 25 % of territories around residential blocks and 50% of territories of blocks' groups were not in use (Shevchenko, 1989). Outdoor and pedestrian life were absent in those districts (Askarov, 1990). This is why, for an alternative Uzbekistan's urban planning turned to study pedestrian systems of historical cities.

Integrity of the historical Bukhara's classical plan presumes preserving its pedestrian character perfected throughout the centuries. Pedestrian cities from Rome to Bukhara were growing within the 1500 meter and maximum 2500 meter radii. These radii were used in the past as growth modules on new territories, as we see in Constantinople or Isfahan. The radii created *forma urbis* and kept these cities' size and pedestrian character until the 19th century. The late 9th - late 10th centuries Bukhara consisted of the inner and outer rabats, each of 1500 and 2500 m radii. Then, Bukhara's city canon was imparted on the type of cities in the Seljuk Empire (11th-14th centuries). Therefore, it is logical today not only to conserve the historical cities within these radii, but take these radii into consideration while forming transportation networks and new districts in cities. The historical cities have the clearly fixed parameters of their pedestrian plans (Askarov, 1988). The pedestrian parameters must form the fabric of the city districts while the transport should be the means for cultivating their pedestrian culture. The question is what has been done in this direction?

From 1970-1980s, the Soviet districts' 1000 m radius was recommended to enlarge up to the pedestrian 1500 m radius (Askarov, 1989). In 1994 and 2003, the 1500 m were accepted by the Urban Planning Norms & Rules as "pedestrian accessibility for new districts" but ignored in their part "Protection of cultural heritage objects" (State Committee, 1994). Such an inconsistency in accepting the scientific recommendations happened because in that period of the transition to a market economy the Uzbek Institute for Urban Planning was breaking up, while its works on city monitoring were not appreciated, and thus became unnecessary.

The ICCROM, UNESCO, and ICOMOS see historical city's and its zones' parameters as paramount in providing them with accessibility and services (Feilden et al, 1993). Therefore, it is necessary to restore the broken continuity in city monitoring, and implement the urban studies' results – particularly the 1500 m radius district structure in Bukhara's forthcoming master plan and in the monitoring of its implementation in the city's development. History and modern international norms require keeping the cities' pedestrian character. Cities are first of all for pedestrians, and only then for transport, which is to serve them. The pedestrian city has certain parameters which must be respected, and within these parameters a clear urban policy must be carried on, - they are explained in this text and shown in its concluding models. Now, let's see, what this process should begin with.

Margins and core: the parameters

The mass destruction of Bukhara, this center of the Islamic civilization, began since 1920s, when "shelled by cannons and machine guns for four days and four nights, the city's half was ruined, 50000 citizens died, and the power was seized by the Bolsheviks" (Amir, 1991). The following class struggle liquidated the cream of Bukharan society. Pierre Vago, the editor of the Paris-based "L'Architecture d'Aujourd'hui" international magazine, visited Bukhara in the late 1980s to find that the city had been "defiantly forgotten" by the Soviets (Architecture and Construction, 1990). The 2002 Bukhara inspections by Germany's Bochum University scholars found that the 20th century left only 22% of public buildings – architectural monuments – which had been documented as existing in the 19th century (Gangler et al, 2004). (Fig. 4)

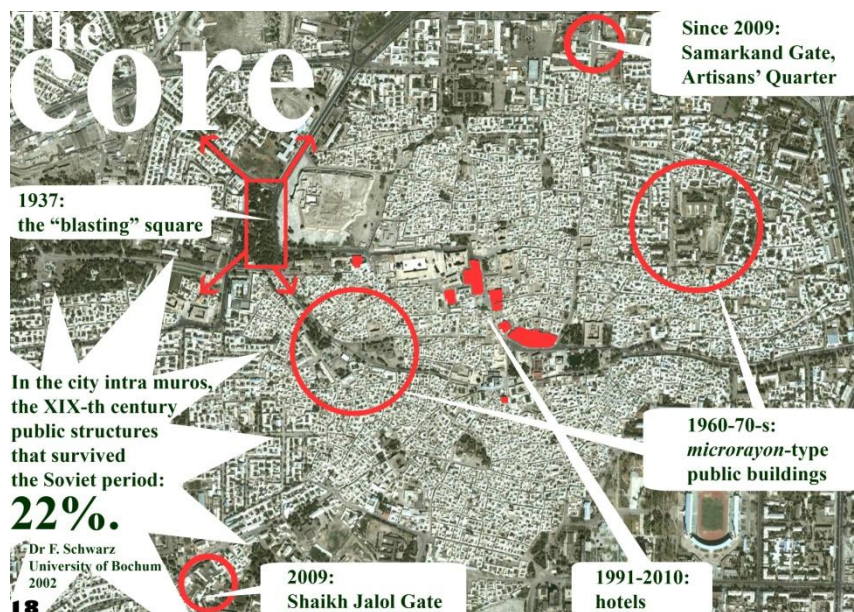


Fig. 4: The major intrusions into late 19th-early 21st centuries' Bukhara core.

The second means of the Soviets in ruining Bukhara, after the weapons, was transport. The 1937 master plan's four thoroughfares scatter like an explosion from the Reghistan square in front of the Ark citadel. In the absence of an efficient ring road protecting Bukhara, transport used to get its way across the historical city center in the east-west direction. Currently, the southern Soviet center is about to be connected with a newly-conceived Center on the north, and that connection will pass through the historical city's east. Transport was and continues to be in service of the historical city's destruction, not its conservation. While the problem of transport is not being solved by urban planning means, the city defends its core by the barriers, which are not efficient and just make a semblance of deterring transport in waiting for fundamental measures on historical Bukhara's conservation. In the meantime, the rumors spread among citizens about upcoming widening of streets like Khaqiqat, Khoja Mirobod, Samarkand, and Arabon. Despite these, families living along them spend their savings on renovation of dilapidated houses. The penetration of transport from the margins into the core destroyed planning and architecture of the historical city and its *makhallas*.

This is seen in the transformations of the city's historical fabric by the 20th century. Bukhara was once composed of 12 units called *jaribs* - each consisting of *guzars* with a main street and mosques as centers of adjacent *makhallas* (Fig. 5). Central Asia's most urbanized Late Medieval Bukhara developed the *jaribs*, residential districts specialized in certain crafts and/or industries.

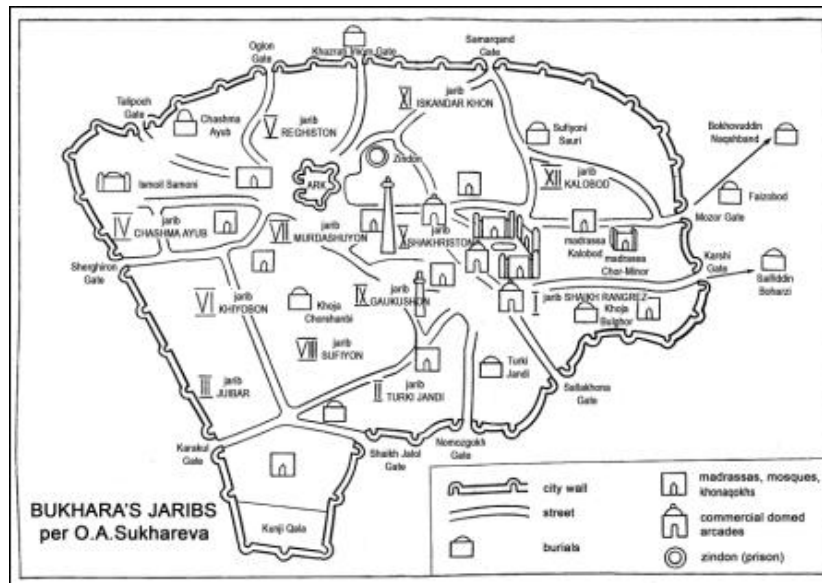


Fig.5: Bukhara's *jaribs* per O.A.Sukhareva.

These major divisions marked the city's response to Europe's capitalistic advent in the region. While the *jaribs* were long forgotten, the Soviets renamed *guzars* as quarters, since 1963 as *makhallas* (for units exceeding 500 inhabitants), and then called premises of *guzar* mosques (!) as centers of microrayons (Sukhareva, 1976). On the south-western margin of the historical core, between two long 2-storied residential blocks of 1930s and Tursunjon *madrassa*, schools #9 and #10 were built, then a clinic, a drugstore, and an internet-café. On the north-eastern margin of the core – school #5 amidst low-rise houses, a hospital, an archive, a tailor's and other shops. Unlike *guzars* and *makhallas*, these “microrayon centers” are open to transport all the way through. The historical core has lost its pedestrian character to such a degree that present day Bukharans hardly identify themselves with their former *makhallas*. Even on *shakhristan's* north-western edge, where its elevated position keeps deterring penetration of transport and its Hellenic regular planning can still be traced, traditional communal centers vanish as well as ponds-*khovuzes* – the city's long forgotten social attractions – now nearly all filled up.

Historically, Bukhara's core was growing as a *bazaar* ensemble from the Ark citadel up to the Labi Khovuz, - such a classical *bazaar* existed also only in Syria's city of Khaleb, before its recent bombardments. The Soviets did not dare to reconstruct the famous streets of the Bukharan *bazaar*. But the current transition to a market economy and profiting on tourism caused along these streets an unprecedented boom of hotel building with no culture of composition, ignoring the style of these historical streets as well as of their environment. The hotels have imposed an alien style upon the historical core. Towering with their stereotyped portals over the monuments of the past, they – as a local resident aptly put it – “stifle” the city.

Much more hotels have popped up in *makhallas*. Here, the prices for houses get artificially reduced, inhabitants driven out, and their houses sold for hotels and shops. Several houses get purchased by one person. The mass purchasing and restructuring jeopardize the continuity in architecture of Bukharan houses. On sale are both functions and appearances of both houses and *makhallas*. As a result, the whole historical city gets diminished in value (Fig. 6, 7).



Fig. 6: The market face of a slum compound in the historical Bukhara's Samarkand Street.

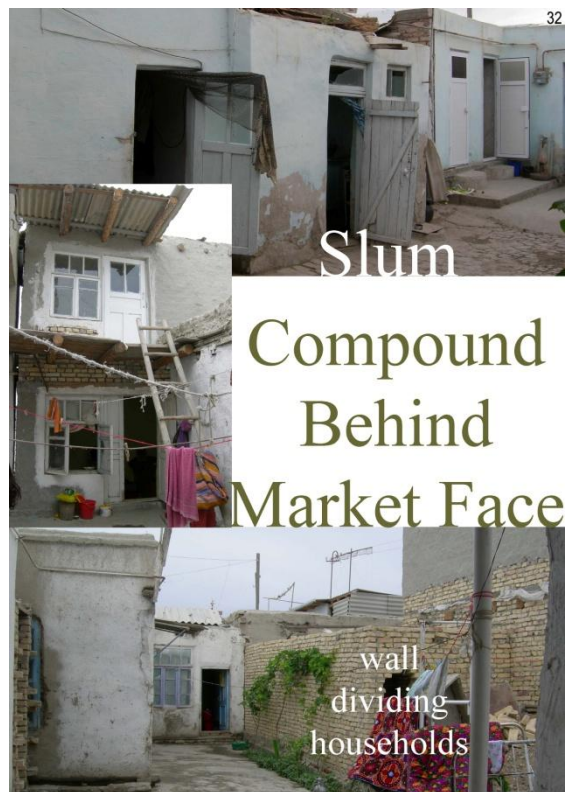


Fig.7: The views of the slum compound.

Each Bukharan house presents a unit constructively independent of neighboring houses. Due to some space left in-between households, a house can be connected to and/or extended into neighboring courtyards. By doing so, renovation of these cells in the urban fabric went on painlessly. This way the urban fabric has historically evolved. The necessity of the 60 centimeter in-between space has been discussed but not observed in Bukhara's new constructions. It's for this reason, flush against the house #122 in Bokhouddin Naqshband Street a hotel is built, with its four stories sinking down into Bukhara's weak ground and its concrete frame scraping against the old adobe house so that its wooden ceiling's cracking sounds deprive the dwellers of sleep at nights (Fig. 8). Hotels pull down remote houses too: their escalators cause vibrations and sink down. Due to hotels, electric power has decreased in the historical city. An electric cable has been drawn up with two transformers to reduce its industrial power. This dangerous decision can cause fire and explosion. Tap water, like electricity, functions irregularly. Hotels pump up to 10-15 tons of water into cisterns while there is no city sewage system. Several private hotels have united their sewage and that has minimized sinking down and salinization of walls. Such an initiative raises queries: why not do this for houses?



Fig. 8: The house #122 and a hotel hovering over it in Bokhouddin Naqshband Street.

Today, market economy fever has gripped shaky Bukharan ground. One of Islam's most urbanized cities, Bukhara was once called by the 10th century Arab geographer Maqdisi "Central Asia's loo" (Rempel, 1981). The city's sanitary condition is still a problem. Even now a stinking toilet common for an entire alley or a slum compound can be found. Toilets' as well as sewage waters' pits are cleaned by residents once in several years. No one knows where waters go to. Maybe, they say, into the 10th - 16th century underground canals, arched and of burnt brick, which vanish somewhere on their way to out-of-town lakes. From ceramic *tashnav* tubes in courtyards, 60-70% of sewage used to go in underground *tazar* canals farther into arched canals under the city. These spacious canals were cleaned on *arba*-carts in springs and autumns. Bukhara's ground waters used to go into collecting *zakash* ring around the city. These traditional systems as well as Soviet time drainage are clogged up and have ceased to function. That makes ground water get up, salinize walls of monumental and residential buildings, crack them, and pull down. Hydrogeological studies are urgently needed to launch immediate actions on the territory of the whole city.

Houses: the typology

Margins and core of the historical Bukhara have for centuries been woven by the ever changing net of houses. The lifestyles of the Bukharans (Asia's Parisians, as they were called) have been imprinted in these houses' typology. While Bukhara's classical morphology—its frame of streets, squares, and landmarks—remained relatively stable for centuries, the city's adobe houses within its plan's frame have been kaleidoscopically replaced. In other words, the stable classical morphology has contained the replaceable typology of the myriads of houses; the manifesto of the city's vernacular life.

The international standards prescribe that Conservation Master Plans for World Cultural Heritage Sites “must be based on systematic analysis of the typology and conditions of the building stock” (Feilden et al, 1993). For that reason, this study of Bukhara paid close attention not to worldwide famous colossi but rather to modest cells weaving the unique urban fabric, the main container of the urban vernacular. By doing so, our time can contribute to the centuries-long evolution of the urban vernacular. As a result of such an approach, formerly neglected building types have been brought up, like tiny charming *madrassas* and *caravan-sarais* of the “decadent”, as believed, 18th - 19th centuries as well as drastic changes taking place in Bukharan *makhallas*. Significantly enlarged has been the documentation on Bukharan houses; the main object of the UNESCO's studies. Architectural scholarship created some stereotypes about Bukharan houses (Pugachenkova et al, 1965). Some materials on them are less known or sank deep in archives (Rempel, 1960). The UNESCO mission revealed that Bukhara's houses are much diverse than those stereotypes and deserve detailed typological classification, its acceptance by the city's master plan, preservation of houses, and their inclusion in tourist itineraries as special themes to learn from (Fig. 9).



Fig. 9: Merchant's house, Sarrafon Street.
Renovated by the Tashkent UNESCO and the Israel Embassy.

Inside the historical city's fabric, some shanties are hidden: they are in centers of quarters and, for that reason, hard to notice (Fig. 10). A tiny door opens into a narrow, long and dark passageway between neighboring houses and ends up in cozy courtyards with rooms-cubicles around. Such is an absolutely wonderful house situated near the Khoja Zainuddin and belonging to a Miri Arab *madrassa imam* (Fig. 11).



Fig. 10: Smallest houses: ups and downs.



Fig. 11: *Imam's* house near the Khoja Zainuddin complex.

More characteristic for Bukhara's tightly knit urban fabric are two-storied, although simplest, houses. There are also multi-storied houses demonstrating impressive virtuosity of their owners; a skilful traditional builder or today's professional builder. Typical of Bukhara is the Samarkand street house, once 4-storied but now just 2, of Usto Abdukhamid; the master of traditional painting (Fig. 12).



Fig. 12: Painter-craftsman's house in Bukhara's Samarkand Street.

There are houses of special urban planning value. They, for example, form the *shakhristan's* southern edge, and from here command views on the historical core around, such as the *Dolon* house. To a couple of school teachers owning a house on the roofs of the *Toki Telpak-furushon* and the *Kuleta caravan-sarai* – it commands fantastic views on buildings around.

The Faizulla Khodjaev family's grandiose house with its unimaginable *iwan* should be considered the peak in evolution of Bukharan residences. It presently has an interesting museum (Fig. 13). Comprehension of the theme is also necessary for the ceremonial and pompous house of a Bukharan Amir courtier. The house survived on Usto Shirin Street, and is tactfully restored (Fig. 14).



Fig. 13: Faizulla Khodjaev's house: *iwan* and decoration.



Fig. 14: The renovated house of Bukharan Amir's courtier, Usto Shirin Street.

Further evolution of the Bukharan house is presented by several residences of prosperous merchants built in the late 19th - early 20th centuries by Russians using their newly-brought construction materials. The present dilapidated condition of these houses must signal the alarm bells to all those who care for Bukhara's cultural value. The diversity must be cultivated of Bukhara's survived houses. To do so, it's necessary to typologically systematize all the investigated houses, and make them visible in the master plan. This will help define the necessary degree of conservation and the appropriate functions of zones within the historical city.

In the long run, we need to realize that Uzbekistan's construction activity in this classical city presents also a kind of contemporary urban vernacular. This is how the problem is made complex and also why the respect is needed for the splendor of the urban vernacular of the past.

Conclusion: the conception

The historical city's pedestrian parameters are to define the conservation of its morphology, i.e. its classical landmarks and its planning structure which contains the ever changing housing types of the vernacular lifestyles. The UNESCO, ICCROM, and ICOMOS consider the historical city parameters as paramount for providing the city with accessibility and services (Feilden et al, 1993). From Constantinople to Bukhara, the historical cities were growing along the Eurasian Corridor within the constant pedestrian radius—2.5 kilometers on the average. The following recommendations are crucial for the historical Bukhara's survival.

1. **Norms and Law:** The historical city of Bukhara is in the condition violating not only the UNESCO norms but also the Norms of the Republic of Uzbekistan. The 1976 UNESCO Norms on the historical zones' self-conservation will help reorganize the management of the historical city, provide it with the juridical status and its own managing personnel. Such a center under the city *khokimiyat* will direct residents and entrepreneurs towards stepping up of *makhallas'* economic potential and communal policy of self-conservation, including reconstruction by private sector and entrepreneurs.

2. **Depopulation and Transport:** It's urgent to stop the historical core's depopulation by controlling its population number and by creating centers of attraction and places of jobs. The core must be pedestrian. The territories on the periphery should protect such a character of the core and be planned anew to create poles of attraction for citizens. Thoroughfares must be considered the serious violation, and transport accesses into the core should be made as cul-de-sac and/or loop.
3. **Water ways:** Water is Bukhara's scarce resource. Historical ponds-*khovuzes* are filled up and their communal centers have disappeared (Fig. 15). Irrigation of ponds must be renewed and irrigation near walls of architectural monuments not allowed. High ground waters salinize monumental and residential buildings, crack them, and pull down. The city struggles for proper sanitary condition. Drainage systems of the past have ceased to function. Hydrogeological studies are needed to drain off ground waters by cleaning old systems and implementing new ones. Water supply and sewage should be brought to contemporary standards.



Fig. 15: The surviving and vanished centers of Bukhara's historical core.

4. **Hotels:** The transition to a market economy has brought tourist hotels right into the historical core. Towering over the monuments, they have imposed alien scales and styles on them. Hotels must be beyond the historical core, not amidst it. Control of land use is necessary.
5. **Residential Houses:** Bukhara boasts Central Asia's most refined traditional houses. They and the whole *makhallas* are being transformed today by an industry of tourism. To profitably rent houses, owners add floors, and the emerging new architectural language violates the traditional style. Houses, as hotels, try to tower over the historical core to trade "the best views on the city". This glorious city's history should be saved from the destructing chaos of money making by tourism.

6. **Adobe:** In *makhallas*, houses get rebuilt in burnt brick or reface their old wooden-frame-and-earth walls. The historical core gets robbed of its integrated adobe image well kept over the centuries. The respect is important for this construction material traditional to the city. It needs the culture of constant care. Its obligatory use must be ordered for the historical city's important fragments. Special personnel must be trained for maintaining adobe structures, as this is prescribed by the UNESCO.

The 2009-2011 UNESCO studies' Growth and Conservation Model (Fig. 16) consists of the following major factors.

- 1- Transportation Network on 2,5 kilometer radius,
- 2- Hotels Out of the historical core,
- 3- Cul-de-sac and Loop as means of transportation flexibility inside the historical core,
- 4- Jobs at Makhalla Centers revitalized throughout the historical core,
- 5- Water Drainage/Supply and Sewage, and
- 6- Bazaar & Makhalla scenario to properly design functions-spaces-forms, and then monitor their implementation.



Fig. 16: Bukhara's growth: major nodes and directions. Growth and conservation model.

The historical city's margins at the 1200-1500 m radius are already occupied by the new developments, but still there is a chance of saving the historical core within the 700 m radius. On this 700 m radius, there are five key zones beyond which new developments from the margins must not intrude. The *bazaar* ensemble from the Ark to the Labi Khovuz deserves reconstruction by the announcement of a world competition while the zone from that *bazaar* within the 250 m parameter must be strictly kept as pedestrian with careful restoration of local *makhallas'* historical appearance. The 700, 1200, and 2000-2500 meter pedestrian radii should be accepted for the historical Bukhara's Conservation Master Plan as the basic parameters required by the abovementioned international standards.

To sum up, Bukhara's conservation is being suggested within the following pedestrian parameters: 250, 700, 1200 (1500), 2000 (2500) meters. Up to 250 m – only pedestrian historical environment, only local residents' transport authorized (Fig. 17). Up to 700 m – strict conservation of historical morphology, regulated transport entry. Up to 1200 (1500) m – maintaining of historical morphology, any new construction must conform to Bukhara's architectural typologies. Up to 2000 (2500) m – morphology control, control of new construction heights.



Fig. 17: The 250m pedestrian core and the marginal five zones for the core's viability.

As a result of the UNESCO's Bukharan missions, about 100 houses of high interest and about 140 houses of average interest have been identified, and these best houses have been shown in the morphology of the historical city's residential quarters (Fig. 18).

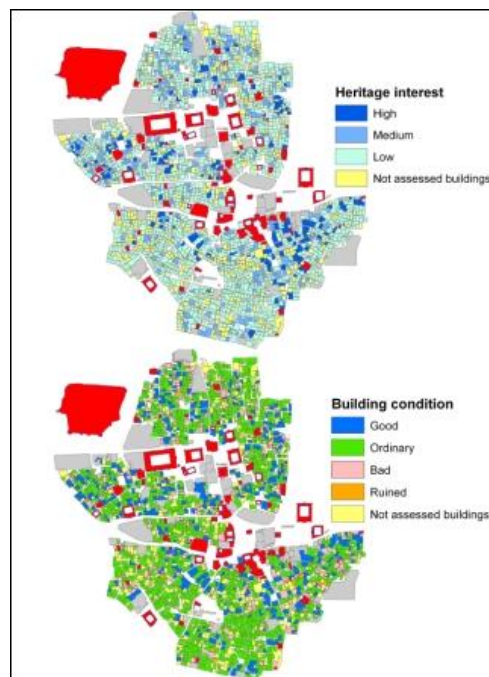


Fig. 18: The historical Bukhara's fragment plan showing the house types revealed in the city's morphology during the UNESCO studies.

This document on the morphology of Bukhara's best houses should be used as a basis for a further urban planning document. Having conserved the best houses, the new low-rise housing should be designed in order to replace the neighboring dilapidated and/or abandoned houses, or to fill in the morphology's gaps. While filling in, the houses being conserved should be provided with conveniences they need or with additional spaces, - this may be done at the expense of the demolished dilapidated and/or abandoned houses. Such a new low-rise development must stylistically conform to the existing old one. It must not suppress the morphology's best houses, assisting rather in assessing them properly. Respecting the morphology's best houses, the new low-rise development should be, at the same time, hidden behind the conserved old structures, - or this development should be framing the old structures.

Bukhara is undertaking certain actions to preserve the historical city's pedestrian network by restoring and rebuilding its gates as well as by designing the densely built low-rise residential complexes which remind traditional quarters. The problem, though, is that these actions under-estimate the pedestrian. The gates are designed and built in accordance with the architectural traditions, but placed against the urban planning traditions. They do not let the movement through. Shut up, they tower in-between the new road fork with its traffic rush into the crumbling adobe streets up to the historical core. In other words, instead of functioning, the gates turn dummy. This is against the historical city, its life and its conservation.

What then should be undertaken? Transport must be taken away from the historical gates and streets into the new streets which run parallel to the historical streets being conserved. In other words, transport should serve the historical streets from behind, as is shown for the conservation of Bukhara's Samarkand Street (Fig. 19). Behind these historical streets, the 20th century has spoiled enough of Bukhara's morphology, having intruded too deep, and having created the five key zones which are crucial for the city conservation. In these five zones, the new public buildings and houses have been built - therefore, it is these territories that are to be reconsidered for the sake of the historical city's conservation. The transport must stop in these zones, and serve the historical core from there - invisible as far as possible.



Fig.19: Bukhara's Samarkand Street Conservation: the pedestrian core to be preserved and the new development areas on its margins.

Bukhara's historical morphology has been destroyed by two factors. The first is ambitious actions altering the city, including unrestricted play ups with architectural monuments. The city must preserve its medieval character, especially around its famous objects. The other morphology killing factor is everything that is being brought up by contemporary urbanizations. The last one must stop at the historical city's border, help conserve it, and enter it tactfully.

For today's historical city, we have the picture of its encroaching margins and decaying core. This should be the alarming signal for city authorities, planners, and conservation bodies. In 1970-1980-s, master plans and projects of detailed planning tried to control the historical core. In 1990-s, their recommendations for conservation were forgotten. It's time today to re-evaluate them and save the city from the destructing chaos of money making through tourism by all means. In other words, further destruction must be prevented by planning. We have to admit that the historical city's margins in the 1250 m radius are non-existent and already occupied by new developments, but still there is a chance of saving the viability and the image of the core within the 800 m radius. On this 800 m radius, there are five key zones beyond which new developments from the margins must not intrude. The *bazaar* ensemble from the Ark to the Labi Khovuz deserves reconstruction by announcement of a world competition while the zone from that *bazaar* within the 250 m parameter must be strictly kept as pedestrian with careful restoration of local *makhallas*'s historical look. These parameters should be accepted as the basis for both the Bukhara Conservation Master Plan and the Norms for Implementation, as required by the international standards (Feilden et al, 1993).

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GLOSSARY FOR NON-ENGLISH TERMS

- Amir – Bukhara's ruler (if capitalized as in this article), or military commander (if not capitalized).
- Arba* – cart.
- Bolshevik – a Communist of the Soviet Union.
- Caravan-sarai* – inn with a central court, where caravans stop for the night.
- Guzar* - urban community with a center and several adjacent *makhallas*.
- Idgokh*- an out-of-town open territory for festivities in front of a *mussalla-nomozgokh* prayer wall.
- Imam* – the leader of prayer in a Muslim mosque.
- Iwan* – covered terrace.
- Jarib* – Late Medieval Bukhara's residential district specialized in certain crafts and/or industries.
- Khadith* – narration, account; report of the actions and sayings of the Prophet.
- Khokimiyat* – city administration, city hall.
- Khonakokh* – literally: large room. An institution of Sufism, a special form of Islamic mysticism.
- Khovuz* – pond.
- Madrassa* – a school for the study of the religious sciences, especially jurisprudence and theology.
- Makhalla* – residential quarter within *guzar*.
- Mussalla-nomozgokh* - an orientated toward Mekka out-of-town prayer wall in front of which citizens' festivities also took place; it gave birth to the *mussalla* mosque.
- Rabat* - city form, usually of two walls, established with Islam's expansion in the 9th-11th centuries.
- Shakhid* - the fallen for the faith.
- Shakhristan* – Early Medieval inner city, near or around citadel.
- Sharia* - the Koran-based norms of the Islamic law.
- Sufi – a Muslim following the principles of Sufism.
- Tashnav* - courtyard's sewage pit.
- Tazar* – city's underground sewage canal.
- Zakash* – underground sewage collecting ring around a city.

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