Abstract

In the 16th century, the types of architectural structures were improved, many public buildings and structures (caravanserais, bridges, cisterns, baths in cities, tim and other stalls) were built, the history and appearance of monumental buildings were changed. The city of Bukhara is surrounded by a thick and high wall (up to 10 meters) with city gates. Large buildings used the traditions of folk architecture, and monumental buildings began to be built outside the city.

Keywords: Caravanserais; Bridge; Cistern; Bath; Mountain; Building; Minaret; Shopping Mall; Madrasa; Mosque; Minaret; Architect

Introduction

In the architecture of the XVI-XVII centuries, the construction of buildings was further improved. The mosques are built in the style of palaces, and the guzar-mahalla mosques are built with large terraces in winter and summer. One of the monuments erected in Bukhara during this period is the Poyi Minor ensemble. It consists of the Grand Mosque, built in 1514, and the Madrasa Miri Arab, built between 1530 and 1536.

The ensemble, known as the Twin Madrassas, consists of the Madari Khan and Abdulaziz Khan madrassas. Built between 1566 and 1567 and 1588 and 1590, the two madrassas were built facing each other. Madari Khan Madrassah is simple and Abdullah Khan Madrassah is very complex.

The front of the Madari Khan madrasah is decorated with arches typical of the Bukhara madrasah tradition. There are two terraces behind the main roof and in the courtyard opposite it. The structure of the building is in the form of a therapy, on both sides there is a winter classroom and a mosque. The Abdullah Madrasah, with its bouquets of corners, exterior decorations, and partially lined tiles and tiles, is a testament to the history of the period, the solutions of its rooms, and other aspects of the architecture of the period. If we look at the history of this building, we can see that it is unconventional.

For example, there are four porches in the courtyard, and the rooms in the madrasa are surrounded by a closed courtyard. The main roof of the madrasa is also bordered by two bouquets. There are street-facing rooms between them (Ahmedov: p.67).
The front of the building is tiled with bricks and tiles, the roof and porch are decorated, and the classroom is decorated with rivets. The carving on the gate of the madrasah is identical to the gate of the Kokaldosh madrasah in Bukhara.

**The Main Findings**

The Havzi Nav ensemble, built by Abdulaziz Khan in the expanded part in the 18th century, or the relatively well-preserved Voidai Abdulaziz Mosque and the Joybori Kalon madrassas in front of it, were built in a unique architectural style. The ensemble also has a number of unique architectural solutions in the vicinity of the Khalifa Khudoydod complex, the Khalifa Niyaz Madrasa, also known as the Chor Minor, the Khoja Zayniddin and Bola Hovuz mosques. During the study period, a unique school for the construction of housing was created in the Bukhara Khanate. The houses here were two- or three-story, depending on the city and the conditions of the city. The “birun” part of the houses and the “darun” part of the houses consisted of ancillary buildings. The summer rooms facing north are called “summer” and the winter rooms facing south or west are called “winter”. Each set of rooms is connected to the central room through doors. The summer room with high ceilings is designed for guests and is called “madon”. The “king” decorated with tiles is for distinguished guests.

There is a high porch with many columns adjacent to the houses. There were porches on the roof of the first floor, which were comfortable to sleep in during the summer months. The interior of the halls consisted of a double wall and a roof covered with beams. There are high and low shelves on both sides of the wall, as well as doors and windows with carvings and decorative bars. The top of the wall is plastered with plaster and a cornice of “honor”. One-sided walls without shelves are made of cast-in-place shelves. The shelves are painted in bright colors such as red, blue, dark red and green. The main part of the wall decorations is a bouquet of flowers, flowering tree branches, willow branches. Ceiling decorations make the room more beautiful. The ceiling is divided into pools. The surface of the rectangular hares in the middle is decorated with rope carvings and floral ornaments. The beams are beautifully decorated with vassals. The ceilings and walls of Bukhara houses are unique (Azamat: 2000, p.250).

During this period, the mosques of Mir Arab, Abdullakhan, Modarikhan, Govkushan, Joybor, Muhammadkhoja, Khoja Zayniddin, Chor Bakr, Jewelers, Sarrafs, Telpakfurushlar, Oqchilar, Unfurushlar mountains, Abdullahkhan timi and others were built in Bukhara. According to the data, during the reign of Abdullah II alone, 1001 rabats and sardobas were built in Bukhara. According to the data, during the reign of Abdullah II alone, 1001 rabats and sardobas were built in the region.

In the XVI-XVII centuries Bukhara architecture and construction flourished. The master plan of the city has changed. The city was rebuilt. One of the unique architectural monuments of this developed period is the Grand Mosque. The Juma Mosque was originally built in 1121 on the site of the Kalon Mosque. Over time, that structure collapsed. By 1514, the building was rebuilt as the Grand Mosque. Although the size and architectural decoration of the Kalon Mosque is not to that extent, it is not inferior to the mosques in Samarkand and Herat in terms of its planned scale. In terms of antiquity and size, this building is second only to the Bibikhanum Mosque in Samarkand. The main facade of the monument faces east. The roof of the mosque, which is large and decorated with mosaics, is located a little higher. The courtyard of the mosque is entered by a staircase consisting of several steps. There are two blue domes on either side of the courtyard.

This courtyard, which has a straight rectangular shape, is surrounded by a gallery of 228 domes. The interior of the building is solemn and mysterious. It has preserved many architectural finds. Mir Arab Madrasah is world-renowned and one of the largest religious universities in the Muslim world. The Mir Arab Madrasah was built between 1520 and 1536 under the leadership of Abdullah Yemeni, known as Mir Arab. This academy is a magnificent architectural monument that is the product of human thought. The roof of the Mir Arab Madrasa is located on a single axis with the portal of the Masjid Kalon.
However, the madrasa was built a little higher. According to sources, the place was a little low, so the foundation of the building was filled with soil and raised. In some respects, the mosque design differs from the classical solutions. At the entrance there is a classroom on the right and a cemetery on the left. Another difference from the construction of other madrasas is that the layout of the living rooms in this madrasa has been improved. The rooms consist of a domed corridor and rooms. There are shelves in the living room. At the same time, the rooms were a little darker and narrower.

In architecture and urban planning, the Mir Arab Madrasa cannot be imagined separately from the Kalon Mosque and the Kalon Minaret. Together, these three structures form a central monumental composition. At the beginning of the 20th century, the Amir Alimkhan Madrasa was built next to the Mir Arab Madrasa as part of the Poyi Kalon ensemble. He enters through a rooftop gate. The madrasa is surrounded by two-story, rectangular-shaped cells. The large room is covered with a domed roof. Another unique and large architectural ensemble in Bukhara, built in the XVII century, is Labi pool. The Kokaldosh madrasah, which was part of the ensemble, was built in 1568-1569, and the Devonbegi room was built in 1622. The central element of the architectural ensemble is the Labi pool. The pool is 36 meters wide, 45.5 meters long and 5 meters deep. The pool walls are reinforced with sinks, filled with gravel and soil, and plastered. The slopes are made of marble (Rashidov:1994, p.18).

As mentioned above, the Kokaldosh madrasah was built on the north-eastern side of the ensemble. It was built by the Minister of the Emir of Bukhara Kulbobo Kokaldosh. This madrasa is the largest building in the Labi pool ensemble and the largest madrasa in Bukhara. Kukaldosh madrasah is built in an open area, in the form of a rectangle. The architects built a series of arches at a height of two storeys, considering the madrasa to be visible from a distance. In general, Kokaldosh Madrasah is a historical building that perfectly reflects the ancient traditions of Uzbek classical architecture.

After the construction of the large pool and inn, the Labi pool complex began to take shape. The corners of the pool are trimmed, it is built of large stone blocks. The pool is a stepped (stepped) structure that deepens and narrows downwards. After the construction of the pool, Nadir Devonbegi Madrasah was built. The Khoja Zayniddin mosque was built until 1555. An example of this architecture can be seen for the first time in the worship of monumentality and purposefulness. It is centralized - two sides of the domed mosque face a narrow street, the other two sides face the settlements. The sides are connected by a shaded porch and a stone pool built to supply the neighborhood with water. The sharp difference between the feudal lords and the poor people was evident from the expensive construction of the mosque, its elegance, and the appearance of the commoners around it. In 1555, the High Mosque was built on the west side of Bukhara. This mosque is an example of guzar, mahalla-type innovation in the architecture of Bukhara. Here, large wall surfaces are divided into parts according to the traditional proportional rule invented: panels, large and small panels that are repeated on them, and then frieze. The hills of this period were built at the intersections of the main highways. Their construction was not simple.

The domes are now also known as the first (“Taqi Sarrafon”), the second (“Taqi Telpakfuuroshon”) and the third (“Taqi Zargaron”) domes. The arched head dome of Taqi Zargaron is mounted on an octagonal structure on a square foundation. He not only regulated traffic at the intersection, but also operated workshops and gold shops with 36 uncomplicated production inventories at depth inside. This is a unique and rare architectural solution. Toqi Zargaron corresponds to the main intersection of the Shahristan market.

He has kept his name to this day. This structure was built on the driveway, in the center of the ancient city. On the way south from Toqi Zargaron, Abdullokhan’s team is on the left, followed by Toqi Telpakfuuroshon. Abdullah Khan's team was founded in 1577. In the past, this team traded in silk and wool fabrics. The facility operated only in daylight. In order to improve the lighting of the rooms during the day, arched lanterns and lanterns in the form of a drum on top of the dome and a series of domes are installed. The main dome is mounted on an octagonal structure. The area under the main dome was
combined with galleries covered by small domes, forming an integrated indoor market. The inside of the indoor market was always cool and relatively dark. The Taqi Telpak Furoshon (hat market) is a unique architectural monument with its short domes on the street and the main dome at the intersection (three intersections). After leaving Taqi Telpakfuroshon, if you go south, you will come across the 12th-century Magoki Attori mosque on the left, and if you go a little further to the right, you will come across the Govkushan architectural ensemble. To the south of the Magoki Attori Mosque is the Taqi Sarrafon (Kadyrova:2012, p.25).

The Shahrud canal, which has become an integral part of Bukhara's architecture, is an engineering structure built along the southern part of the city. The canal ran along the main road connecting the city with Registan in the Middle Ages. Now it is concreted and paved with stone. If you walk east from Taqi Sarrafon, you will see an ancient bath in the right hand, and if you walk straight, you will see Labi pool. To the east of the Labi pool ensemble, far away, is another unique architectural monument - the Chor Minor Madrasa. The double madrasa ensemble is located on the southwest side of Registan Square. The method of creating two buildings facing the same axis is a characteristic feature of Bukhara architecture. One of them - Modarikhan madrasah was built in 1566-1567, the second - Abdullakhan madrasah in 1588-1590 (Mansurov:2004, p.15).

Madarikhan Madrasah is located to the west and was built in honor of Abdullah's mother. The history of the madrasa is trapezoidal. The main façade is decorated with a large roof, a two-story porch and tower-bouquets. The bouquets on the roof and corners are decorated with vinegar. The grooves between the crowns are given geometric shapes with tiles. Other parts of the madrasa are decorated. There is a rectangular courtyard in the middle of the madrasa, surrounded by terraced rooms. Classrooms are located in the corners of the building. The construction of the building is typical of the architecture of Bukhara of that century, ie both sides of the wall are made of baked bricks, and the middle is filled with construction waste. According to some, this solution will negatively affect the permanence of the structure. The architectural structures of the XVI century are characterized by short construction period, low cost of construction works and less complexity than the constructions of the previous period.

The structure of Abdullah Madrasah is very different from the usual. The courtyard is surrounded by two-story rooms. There are high roofs on both sides. Through the roofs one passes into the inner rooms and the inn. The roof wings and bouquets are decorated with vinegar tiles. Through the gate, one enters the large rooms on either side - the classroom and the mosque. Intricate domes and ornaments were used in the construction of the madrasa. The doors of the madrasa are designed with great skill. The gate is made of finely cut wooden pegs without nails and patterns. In architecture, the Double Madrasah is interpreted as the result of the Bukhara architects' research into the creation of economical, thorough and beautiful structures. Although more than five centuries have passed since its foundation, this ensemble still amazes with the elegance of its lines, precision, the sheer beauty of its decorations, and the use of clear, unwashed colors.

When the construction of the Prayer Mosque was completed in the 16th century, it came to the general appearance described. The mosque is built in the form of a long brick wall with a central altar. The center of the altar is decorated with brick and finely carved terracotta tiles. In the 14th century, the wall surface was decorated with colored terracotta. In the 16th century, an arched-domed porch with a high roof and a pulpit attached to it were built in front of the wall. From 1562 to 1566, the Govkushan madrasah was built near the second dome of Bukhara, the Toqi Telpakfuroshon market. The madrasa has a pentagonal design with irregular geometric cells (Vatikhov, Mirzayev:2010, p. 28).

The Khoja Kalon Mosque was built in 1573-1579. In its outer corner is also a small tower, which repeats the artistic composition of the Minaret Kalon.

In the 16th century, the Faizabad mosque was built in the north-eastern part of the city. The building has its own architectural features. In the middle of the mosque there is a large roof, the sides of
which are lowered and built in the form of a staircase. On the north-west side of Bukhara, 10 km from the city, there is a cultural heritage site of Bahauddin Naqshbandi.

Bahauddin Naqshbandi founded the cultural heritage site in 1544 by Abdulaziz Khan ibn Ubaydullahkhan. By the order of Abdulazizkhan, the tomb was arranged in the form of an ensemble, and in 1544-1545 the largest building of the complex - the khanaqah was built. The main part of the complex includes huts, a mausoleum, two mosques, a swimming pool, a well, a minaret, a madrasa and the Abdullah Khanaqah. The complex begins with a small domed quadrangle gate. It is known that after passing the gate, there was a small mosque on the right and various buildings for pilgrims on the left. Along the road to the left is the tomb of the khans - King Daxmai. After the Daxmai King, the corridor leads to an elegantly decorated roof. After passing through the roof door, there is a domed mausoleum on the right (it is not known who was buried in it). On the left, at the entrance, is a simple Muzaffarkhan mosque with six columns and a front porch. Next to the mosque is a two-column Hakim Kushbegi mosque. It has patterned porches on the south and patternless porches on the north.

The Bahauddin shrine is a large square platform covered with marble, surrounded by a beautiful marble grille. Not far from it, in the north, there is a marble pool with a circular staircase with sides of 9.5 m. There is a well between the hut and the pool, and next to it there is a beautiful shed - a sanctuary, where “holy” water is distributed to pilgrims.

To the north of the Hakim Qushbegi mosque is a minaret, and in the distance is another pool three times larger than the one in the inner courtyard. Outside the courtyard (northwest) is a 37-meter-wide, 40-meter-high khanaqah built on a rectangular platform. The complex also includes the Qasri Orifon Mosque, located 500 meters northeast of it. It is the shrine of Bahauddin’s mothers. There is a low minaret next to the mosque. The mosque is surrounded on three sides by a porch, and the ceiling is designed as a pool with a pattern. On the west side of Bukhara, 5 km away, in the village of Sumitan, an out-of-town necropolis of Joybori sheikhs, Chor Bakr, was built. The main complex of the shrine was built in 1560-1569 (Muhammadjonov:1991, p.10).

The complex has been formed for a long time. Houses, gates, courtyards, corridors, numerous tombs were built. Tsar Bakr was last restored during Independence.

From the time of the Ashtarkhanid rule, the foundations of statehood began to weaken. Regardless of the political situation, construction continued during this period. These include the Abdulazizkhan and Ubaydullahkhan madrassahs in Bukhara, the Bokimuhammadhkhan and Ubaydullohon mosques, the pool built by Subhanqulikhan in the region and the hospital in Bukhara, the Nazr Muhammadkhan and Subhanqulikhan madrassahs in Balkh, and a number of parks and palaces around Balkh.

Results and Discussions

Economic in Bukhara in the second half of the XVII century and in the XVIII century and political depression was on the rise. In these times although construction continues, but the qualities of the constructed structures are artistic and technically declined compared to the previous ones. One of the buildings built during the Ashtarkhanid rule is the Nadir Devonbegi khanaqah. Nadir Devonbegi’s inn was originally built as a caravanserai. When the construction was completed, it was turned into a mosque by the decision of the ruler of Bukhara Imamqulikhan (1711 - 1742). The khanaqah was repaired in 1914-1916 by the last emir of Bukhara Sayyid Alimkhan. Abdulazizkhan madrasah was built in 1652. It is the last large madrasah built opposite Ulugbek madrasah in Bukhara. Built in the traditional style, the location of the khanaqah, dome, cells and corridors in the Abdulazizkhan madrasah was as simple and convenient as the Ulugbek madrasah. However, the combination of Iraqi, as well as oriental and Indian styles in the decoration of the

Architectural Image of Bukhara in the XVI-Early XX Centuries
building with plaster and sandpaper makes it colorful and unique for its time. In creating it, the previously used style - decoration was used. The façade of the building consists of a traditional high roof, octagonal domes and porches. Two-storey terraced rooms have been built around the courtyard of the spacious four-story madrasa. At the entrance to the building there is a hall, two classrooms, a mosque in the depths, and rooms in the rest.

By the 18th century, the Bukhara Khanate was losing its economic and cultural status. During this period, construction work almost stopped, and architecture was not sufficiently developed. However, the Bukhara, Khiva and Kokand khanates were soon established in Central Asia. From this period, the construction of monumental and public buildings began to develop again. New types of facilities in Bukhara, including Chor-Minor built. It stands out from other monuments with its four magnificent domes. The Tsar Minor Madrasah was built in 1807 by the Turkmen Khalifa Niyazqul. Around the straight rectangular courtyard are rooms with one-story column terraces. In the corner on the southwest side was a multi-story mosque, with the lower floor serving as a corridor to the entrance to the madrasa, while the second floor at the top was a library. Chor Minor has an original look in nineteenth-century architecture with its simple architecture and stunning composition. Bolohovuz mosque was built in the XVIII-XX centuries. In the XVIII century in front of the pool was built a domed mosque with a side size of 11.5 m. In front of it in the XX century the master from Bukhara Kurban Yuldashev built a high awning, the master Shirin Murodov restored the tower. The elegant patterns ensured that the porch ceiling was carefully preserved. The ensemble has become an integral part of Registan Square with its artistic sophistication.

On the north side of Bukhara, Sitorai Mohi Xosa is a cultural heritage site, the emirate's summer residence and palace, and the Sitorai Mohi Xosa is a palace of the Mangit dynasty. Its first buildings were built during the reign of Amir Nasrullo (1826-1860). However, the construction of a palace and a beautiful garden here began during the reign of Amir Abdullah Khan (1885-1940). During the reign of Amir Alimkhan (1910-1920) a new palace was rebuilt and from that time the palace complex was divided into new and old palaces.

The old palace is an ensemble of three courtyards and many rooms. The oldest room here, the Amir Muzaffar Khan Hotel, was a spacious and high hall, with terraces on both sides, European doors and windows. Motives are combined in the murals and colors of the hotel.

The Abdullah Khan Hall, which is a square room divided into three parts, is designed differently. Two halls, placed opposite each other and uniformly decorated, are connected by a high platform in the middle. On the west side of the platform is a throne. There are many similarities in the artistic decoration of the halls of Abdullah Khan and Muzaffar Khan. The main residence on the east side of the old Sitorai Mohi Khosa, built during the reign of Amir Alimkhan, has a special architectural significance. It is entered through a ceremonial roof decorated with tiles and colored glass - a magnificent mountain gate. Before the restoration of this complex, the best masters of Bukhara were sent to Russia to study the experience of Russian architects. After that, with the help of Bukhara masters led by Khoja Hafiz, they began to restore the first building of the ensemble on the south side of the courtyard. The construction was under the supervision of Russian engineers.

Objects of cultural heritage, their architectural monuments are always in the memory of the people. Artisans from Bukhara express architectural monuments in their works of art. By the XVII century, Bukhara as a historical city was formed. During the reign of the Shaybanid dynasty, Bukhara Shahristan was expanded and the arch remained within it. Abdullah rebuilt the city walls, gates and seasons.

In the 16th century, the area southwest of the city, which belonged to the Sheikhs of Joybor, was also surrounded by a fortified wall and included in the city. With this, he got the last, most expanded view of the city. During this period there were eleven gates in the city, one of which - the Sheikh Jalal Gate - is
relatively well preserved. Its previous system has left its mark on the history of the city. The historical image of Bukhara is largely determined by a number of complexes inside and outside the city.

The center of Bukhara has the appearance of a single, huge complex. It mainly occupied the western and southern streets of early medieval shahristan. The center starts from the Poi Kalon complex on the west side. Taqi zargaron chorsusi shahristan- represents the center of. To the east, on both sides of the street, are the Ulugbek and Abdulazizkhan madrassas. To the south of the Jewelers' Choir is the Abdullah Khan Team. In the early twentieth century, caravanserais and shops were interconnected and crowded. They did not reach us. Shahristan was first fortified by the Toki telpakfurushon, a knot of lighted streets formed in the place of the gate in the Middle Ages, and later in the place of the gate. While the jewelers' choir has solved the problem of strengthening the intersection in terms of urban planning, the Telpakfurushlar mountain has a more complicated problem - a building with six streets. To the north of Telpakfurushlar Mountain there is a Sarrofon bath. Its history reflects the complex state of urban planning.

In addition to the complexes in the center of the city, in the Middle Ages in Bukhara were formed Labi Hovuz and Kosh madrasa complexes. In the Labi pool complex, around the octagonal pool, there is the Kokaldosh madrasa and the khanaqah and madrasa in the double system. The state of Bukhara, formed in the XVI century, was preserved in the XVIII - XIX centuries. The change here was mainly due to the density of the devices. The territory of the city within the fortress wall remained until that time, in the XVI century. The center of Bukhara occupied a large part of the city. It consists of interconnected ancient monumental and later madrassas, mosques, commercial buildings, caravanserais, shops and other public buildings, streets and squares. The size and shape of the buildings matched each other and had a harmonious compositional integrity.

Currently, many of the center's buildings, especially shops and caravanserais, have been demolished and lost their integrity. The intersections of the main streets in the center are separated by domes. In total, three of the city’s four teams - Sarrafon, Zargaron, Telpakfurushon - are preserved. The direction of the streets has been formed for a long time. The Sarrafon bathroom in the center is a good example of this. In general, land scarcity is typical for the city. For this reason, there were few trees in the city. As the car began to pass through the ordinary streets, the driver stood at the beginning of the street and gave a loud signal so that no other car could enter.

In late August 1920, Soviet troops attacked the capital, Bukhara, to destroy the Emirate of Bukhara, causing severe damage to the city's architectural monuments. On the third day of the siege, the city was engulfed in artillery fire, trade stalls around the Ark and Machiti Kalon were set on fire, the population was confused, and the streets were filled with the dead.

Conclusion

As if that were not enough, 11 planes from the sky bomb the city. The planes that flew over Bukhara from the airport near Kagan shocked the population. These were mainly old planes called “Newter”, “Farsal”, “Vuazel”, developed in England, France and Italy before the First World War. For the people of Bukhara, who did not see the power of twentieth-century technology and still live in the medieval tradition, such an air bombing was a catastrophe. Foukes, one of the pilots who bombed Bukhara on Frunze's orders, said: “... We bombed Bukhara. In particular, the bombing of the famous “Death Tower” gave us a special pleasure, although it was absolutely useless to target a tower.”

As a result of the storm in Bukhara, 34 guzars, more than 3,000 shops, 20 palaces and 29 mosques were burnt to ashes. 300 buildings in Arki Oli destroyed by artillery and bombs, more than 2,000 Bukhara soldiers killed.
References

Copyrights
Copyright for this article is retained by the author(s), with first publication rights granted to the journal.
This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (http://creativecommons.org/licenses/by/4.0/).