МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РЕСПУБЛИКИ КАЗАХСТАН

МЕЖДУНАРОДНА ОБРАЗОВАТЕЛЬНАЯ КОРПОРАЦИЯ

Glaudinova M.B., Glaudinov B., Galimzhanova A.S., Amandykova D.A., Samoilov K.I., Priemets O.N.

HISTORY OF KAZAKHSTAN ARCHITECTURE

Textbook

Алматы, 2019

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Рассмотрены основные этапы развития истории архитектуры Казахстана. Приведены данные о наиболее значительных памятниках, освещены их архитектурно-планировочные, объемно-пространственные, материало-конструкционные особенности, варианты традиционного декоративно-орнаментального убранства. Определены особенности исторического развития архитектуры на территории Казахстана. Дана характеристика развития архитектуры на современном этапе.

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INTRODUCTION

Discipline “History of Architecture of Kazakhstan” is basic one for specialty 5B042000 – “Architecture” according to the Working educational plan.

The teaching purpose of a discipline "History of Architecture of Kazakhstan" is formation at students of knowledge of historical aspects of an architectural and town-planning shaping in various regions of Kazakhstan and a task - formation at the student of professional understanding of architecture as some integrity, embracing itself both practice, and the theory – ancient and modern; formation in consciousness of the student of the developed vision of separate works of the architecture corresponding to the valid variety and complexity of historical and architectural processes to prepare natural transition to professional, synthesizing coverage of historical architectural heritage and, as a whole, to understanding of problems of successive development.

Studying of history of architectural tendencies promotes process of formation of professional outlook of students, their education in the moral and esthetic plan, and also to improvement of practical skills. The history of architecture is stated according to social development of certain regions and the countries. The statement of a material is based on system approach to consideration of historical and architectural processes and the phenomena which are represented on a socio-historical background in specific climatic conditions taking into account and have been forming during this or that period of ideological views of the certain countries and regions, and also level of their technical and technological development. Studying of History of architecture isn't limited to a statement of its separate aspects: functional, material and constructional, construction and technological, ideological and art and others. Each work is considered comprehensively, proceeding from social and historical prerequisites of its emergence. Roots of History of architecture as sciences go to the most ancient periods at which documents there are mentions, descriptions and the analysis of constructions of various countries and the people. Stages of its development correspond to socio-historical stages of development of society.

Despite trans-cultural and trans-social coverage of a material of architecture since the most ancient times to the middle of the XIX century

the discipline is structured on a row by that, each of which means a material statement at lectures and its specification on seminar occupations. Ratio of lecture, seminar occupations and IWS are defined by the curriculum.

This discipline allows to examine and understand creative and professional methods in architecture of various eras and masters on characteristic examples what directly to bring the features which were trained to understanding of modern architecture, i.e. allows to realize communication between historical processes and the present.

As a result of studying of discipline " History of Architecture of Kazakhstan" the student has **to know:**

- main historical stages of development of architecture,

- architectural and regional schools,

- traditions and progressive tendencies of architecture of the world,

- typology, main monuments of regions of each stage.

to be able:

- to reveal characteristics and progressive tendencies in development of world architecture for the purpose of their possible application in modern architectural practice

to have skills:

- definitions most characteristics and achievements of architecture of regions for their use in further professional activity,

- composite and historical and style analysis of monuments of architecture.

to be competent:

- in questions of a periodization and the characteristic of the main stages of development of world architecture;

- in questions of the main characteristics of monuments of world architecture.

PART 1. ARCHITECTURE OF THE ANCIENT TIMES

1.1 Architecture of Kazakhstan of the most ancient period

Features of formation of architecture in the territory of Kazakhstan. Geography, climatic conditions, features of a landscape of the country, nature of socio-historical processes.

The most ancient monuments in the territory of Kazakhstan: sites and caves of the Central Kazakhstan. Kosmola, Batpak, Karkaraly, Algabas etc. sites, Shulbinka Paleolithic settlement. Neolithic era settlements (Penki-1, Shatpakol, Saksaulskaya, etc.) and Eneolith (Botay): similarity and distinctions.

Memorial and cult constructions: menhirs, dolmens, cyst, kotan-tas. Buguly, Begazy, Aksu-Ayuly's complexes, features of the volume-and-spatial decision, main construction materials and designs. Proto-town civilization of Zauralye (Arkaim, "The country of the Cities") and its place in architecture of Eurasia. Settlements of average (Tagibay-bulak, Kanay) and late bronze (Chaglinka).

The oldest elements of architecture, marked area of human habitation were megalithic structures - menhirs (alyp-tas). Spatial development of the columnar form has led to a significant area of stone alleys compositions (sym-tas - a chain, kanat -tas - arc). The combination of a vertical column and horizontal stone beams leads to the bulk structure of the dolmen (kotan tas), which became the base of both residential and funerary object.

The settlement as a basis of urban development culture of Kazakhstan started up in 3-2 thousand B.C.E., as evidence the discovery of ancient proto-urban structures Botai, Kent, Toksanbay, Manaysor. Settlements of the Northern Kazakhstan (Toksanbay) entered the area of the "Land of Cities" - proto-urban culture of the Southern Trans-Urals. The level of accomplishment of settlements was quite high, in some of them there was an irrigation system. Dwellings located round were like the huts; in the settlement Botai it was multi-faceted or rounded planned homes area of 30 to 70 square meters. The walls were built of clay lumps, fortified on both sides by the animals' bones and smeared with a thick layer of clay. By means tent wood roof dwelling took dome shape, similar in its structure dwelling of nomadic Kazakhs - kiiz ui (yurt).

In the settlements of the Bronze Age dwellings acquired mainly rectangular plan configuration, although there were round and eight shaped (settlement Chaglinka). In some residential buildings and workshops for heating along the wall perimeter from firing chambers of smelting furnaces were constructed chimneys (Atasu, Myrzhik).

The memorial architecture in the Bronze Age characterized by monumental. Burials are also the places of worship and had a considerable size and were built of massive stone slabs. So, Cyclopean megaliths of the Begazy-Dandybay culture of Central Kazakhstan were a dolmen with dromos, hidden under a mound. Kurgan architecture for many centuries become the leading form of the memorial architecture of Kazakhstan, creating a unique combination of natural and artificial landscape, which fit perfectly into the tens and hundreds of funerary hills. This tradition was preserved during the propagation of Saka culture (8-4 centuries B.C.E.), when majestic establishment of the burial mounds Besshatyr, Issyk, Tagisken, Shilikty, Berel and other complexes were built, the presence of small forms - piers and menhirs, formed the chains, rings, radial rays,

arched ridges (Tasmola culture of Central Kazakhstan) was often observed in them. In semi-arid areas of the south-west (Kyzylorda region) in this period the use of adobe brick is noted.

The use of small size material had the effect of creating vaulted and domed structures, including one of the oldest in Central Asia false dome of the mausoleum Balandy-2 (4th c. B.C.E.). Centric layout, geometric structuring, linear composition and ensemble character - methods of constructing Tagisken complex in the Aral Sea region, the northern part of which is an ancient complex of sacred buildings (14-12 centuries B.C.E.). In the construction of inscribed circles and squares in the plans of Tagisken temples revealed the use of a modular system, which indicates the formation of the architecture and the actual architectural thinking. Mixed settled nomadic nature of Saka culture manifested in the architecture of the dwelling (both mobile and stationary) and in numerous monuments of urbanism. The settlements gradually transformed into cities with strong fortification: thick adobe walls, pier buttresses and angular cylindrical towers.

The unique urban art of Aral sea region, where the Zhetyasar culture existed - a complex of 50 settlements continuously evolved over the millennia. Layout of adobe dwellings of rectangular configuration was close to corridor type. Overlap was flat or vaulted, the rooms had a central hearth and sufa (bunks) along the walls. The largest Zhetyasar culture mound is Altyn-Asar (16 ha), which had the leader castle. The castle walls were covered with blue paintings and decorated with arched niches with ornaments. Such Saka settlements near Syr Darya region as Zhuan-tobe, Babish-Mullah, Shirik-Rabat are the forerunner of medieval castles: they were constructed on high natural (and later artificial) platform, reaching a height of 10-16 m. The premises were connected by corridors, in interiors actively used color, for example, in the "throne room", walls and floor (lined

with burnt brick) were plastered with alabaster and covered with white and red colors in a checkerboard pattern.

1.2 Architecture of Kazakhstan VIII BC – I AD

Emergence and development of the mobile dwelling. Sanctuaries and temples of Saka tribes (Kyzyl-Uyyk, Tubezhik, Meret-say). Memorial constructions: barrows (with ground and stone embankments, barrows "with moustaches"). Burial grounds and funeral complexes of Saka time for territories of the Southern Kazakhstan. Barrows (Shilikty's complexes, Issyk, Besshatyr, Berel, Uygarak, Tagisken, Kyrykoba, Berkkara, Tuolagai, Malaysary, Aybas Darasy, etc.). Saka settlements and cities (Shirik-Rabat, Babish-Mullah, Kulan, Tuzusay, Kok Mardan, Zhety-Asar complex, etc.). Formation and development of adobe construction. Tagisken's mausoleums, features of planning, volume-and-spatial structure, design. Options of reconstruction and value of a monument for development of architecture of the region. Balandy-2 mausoleum, design features.

Kurgan architecture for many centuries become the leading form of the memorial architecture of Kazakhstan, creating a unique combination of natural and artificial landscape, which fit perfectly into the tens and hundreds of funerary hills. This tradition was preserved during the propagation of Saka culture (8-4 centuries B.C.E.), when majestic establishment of the burial mounds Besshatyr, Issyk, Tagisken, Shilikty, Berel and other complexes were built, the presence of small forms - piers and menhirs, formed the chains, rings, radial rays, arched ridges (Tasmola culture of Central Kazakhstan) was often observed in them. In semi-arid areas of the south-west (Kyzylorda region) in this period the use of adobe brick is noted. The use of small size material had the effect of creating vaulted and domed structures, including one of the oldest in Central Asia false dome of the mausoleum Balandy-2 (4th c. B.C.E.). Centric layout,

geometric structuring, linear composition and ensemble character - methods of constructing Tagisken complex in the Aral Sea region, the northern part of which is an ancient complex of sacred buildings (14-12 centuries B.C.E.). In the construction of inscribed circles and squares in the plans of Tagisken temples revealed the use of a modular system, which indicates the formation of the architecture and the actual architectural thinking. Mixed settled nomadic nature of Saka culture manifested in the architecture of the dwelling (both mobile and stationary) and in numerous monuments of urbanism. The settlements gradually transformed into cities with strong fortification: thick adobe walls, pier buttresses and angular cylindrical towers. The unique urban art of Aral sea region, where the Zhetyasar culture existed - a complex of 50 settlements continuously evolved over the millennia. Layout of adobe dwellings of rectangular configuration was close to corridor type. Overlap was flat or vaulted, the rooms had a central hearth and sufa (bunks) along the walls. The largest Zhetyasar culture mound is Altyn-Asar (16 ha), which had the leader castle. The castle walls were covered with blue paintings and decorated with arched niches with ornaments. Such Saka settlements near Syr Darya region as Zhuan-tobe, Babish-Mullah, Shirik-Rabat are the forerunner of medieval castles: they were constructed on high natural (and later artificial) platform, reaching a height of 10-16 m. The premises were connected by corridors, in interiors actively used color, for example, in the "throne room", walls and floor (lined with burnt brick) were plastered with alabaster and covered with white and red colors in a checkerboard pattern.

The most numerous burial structures in the form of barrow mounds. These are ensembles of barrows, which include rings or ridges of stone pillars or slabs.

An outstanding monument of Saki culture in the southern regions of Kazakhstan is the complex of Issyk burial grounds, which is located in the

foothills of the Trans-Ili Alatau, 50 km east of Almaty. The most famous Issyk mound with the burial of a golden man was an earthen mound (diameter 60 m, height 6 m). The embankment was erected above the burial pit (3 x 1.5 m), in which a wooden blockhouse with walls of logs of the Tien Shan spruce laid in five rows was laid. The floor of the chamber is made of 10 tightly fitted boards, and the coating is made of log flooring.

Saki tribes owned high construction technology, as evidenced by the complex of Beshatyr barrows located on the right bank of the river. Or, at the foot of the Zhelsalgyr Mountains. This vast ensemble consists of 31 barrows and stone fences. All mounds of the Besshatyr burial ground are characterized by the shape of a mound in the form of a truncated cone with a flat top made of stone and large gravel (a section of the mound is trapezoidal). The entrance to the burial chamber was through the corridor - dromos, located from the east (Fig. 13).

The largest mound of the complex - Bolshoi - is located in the north-eastern part of the burial ground. The diameter of the base was 104 m, the height was 15 m (the original height was even greater), the diameter of the flat peak was 32 m. The base of the embankment was reinforced with several rows of stone slabs, around which a stone shaft was built at a distance of 5 - 7 m. Rings, composed of stone pillars and slabs, which formed a spiral pattern around the mound, departed from the shaft, with the beginning of the spiral falling on the eastern side of the mound. There are 94 such fences at the Bolshoi Kurgan (Fig. 14).

Of interest are the systems of underground passages - catacombs found in the structure of some of the Besshatyr mounds (Fig. 15).

Saki mounds of East Kazakhstan were erected, presumably, by the tribes of the Arimasp and the "vultures guarding the gold." For VII - VI centuries. BC e. complexes from mounds with a gentle stone embankment lined with

stone slabs are characteristic. The burial chambers had a rectangular shape in plan, their walls were faced with wood, the ceiling consisted of a log run (burial grounds of the Mayemir steppe in the upper reaches of the Narym river).

In the Middle Syr Darya region and its lower reaches from the first centuries A.D. there was the addition of a local construction school, which was developed in the medieval architecture of Kazakhstan. An important stage in the genesis of the architectural form is the mausoleums of Shirikrabat culture (IV-II centuries BC), which developed on the basis of the merging of the cultures of Saka tribes and the culture of agricultural oases of Central Asia. In turn, the architecture of Chirikrabat culture dates back to the monumental funerary structures of the Aral Sea Bronze Age - the mausoleums of the Tagisken burial ground.

The monument to the chirp-rabat culture is the memorial structure of Babish-Mulla-2, located in the valley of the river. Jana Daria Its architecture is remarkable for its monumentality and thorough thoughtfulness of the planning decision. The mausoleum is oriented by the sides of the world, placed on a platform measuring more than 30 x 30 m and on a basement of six rows of pakhovy blocks with a total height of about 3.5 m.

The planning solution is similar to the square mausoleum of the Shirik-Rabat settlement: four cameras (sizes vary from 4.4x5 m to 5.3x6 m) are located at the corners of the square volume (21x21 m). The burial chambers are interconnected by cruciform corridors, open to all sides of the world (Fig. 18). Along the outer contour, the cubic volume of the mausoleum is surrounded by a narrow bypass corridor. The burial chambers and corridors were blocked by arches lined with mud bricks.

The mausoleums of Balanda-2 and Balanda-3 can be attributed to memorial buildings of shirik-rabat culture. Compositionally, the Balanda-2 mausoleum is interesting (IV century BC), which is a huge cylindrical volume (16 m in diameter), in the center of which there is a circular chamber in plan, covered by a dome and surrounded by a suite of seven rooms. The facades were machined with twenty-five embossed triangular-shaped blades that enlivened the monumental planes of the powerful walls (3 m thick) of this large structure.

This monument occupies an extremely important place in the architecture of Kazakhstan, as it opens a new milestone in the development of architecture throughout Central Asia. This is the first of the buildings known to us today with the construction of the so-called false dome (Fig. 19). All early medieval raw domed structures of Central Asia have their origin in this dome, folded brick lining, i.e. when each subsequent row of the dome ring slightly hung over the previous one.

1.3 Architecture of Kazakhstan of the Hunnu period and Turkic khaganates (II-VIII AD)

Development of the mobile dwelling. The cities and memorial architecture of Hunnu (the Ivolginsky ancient settlement, the Bayan Unger, Gua-Dov, Terelzhiyn-Derevelzhiyn, the Leopard jotas) and Khakassia (the Tashebin town near Abakan). Burials of Hunnu (Noin-Ula and Golmod barrows).

Ancient Turkic sanctuaries. Deer stones. Memorial and cult complexes (basins of the Orkhon River, Tola (Mongolia), East Kazakhstan). Structure of complexes (temples, sacrificial platforms, steles with inscriptions, anthropomorphous and zoo-morphous sculptures, Balbals). Town planning (cities of Suyab, Isfidzhab (Sauran), Farab, Shavgar (Southern Kazakhstan), Taraz, Kulan (Southern-Eastern Kazakhstan,

Zhetysu). Three-part structure: Ark (a citadel with the palace of the governor), Shakhristan (the internal city), Rabat (suburb)

Turkic period also noted as the development of nomadic traditions and widespread urban culture, as well as the emergence of a cult building. Especially with ancient Turkic environment associated final formation of kiiz ui - traditional Kazakh collapsible housing which is fixed to the middle of the 1st millennium C.E. Light sliding lattice walls of the flexible timber - kerege, tied with uyik - frame of dome and secured shanyrak - hard dome rim with crossed beams. Outside the yurt was covered with a felt cloth: a cylindrical frame closed rectangular piece – tuyrlyk, which delayed by ribbons bacana; topcoat - uzik - serves to protect the dome. Shanyrak covered by tundik. On the side post - bosaga - hunged wooden double door yesik, closed with a curtain. All structural parts of the yurt are subject to the decoration by which achieved architectonic of mobile dwelling.

During the period under review, various religious cults - Zoroastrianism, Manichaeism, Buddhism, Christianity - became widespread in Kazakhstan. The carriers of Zoroastrianism was half of the population of Taraz, where, according to written sources, numerous atashkids functioned. The remains of one of the temples of fire were found in the citadel of Kostobe settlement (Dzhamukat, VI-VIII centuries). The temple, along with residential, utility rooms and connecting corridors, was part of the fortress with a complex layout. The walls of the sanctuary, rectangular in plan (7 x 5 m), are framed by Sufis, and a semicircular altar of fire, elevated on the platform, was located on the platform opposite the entrance.

According to V.V. Bartold along the Great Silk Road in the VI-X centuries. there were Manichean and Christian communities. So, in the Manichaean essay from the Turfan oasis, “The Holy Book of Two Foundations” (VIII

century), the “golden city of Argu Talas” and 4 more Semirechye cities in which there were Manichaean communities were mentioned. According to the descriptions of G. de Rubruk, in the city of Kayalyk (the settlement of Antonovskoye) there were 3, presumably Manichaean temples belonging to the Uyghurs who professed this religion. These buildings were oriented from east to west, on the north side there was a protruding altar with an image of a winged deity.

Buildings were found in the southern regions of Kazakhstan, the layout of which suggests the belonging of their Christian religion. So, in the valley of the river. Talas (east of the city of Taraz), two large architectural complexes were excavated in the settlements of Chol-Tobe and Kzyl-Kaynar (I-IV centuries).

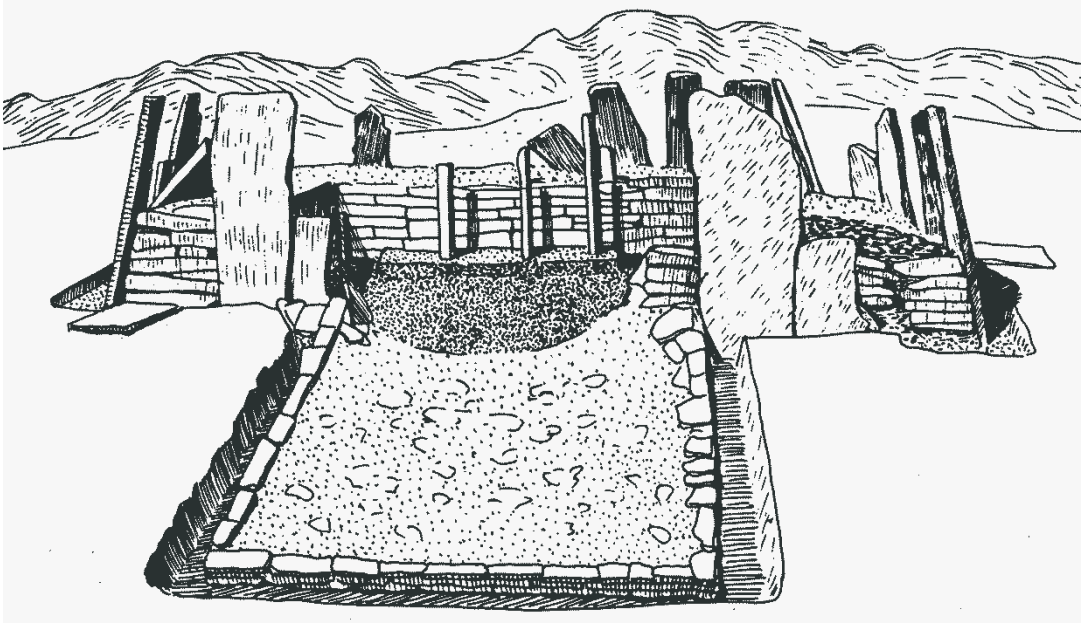
The layout of both complexes is identical: they consist of two volumes. The outer one is a large rectangular volume in plan, close to a square (with sides about 40 m, and in Kzyl Kaynar 33 m), along four long sides of which are narrow (2-2.5 m wide and 8-12 m long) rooms that open to the open courtyard. The inner one is a cruciform volume (in the form of a four-petalled rosette) located in the southeastern part of the open courtyard (the distance between the most distant points of the petals is about 17 m, and in Kzyl-Kaynar - 18 m) (Fig. 21).

In the 1st century A.D. Buddhism penetrates the southern part of Kazakhstan. In the southwestern Semirechye, seven Buddhist architectural monuments were recorded. The earliest of them is considered to be the “First” Ak-Beshim temple (VI-VII centuries), which is a centric structure of raw (38 x 38.4 m), all sides of which had entrances, the main one was singled out by a powerful peshtak and turned to the side cities.

On the territory of the north-eastern Semirechye on the site of the Antonovskoye fortress (the city of Kayalyk), a Buddhist temple was

discovered dating back to XI - the first floor. XIII centuries (fig. 22). It is almost square in terms of construction (16.2 x 16.14 x 18.5 x 18.6 m) with a sanctuary in the center and a bypass four-legged corridor. The temple was built on a hill (the base of the hill 42 x 44 m). The building probably had a flat beamed ceiling (including in the corridors) supported by numerous columns and wooden poles. A rectangular light hole was left in the center of the ceiling. The corners of the building, oriented to the cardinal points, are fixed round in plan, tapering upwards by towers (lower diameter about 3 m). The through entrance to the bypass corridor and the square sanctuary in the plan (7.3 x 7.5 m), is organized on the east side. The walls are laid with combined masonry of raw and fired brick, plastered, covered with a layer of alabaster putty and, apparently, painted (pieces of painting made in blue, green, red paint were found).

Kent settlement



Myrzhik entombent

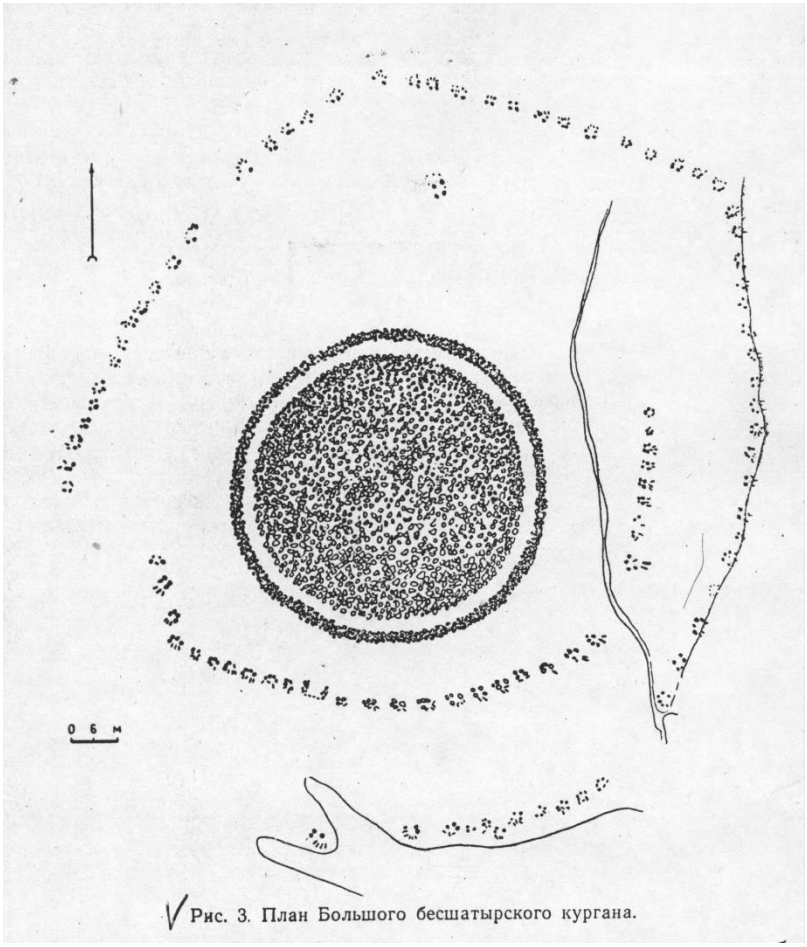


Рис. 3. План Большого бесшатырского кургана.

Kurgan Besshatyr

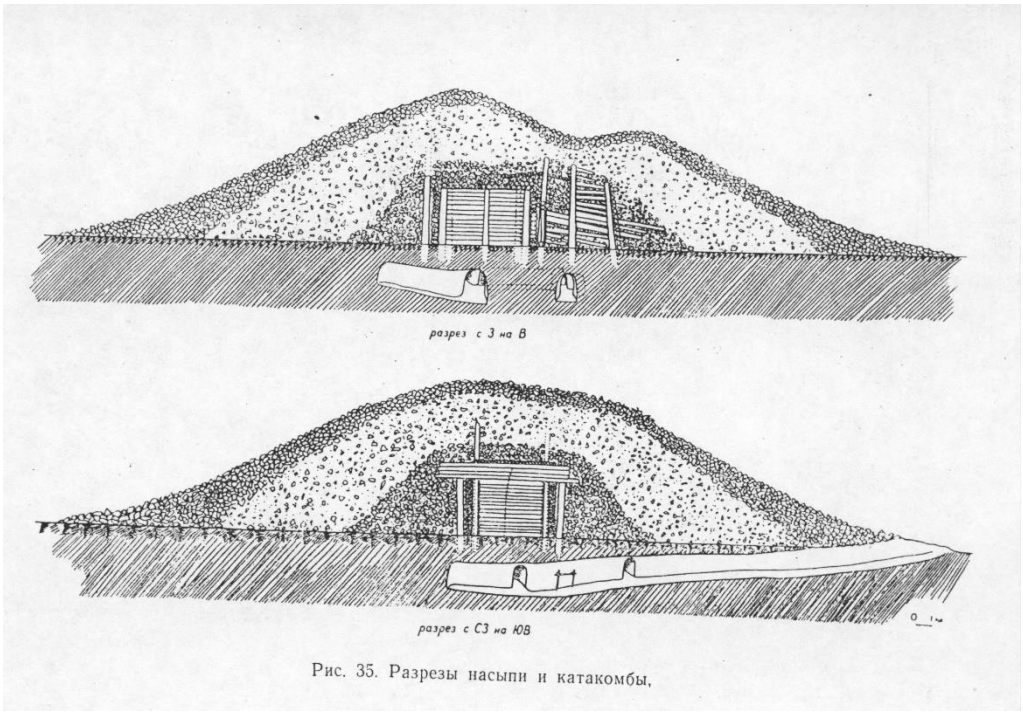
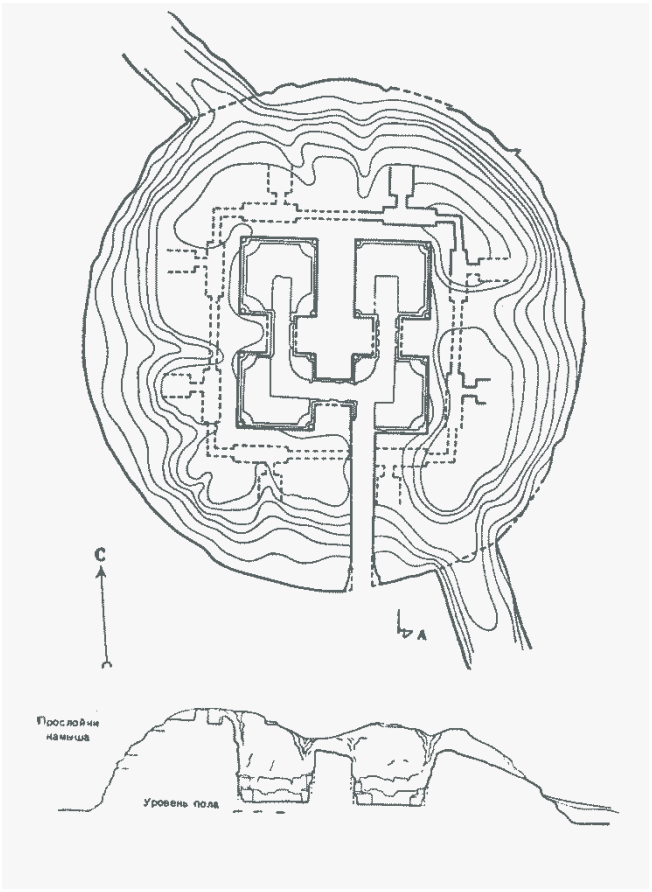


Рис. 35. Разрезы насыпи и катакомбы.

Kurgan Besshatyr. Section

Balandy-2 mausoleum



Chirik-Rabat settlement

PART 2. ARCHITECTURE OF THE MEDIEVAL AGES

2.1. Architecture of Kazakhstan of the VII-IX centuries

The settlements, the strengthened temples and ancient settlements of the Turkic period. Planning characteristics of a complex Akyrtas. Turkic memorial complexes. Structure of ancient settlements of the Southern Kazakhstan Kos-tobe, Baba-ata Kuyruk-tobe etc. Development of the city centers of Kazakhstan on the Great Silk way (Otrar, Isfidzhab, Keder, Vesidzh, etc.).

Temple construction: Zoroastric temples, Nestorian churches, Manichaean temples, Buddhist constructions, Muslim mosques. Residences of Kagans and feudal lords (Balasagun, Suyab, Ordakent, Chigu, Sauran, Zhankent, Kayalyk). City settlements on caravan tracks (Taraz, Isfidzhab, Otrar, Sygnak, Almalyk). The trade and craft centers in the steppe (Belen-ana, Zhuban-ana, Kulan, Farab, Kumkent). Fortresses of feudal lords (Baba-ata, Keder). Caravanserais (Kasribas).

Synthesis of burial and religious architecture, typical for the steppe environment gets its further development in the Turkic sanctuaries - ensembles consisting of rectangular burial enclosures and the anthropomorphic sculptures located on the east side. Sanctuary occupied a vast territory: for example, the area of the complex Zhaisan (Zhambyl region) was 70 thousand square meters. Tengrian idea of the integrity of nature and man has found a direct reflection of these ensembles, seeking to become part of the natural environment. The situation was different in the big cities of the Turks, which was experiencing an economic and cultural

revival due to its location on the Silk Road; here was appeared an artificial landscape created by the architectural environment: dense residential development, administrative (the citadel of the leader) and public-shopping center (the area of the temple and the bazaar).

At the same time it was built numerous fortresses and citadels with a free internal space occupied by a mobile camp, such as in the North-East Zhetysu. Multi-ethnic and multi-confessional population of the towns determined the diversity of religious architecture: on Turkish territory were built Zoroastrian atashkeds and bagins, Buddhist chaitya and vihara, Christian churches and monasteries, Manichaean manistans. Indicative in this respect are the cities of Zhambyl region and its ancient center – Taraz (VIII c. B.C.E.). Also notable Kayalyk city (Almaty region), where was functioning Buddhist monastery, the Nestorian church, Manichean Temple, and much later, in the 13th century was built Mosque. Interesting monuments of Kyzylorda region, where Oguz rates settled down (Zhankent) and original tower mausoleums 10-11cc. C.E. (Begim-Ana and Saraman-kosa).

Cities and settlements consisted of a citadel and shahristan. The Citadel is a manor-fortress, the main type of the main structure of urban settlements in the south of Kazakhstan and Semirechye. Shahristan - these are the quarters where the economic and social life of cities was concentrated. In the cities of Kayalyk, Otrar, Sygnak, Kumkent, Talgar, where crafts and trade were concentrated, a different structure developed. The nomadic economy fed them with raw materials, and artisans made up a special structure of the city of Rabat - the suburbs where they lived and worked. Cities were landscaped with water supply, bridge, sewer.

A typical example of an early medieval city that existed on a smaller scale until the 18th century. is ancient Taraz, which is currently under modern urban development, its topography is preserved in the descriptions of

researchers. The ancient settlement consisted of two parts - Shahristan and the citadel. A settlement on the site of the future city existed in the first centuries A.D. Taraz was a fortified trading city on a caravan route with developed handicraft production; and the name of the city itself, apparently, reflects the economic life of the city of merchants. The heyday of the city was observed in the XI - XII centuries. Less actively functioned in the XIII - XVIII centuries. Paving of sidewalks, streets near the bathhouse, the presence of a water supply system built from pottery pipes (with cone-shaped bells) indicate a high degree of improvement of the city.

On the territory of Semirechye there is a unique monument of medieval architecture - Baba Ata Castle (Fig. 23). The initial stage of life on the citadel of the city dates back to the VI - VII centuries. The two-story Baba-Ata castle (16 x 15 m), which had a square plan, reached a height of about 6 meters and an area of 240 m2. The central core of the structure was an octagonal hall, covered by a dome, around which there were compactly two staircases, two corridors, four square halls on the second floor.

The castle was built of mud brick. All halls are covered with domes lined with wedge masonry, and in the vaulted ceilings of galleries and corridors they used the same brick as for laying walls. Both galleries and the square hall intermediate between them were illuminated through narrow window openings or light gaps left in the outer walls. The central octagonal hall with the dome had a height of 5.38 m, and the dome at a height of 2.5 m had a diameter at the base of 6.2 m. The thickness of its shell was equal to the length of one brick, i.e. 40-41 cm. A hole for lighting the hall and ventilation is left in the upper part. Outside, taking into account the large dimensions, the dome was strengthened by four mutually perpendicular buttresses, lined from two rows of bricks and stretched from the base of the dome to the upper hole. The buttress bases are recessed into the thickness of the roof near the dome. The remaining four halls in the building have domes on

the tromps. Promising arched clots were arranged in the corners of the premises for the transition from the base to the dome. The height of the walls of all enfilades is 2.85 m.

In Central Kazakhstan, traditional building techniques, which were laid down in the Bronze Age, have been preserved. So, monuments of this period were built from large stone slabs (slate) on clay mortar. These are mainly memorial buildings - mausoleums, for example, examined by A.Kh. Margulan in the valley of the river. Kengir tombstones Dombaul, Kos-uy-tas, Kara-dyng, Uy-tas, Zhanay, Beskamyr, Dengek and others, which are the oldest surviving in Kazakhstan. These monuments can be divided into two types (according to B.A. Glaudinov): the first - with cone-shaped domes on a square or near-square basis, the second - cone-shaped.

The Mausoleum of Dombaul (VIII - IX centuries) can serve as an example of the first type. This is a stone structure with a rectangular base (8.9 x 7.9 m), having a ceiling in the form of a cone-shaped vault with a total height of 5.5 m. A hole is made at the zenith of the vault. The entrance is oriented east. The walls of the monument are lined with large hewn flagstones. The construction stands on a strong foundation, which is a rare technique in the architecture of the period in question. The Kara-dung mausoleum is the second type of mausoleum - it has a hive shape, which does not have a clear transition from walls to ceilings.

Architectural heritage of the 7th - 12th centuries has great value for our architecture. During this period, the material and creative base for the development of building and applied art is being prepared: both raw and burnt bricks are used as building materials, brick ornamentation, stamped ornament, painting and carving on stencils appear, etc. The architecture of the period of Turkic Khaganates paved the way for the prosperity that survived the architecture of Kazakhstan in the X-XII centuries. under the Turkic rulers who chose Islam as their state religion. The growth of cities,

the spread of new types of structures in the steppe and in cities, the adoption of new forms in architecture, which later became traditional national techniques, were associated with this time.

2.2 Architecture of the Karakhanid' period (IX-XII)

Capital cities of Karakhanid dynasty (Balasagun, Kashgar, Uzgend, Samarkand); Kypchaks (Sygnak), Karluks (Kulshub, Kayalyk). The largest transit cities (Farab, Taraz, Isfidzhab, Talkhir). Palace Fortresses (Ak-Kesene, Akyrtas)

Formation of new types of constructions in connection with Islam distribution in the territory of Kazakhstan. First mosques (multicolumn constructions with flat roofs) ancient settlements Ornek, Keder, Otrar. Underground mosques of Southern (Hilvet Turkestan) and Western Kazakhstan (Shopan-ata, Mangyshlak).

Mausoleums of the Karakhanid period of "tower" type (Saryaman-kosa, Begim-ana), "Centre-domed" (Babadzhi-hatun) and "Portal-and-dome" types (transitional type – Aisha-bibi, Karakhan's mausoleum).

The lifetime of Karakhanids - the first Turkic dynasty that made Islam the state religion - the heyday of culture in all spheres of life. In the southern region there were cities with classical three-part system (citadel, shahristan, rabad), the cities with the "long walls" (with enclosed agricultural area), fortified castles of individual owners. In the central regions of Kazakhstan involved in the area of international trade routes erected rectangular fortifications with the citadel. Agricultural lands irrigated by system of canals and ditches, laterals from the rivers. Cities such as Otrar (1-19 cc. C.E.) had a high level of accomplishment: the streets were paved, residential areas supplied with water through a system of clay pipes - kubur; centralized sewerage system was met. In many towns

functioned baths with underground system of the central boiler, pipe bends of different diameters, thus achieved a different temperature in rooms. It was developed gardening and viticulture, which is reflected in the decoration (interiors of the palace Kuiruk-Tobe). Fortress acquire complex spatial structure of multi-domes building (settlement Baba-Ata, Zhambyl region), plan around an open courtyard (unfinished construction Akyrtas, Zhambyl region).

Islam which penetrated in the Turkic environment in 7 c. C.E. predetermined the further development of architecture in Kazakhstan: gradually fades wall paintings and volume sculpture, an essential element of all previous religions, and therefore increase the role of abstract symbols - ornaments, epigraphy and colors. It should be noted that the significant and symbolic in general are characteristic of the art of ancient nomads, revered nature, but not copied it, for example, in agricultural or horticultural landscape. Therefore all the elements of their environment - clothes, household items, as well as dwelling, were imbued with an ornament. In the medieval period in this area introduced architectural objects, facades and interiors are richly decorated with floral and geometrized ornaments. Mausoleums retain the form of a cubic volume with two types of dome ceiling - a tent and a hemisphere, and their variations. This adds two major types of memorials - centric dome and portal-dome. Thus, in one of the centers of Karakhanids - Taraz and its oasis preserved tombs of the ruling dynasty. Karakhan mausoleum demonstrates one of the most favored decoration - figured brickwork by square burnt bricks. Elements of this technique in combination with a smooth plane walls and the inclusion of rosette have been used in the mausoleum Babazhi Khatun in 10 c. C.E.(Zhambyl region).

A feature of the mausoleum is a revolutionary architecture of double dome: external - in the form of hexadecagram-corrugated tent on stellate

drum, and internal - hemispherical. This technique allowed almost any desired shape and height of the outer dome, which significantly increased the expressiveness of monumental places of worship. Double dome was used in the mausoleum of Aisha-Bibi, 12 c. C.E., the ensemble with burial Babaji Khatun. Here was used a variant of walls and decoration, developed during Karakhanids - three-layer walls consisting of masonry, backfilling and terracotta facade panels mounted on the outside of the carved surface. Thus, the facades of the mausoleum are openwork carved mantle with various geometrized patterns.

An outstanding architectural monument of Kazakhstan of the new Islamic period is the Babaji-Khatun Mausoleum (late 10th - early 11th centuries), located 28 km from the city of Taraz in the village. Aisha-bibi. The construction is a cubic volume (dimensions 6.78 x 6.78 m), covered by an unusually shaped dome (Fig. 29). The installation of a high dome in the form of a corrugated tent became possible thanks to the revolutionary reception of a double-shell overlapping device, in which the internal burial chamber is blocked by an independent hemispherical dome. This technique made it possible to solve both the constructive problem (uniform distribution of the load from the domes) and achieve the architectural expressiveness of the building, which received a monumental appearance with small dimensions.

Arched sails are arranged in the corners of the walls of the quadrangle, which form a regular octahedron, from which the annular laying of the inner dome begins. The outer dome is mounted on a hexagonal star drum. The construction of the structure used wooden ties in the heel of the arch, perceiving a spreader.

The mausoleum of Babaji-Khatun is distinguished by the strict simplicity of forms and decor. The main - eastern - facade is distinguished by a low parapet, arranged by thickening the wall and the front door. On

parapet terracotta plates, a part of the inscription, executed in Naskh handwriting, has been preserved. Unique in the mausoleum's ornament are the 8-petal rosettes in the tympans of the arch, which are probably a local tradition, which was widely used in the Karakhanid period.

The applied building materials (burnt brick, mortar of ganch and clay), special construction of foundations on clay pillows, peculiar belts in the basement of the walls contributed to the excellent preservation of the mausoleum for long times.

One of the earliest monuments of the Karakhanid era is the Mausoleum of Karakhan in the city of Taraz. According to legend, a mausoleum was built over the grave of the founder of the dynasty. Currently, the mausoleum exists in a modified form, as after repair work in the early twentieth century. the magnificent brick ornamental decoration of the mausoleum was lost and its layout was distorted (Fig. 30).

The mausoleum was a fundamentally new type of structure - portal-domed. Now the main figurative load is carried not by a dome of complex shape, but by a flat facade portal, which, starting from this period, demonstrates all the various techniques of decorative decoration (embossed brickwork, carved terracotta tiles, tiled mosaics, etc.). The Karakhan mausoleum had a beautiful facade decoration, consisting of facing with terracotta and glazed slabs (with blue glaze - a new achievement of medieval ceramists), its high artistic level prepared the birth of a masterpiece of architecture of Kazakhstan - Aisha-bibi mausoleum.

Aisha-Bibi Mausoleum - a square structure in terms of plan (7.23 x 7.23 m). The main facades (eastern) of the mausoleums of Aisha-Bibi and Babaji-Khatun are on the same line. According to the preserved walls of the monument, it can be assumed that it was blocked by a dome with a system of blood clots (a dome of a conical shape has now been restored).

The mausoleum has three-layer walls (170 cm thick) of ornamented terracotta slabs, a backing layer and brickwork. The Aishi-Bibi Mausoleum has outstanding artistic merits. All elements of the western (preserved) facade are in a harmonious combination, and their use is artistically and tectonically justified. Corner columns have an unusual shape, ending with a bell in the upper part.

The artistic expressiveness of the mausoleum is enhanced by lining with terracotta plates with ornamental motifs on them. The use of terracotta tiles in the architecture of Central Asia and Kazakhstan has a long history. The architecture of the Karakhanid period gives an exceptional wealth of ornamental motifs on the architectural planes: the most complex plant and geometric plexuses, letter patterns, and the tiles that compose them often divide apart without regard to the ornament, since their size is dictated by the optimal firing conditions.

The ornamental motifs of the mausoleum tiles go back to the culture of the Turkic-Karluk era of the Semirechye, which also confirms the local origin of the mausoleum architecture. Repeatedly repeated tiles are spread in the lower part of the carpet pattern: four “koshkar-muyiz” fingerprints radially diverging from the center - this ornament has long been known. An example of a common motif in the ornamentation of the monument is also a vortex outlet, which is also known as stamp prints on clay tables of Taraz of the VI-VIII centuries.

The improvement of architectural and artistic techniques, as well as the transfer of traditions from one generation to another, took place in the workshops, which were at the same time a school for training young masters. The high construction culture of the Karakhanid era, which incorporated the art of the ancient tribes of Kazakhstan, is the foundation on which the Aisha-Bibi mausoleum was built, which is of the greatest value in the history of Kazakh art.

The first mosque in Kazakhstan had multicolumn flat roofed structure (in the sites Keder, Otrar, Kayalyk). The oldest is considered Taraz mosque 8 c. C.E., perhaps, rebuilt the temple of preceded religion. The oldest in Kazakhstan are carved wooden columns of the mosque-mausoleum Arystan Baba characterized by expanding upward shape.

The unique tradition of erecting the underground Sufi monasteries in the Cretaceous of Western Kazakhstan, the earliest of which is Shopan-ata mosque, 12 c. C.E. Religious cave, illuminated by dome hole were often irregular layout, the exception - Shakpak Ata mosque 14 c. C.E., with the plan in the form of a Latin cross. Walls were marked by Sufi poetry, tamgas of Kazakh tribes, drawing of palms.

2.3. Architecture of the Mongolian period (the XIII-XIV centuries)

Development of portal-and-dome type of mausoleums in the territory of Central (Kosmola, Ayak-Kamyr, Joshi khan, Alasha-han) and the Southern Kazakhstan (mausoleums Syrly-tam on Inkar-darye and Jean-darye, Daud-bek in Taraz) design features (existence of unloading subdome gallery, a belt of sails-trompov). Mosques of the XII-XIV centuries (in Taraz, Kayalyke, Orneke, Kedere, Otrare). Underground mosques of Mangyshlak (Shopan-ata, Shakpak-ata). Monuments of timuridsky time – Hodge Ahmed's multipurpose complex of Yasavi. Distinctive features of the volume and spatial decision, constructive and architectural artistic touches. Influence of architecture of a monument on the subsequent development of architecture of the region.

Later, during the period of the Mongol Empire, construction activity is transferred to the Central Kazakhstan area, where finally formed a sacred place for the Kazakhs - Ulytau. There remained a cultural continuity, since

the Paleolithic caves, rocks with petroglyphs of the Bronze Age, burial constructions of the nomads, the early medieval fortresses, mausoleums of Mongolian and Kazakh leaders. Orda Bazar range and mausoleum of Zhoshi Khan are indicative - settlement, located in the valley Kara Kengir area of 300 square meters with five residential and business premises. Zhoshi Khan Mausoleum - a sample of classical portal-dome composition, in which, however, reflects the local constructive techniques: double-shell dome with an external heptadecagram shaped drum system under dome transitional system - squinch. The decor is typical for the Kazakh memorial architecture - it is extremely laconic, however, the dome was decorated with glazed tiles; thus, the lack of detail and emphasizes the primacy of large-scale simulation of the main sacred element - "celestial dome ".

Quite different methods of architecture shows the architecture of the mausoleum- khanaka of H.A. Yasawi in Turkestan (1405) - a vivid example of the Temurids style, unique complexity of the composition of the planning and decoration. The innovative system of the under dome architecture – pendentive – significantly increased the span and height of the dome: for example, the central premise of the complex kazandyk (jamaatkhana) at a height of 38 m is covered by the largest in Central Asia dome, diameter - 18.2 m. Extremely revealing architecture finds used for the stability of the huge complex (division building on blocks by corridors), giving monumentality (scale decorative exterior dome above the mausoleum), information content (epigraphic ceramic laying and mosaic inscription). High artistic expression gets color decorative tiled slabs, mosaics, carved decorative panels, muqarnas.

The rudiments of portal in the architecture of memorial constructions of the Karakhanid period led to further development of portal-dome types of mausoleums since late 12th century and early 13th century in Kazakhstan and since late 13th century in entire Central Asia and abroad. In this

respect the monuments of Central Kazakhstan are singled out in the first place. Already in the mid-18th century captain P. Rychkov discovered the ruins of some constructions [Rychkov 1962, p. 514] in this area, which were surveyed by A.Kh. Margulan in late 1940s. It was the mausoleums of Bolgan-ana (on the right-bank Sary-Su, Janaarka region), Botagay (2km to the East from Kurgal'dja, Tselinograd province, Ayak-Khamyr (9km to North-West from Djezdy settlement, Djezkazgan province), and so on.

The latter one is dated back to the pre-Mongol period. The mausoleum is rectangular 10.16x8.10m in size with a square room 5.72x5.73m in size, the portal part projected 2m forth and the square burial chamber is covered with a spherical dome. The design of the mausoleum is distinguished in its originality in the history of Kazakhstan architecture, i.e., by a well-formed portal on the main façade. The portal of the Ayak-Khamyr is an example of an early, but already well-formed new type of a portal-domed mausoleum in Kazakhstan. The modular system, on the base of which the architects achieved some harmonious architectural forms in the mausoleum design, revealed by G.G. Gerasimov is an evidence of a high professional level of elaboration of the architecture of the Ayak-Khamyr mausoleum. For example, the base for the module was the width of the door opening – 75cm, i.e. the length of three bricks or gyaz. The width of the main façade is 11 modules, lateral façade – 13 modules, the height of the arch recess is 6 modules and its width is 2 modules, the height of preserved walls of lateral facades is 7 modules and the width of strips on façade is 1/3 modules.

The Mongol invasion interrupted the flowering of architecture across a vast area. The aftermaths of the invasion were first dealt with in the central, south-western and western regions with a more stable tradition of architecture and more favourable historical conditions. Tortkul (townships) were spread in the area of North-eastern Semirechie; they are divided into several types: together with large de-veloped towns of the 8-14th centuries

(Tal'khir, Almatu, Sumbe, Chilik, Saga-Bein, Kayalyk, and so on) there were settlements of shelter type (Jaksylyk, Kok-Irim sites of the 10-12th centuries), groups of 2-3 fortifications (Sarydjas, Ayna-Bulak, Bije I), non-fortified sites and caravanserais. The sites of Koktal I and Koktal II are identified as caravanserais.

The site of Koktal I (Tas-Murun settlement, the Lower Ili River) is 60x60m in size, the remaining walls are 2m high and corner towers are 2.5m. The walls were also fortified by pillar wall towers (two on each side with a 20m gap in between). The driveway is located in the middle of south-eastern wall. The site of Koktal II is situated 500m to the North from the previous site. It is 150x110m in size and oriented at the cardinal directions. The fortress wall is fortified with corner and pillar wall towers (4 per each side) [Baypakov 2002, p. 35-36].

The towns of Southern Kazakhstan continued to develop; the fortified town of Sauran the 13-17th century, being the former capital of Ak-Orda is one of the most distinguished among them. It is one of rare samples of a site, which water-supply was the system of kyariz (water-lifting system). Like in Southern Kazakhstan, the towns of Western Kazakhstan of the Golden Horde period (the 13-14th century) on the main road connecting East and West were initially mere administrative settlements. The palaces of rulers and houses of the elite, around which the trade, handicrafts and farming suburbs appeared only later. These were Oguz towns of Kaynar, Imankara, Koykar, Ushkan, Bileuli and Kosoba (caravanserai), Golden Horde towns of Saraychik and Jaiyk. Particularly interesting are the ruins of Saraychik (Saraydjuk of the 13-14th centuries), on the Ural, one of the western towns of Kazakhstan on the way to Europe. The remains of a palace or a palace complex of the 'khan' type – a rich guest house - were unearthed in the place. Its town planning importance is emphasised by a well-organised open square in front of it.

The palace was built on the artificial elevation 2m high and its structure was formed by carcass of walls bricked of rammed earth blocks. The walls 6m high were made of mud bricks and fortified with corner towers. The main gate was designed like a portal; its façade decorated with baked bricks, alabaster décor and panels with carved patterns. Later the palace was widened by lateral wings symmetrically flanking the main building and the back annexe. The numerous dwelling rooms up to 40 in number were placed indoors [Tasmagambetov 2001, p. 46-47]. The plates of polychrome glass, inserted into the alabaster lattice-pandjara aimed for the window openings significantly adorning the palaces, mansions and the elite's houses, were disclosed in Saraydjuk.

As it is well-known, one of branches of the Great Silk Road led to Dashti-Kipchak on the territory of Central Kazakhstan. One of the oldest centre of metal mining conditioned the origin of stationary settlements in the Bronze Age was located in the area. Such towns, headquarters of nomadic rulers, winter camps and metallurgists' settlements as Khan-Ordasy on the Aksu River, Karagach, Belen-ana, Juan-ana on the Sarusy River, Baskamyr, Ayakkamyr on the Jezdy River, Mily-Kuduk (near Jezkazgan city), Buzok (near Asatan city), and so on. were situated in Ulytau Mountains, on the Sarusy and Kengire rivers the Middle Ages. The castles were erected in the area as well; one of samples is the Dombaul site, a square fortress with an earthen gate in the eastern wall.

The architecture of the fortified site of the Alasha-khan (200x115m in size) with massive corner towers and moat is quite specific. The site includes two fortresses, the bigger one (6,000 square meters in size) was used for the deployment of military garrison and the smaller one (3,528 square meters) was, obviously, the residency of a ruler. The fortresses are separated by the moat 3m wide and 3-4m deep and connected by a folding bridge. It is believed that yurts and tents were put up inside the fortresses [Margulan

1951]. The quite specific features of the stationary palace constructions of the Mongol nobility can be observed at the site of Orda-Bazar being Djuchi-khan's headquarters in Central Kazakhstan in the Kara-Kengir Valley. Djuchi-khan's manor is a building with an area of 300 square meters in size with five living and utility rooms, in one of which an L-shaped sufa was unearthed to the right of the entrance [Baypakov 2005, p. 245].

The many-columned variety of the buildings for public worship developed earlier in the memorial architecture was followed-up in the Kayalyk mosque (the 13-14th century). It was a large building (32.6x26.7m in size), where 52 wooden columns on the stone bases (span is 3.5-3.7m wide) supported the simple flat-slab deck. The mihrab (niche in the Qibla wall) part of the mosque was separated by a barrier. The notable feature of the building is kan (heating pipes) inset into the mud bricked walls.

The largest building of public worship was the mosque in Otrar (the 14-15th century); it was 60x22m in size and oriented along the East-West axis. The western part of building was occupied by a mosque being the hall with 30 columns with span 3.7m wide. A large yard was located in front of it. The doorway was designed as the portal chartak with cylinder minarets at corners and flanking rooms. The private manor of the new ruler of Deshti-Kipchak Djuchi-khan was situated in the Kengir Valley in Central Kazakhstan. The first mausoleum attributed to the new, Mongol, period, – the mausoleum of Djuchi-khan was built in 1228-1230 on the left bank of a river 45km from the contemporary Djezkazgan. The architectural, planning and spatial design of the mausoleum was based on the traditions of the previous period; also some new elements are visible in its architecture. The building is traditionally oriented along the South-West axis. The mausoleum is rectangular with two rooms; the main room is a square burial chamber (gurkhana) 5.10x5.20m in size covered with a spherical dome and the front room of ziaratkhan type is 2.96x2.26m in size covered with a close

pointed vault placed in the portal recess. The construction is bricked with red baked bricks 26x26x5cm in size on the low foundation of crushed bricks. The brickwork of arches, dome and tent is unusual with a use of ganch and clay mortars. The floor of the mausoleum is bricked; the dome is a double shell one: the internal one is spherical and external one is low and conical set on seventeen-sided starred dome, what is continuation of tradition of tent mausoleums, first of all, Babadji-khatun mausoleum. Nevertheless, the externalsemi-spherical dome was restored as a result of restoration of monument. The small corner arches in the tier of pendentives were used for passage to the polyhedral drum. The interior of mausoleum is simple and strict. The walls are completely smooth without any adorning decoration. Two small light openings 35x55cm were made in the base of dome at the height of 3.28m in lateral axis for illumination [Gerasimov, 1957 p. 24].

The design of the mausoleum is based on the type of portal-domed mausoleums and developed by the expansion of the portal dimension in combination with a conical dome and also increase of facing space by glazed turquoise tiles. The deep pointed recess 4.50m high on the main facade is framed with U-shaped deepened border initially faced with the glazed tiles 45x45cm in size. According to P.Ragulin, 'the dome was also faced with the turquoise ceramics, which fragments were found around the mausoleum' [Ragulin 1983, p. 52]. The evidence of a connection with the architecture of the Karakhanid period is the way how the archivolt of the recess rests upon the thin three-quarter columns. G.G. Gerasimov's statement that 'the arch (the arched recess of the main façade – G. B.) is not as orderly and delicate in its proportions and forms as the Ayak-khmyr mausoleum, there is no ease and loftiness in it. On the contrary, it seems to be slightly heavy' should be noted [Gerasimov 1957 p. 18-19].

In some respect this decision of an architect is clear, if we concede that in this case it is not a simple portal recess, but the ground in front of the entrance replacing ziaratkhana of Central Asian memorial constructions. Perhaps, it is the reason of its large depth of 2.26m, simple and strict interior, where visitors had not to enter to, but just could bow down to the grave and stay on this front ground - ziaratkhana. It is the distinctive feature of portal-domed mausoleums of Kazakhstan in the next periods too. Thus, it should be noted that the architecture of Djuchi-khan mausoleum at the general height of 6.88m was based on the experience of the Karakhanid period and innovative combination of monumental portal with a conical (tent) dome. As a result, the new design widely spread since the 14th century in Kazakhstan and Central Asia and deserved the commemoration of the notable khan was created.

The most monumental piece of architecture of Deshti-Kipchak of Ak-Orda period is the mausoleum of Alash-khan located in the middle stream of the Karakengir river (2km to the South-West of the Maltybay settlement, Ulytau district). The traditional design such as a rectangle composed of a square burial chamber covered with the spherical dome, with the ground in front of the entrance under the pointed arch of peshtak was developed in the Alash-khan mausoleum by construction of a 3.65m high gallery bypassing the room at the level of the under dome structure. The gallery consists of four chambers placed in corners connected by a small corridor 0.5m wide, 1.60m high, where the stairway with very high steps (up to 45cm), placed in the left pylon of portal, led to. The upper round opening (96cm in diameter) of dome, four window openings 50x69cm in size in the under dome's dioctahedral drum and six window openings 18x35cm in size are used to illuminate the room. The mausoleum is the largest memorial construction in Central Kazakhstan, its size is 9.73x11.91 by the perimeter, the diameter of the dome is 5.81m and the general height is more than 10m. The constructive structure of the Alash-khan mausoleum is an evidence of

high skills of its architects. The building is placed on the foundation bricked of red baked bricks of a very high quality and local production.

The durability of used bricks gave possibility to construct many parts without wood. For example, the dome and vaults (balkh) in overhead covers of rooms were built without a formwork by radial and voussoir brickwork. The use of wood was extremely limited. Only in rare case it was used as an incidental material, e.g. for the crosspieces of door and window openings, scaffolds and carcass for im-portant parts of the building. The loam with added sand and gravel from the bank of the Karakengir river was used for the mortar of common brickwork and ganch mortar for vaults of arches and dome [Gerasimov 1957, p. 15]. The dome of mausoleum has been safely standing already for more than seven centuries owing to its carefully developed design. This can be seen in a precise understanding of the function of the dome structure and of the need to create conditions when the thrust power in the dome has to be securely compensated. For this reason an anonymous architect came up with a previously unknown, innovative and significant decision. It is known that up to that moment the diameter of the dome erected above the square room was equal to the width of the square, but in the case the dome diameter is 5.81m at the width of a square burial room of 7.51m, i.e. the architect shortened it by 0.85cm from each side. The diameter of the drum by outer circuit is 5.91cm at the drum width of 0.90m. It means that the dome by outer diameter almost fitted into the square room.

Therefore the walls in the Alasha-khan mausoleum are more than 1m thick; they are also used as buttresses to compensate for the dome thrust and the charge of dome is supported by eight pointed arches and pylons formed by build-up of walls inward. Thus, the octahedron of the drum started directly from the foundation forming eight recesses 0.75m deep in the axes with a pointed end in the interior and the transition of the octahedron into the

dome circle take place through imposts bricked in a quite specific way. The mausoleum is attributed to the already well-known portal-domed type of memorial construction by volumetric-spatial characteristics, but its aesthetic aspects are designed with adaptation of some new methods. First of all it is the facing of outer surfaces, lateral and back walls with figured brickwork in the shape of 'rhombi', 'triangles' and the lateral surfaces of portal with 'herring-bones', accomplishment of façades with frieze and cornice and also the pointed recesses in the interior. The main façade is emphasised by a portal with a deep (2.04x3.24m) recess-antechamber covered with the cylindrical vault in the centre; its unusual semicircular archivolt resting on three-quarter hexahedral columns (like the Aysha-bibi mausoleum) placed in corners of a brick socle by sides of doorway.

Like in the portal of the Ayak-khamyr mausoleum the entry recess of the Alash-khan mausoleum is framed with three U-shaped lines of decorated tiles with botanical and geometric patterns. The top of the pishtak is ended with the picturesque blue-green glazed frieze of octagonal stars and a simple cornice that consisted of two suites of figured edgewise brickwork and four suites of simple brickwork [Gerasimov, 1957 p. 16]. The same accomplishment took place in other facades of the mausoleum.

The type of portal-peshtak of the Alash-khan mausoleum and the dome too is different from the ones found in other mausoleums in Central Asia and Kazakhstan. It is as grandiose as in the monuments of Maverannahr (e.g. in madrasahs in Samarkand and Bukhara), but it is not screen-shaped like those ones found in Kyrgyzstan and partly in Khoresm. It is voluminous and expressive within reasonable limits at its simple forms and it was well harmonised with the aspect of monumental construction [Margulan, 1947 p. 66]. Most noteworthy are the outstanding knowledge and skills of the architect of the Alasha-khan mausoleum which allowed him to create such a wonderful piece of art. They are seen in the dimensions of architectural

details, their harmony in general and tectonics of its form. The portal of the main façade (judging by the mausoleum of Juzden) is monumental thanks to the well found proportions and the proportionality of the doorway, arch recess and the whole surface of portal and also orderliness of ornamental strips framing the arch span. The brick decoration of the lateral and rear façades is much wider, than in the Karakhan mausoleum and placed on the 'free' surface of wall shading tectonically and constructively its important parts such as socle, cornice and corner parts. The light bricks used for decoration well mark out this adorning decoration against the dark-red brickwork resembling pictures of 'chiy' and the latticed frame – kerege of Kazakh kiiz-uy.

The historically important is the original base of three-quarter column on the main façade of the mausoleum, which was designed with the use of a quite specific and rare method of 'apples' composed of four hemispheres in the way that two middle ones form a sphere ('apple') limited by two extreme ones turned to the different sides and used as abutments for the 'apple' and the column. The bases of the stone columns found in the destroyed mausoleums of Old Sayram and the bases of carved wooden columns from the Turkestan mausoleum of the 14th century may be the analogues found in Kazakhstan. Such a design of column bases was widely spread in Central Asia. Unlike the memorial constructions of Kazakhstan built before and after the Alash-khan mausoleum, the interior of the mausoleum was designed with the familiarity of tectonics as means of architectural structure, but also with the knowledge of light arrangement. According to G.G. Gerasimov, the pointed arches of the inner recess and crosspiece arches in corners starting from the floor are similar in their proportions to the architecture of the best monument in Urgench – the mausoleum of Tyurabek-khanym (the mausoleum of the Sufi dynasty of the 14th century – G.B.). In the morning, when the sun rays fall through the upper round opening into the mausoleum and cut with the rays falling

through the lateral openings of under dome drum, the rich play of light-and-shade with the smoky veil, through which the inner volume of building seems to be wider, than in reality and spherical dome more airy [Margulan, 1947 p. 67].

Three elements of the Alash-khan mausoleum rare for Kazakhstan mausoleums are still unclear in their purpose. They are the U-shaped bypass galleries built-in in walls at the level of under dome drum, two recesses 25x60cm in size in tympanums of inner corner arches opposite to the entry from the corner boxrooms of the upper bypass galleries and two pairs of intercrossing barling bails 67cm in crosssection set 50-60cm from the upper opening of dome. The aim of the latter element is attributed by researchers to the ritual actions and storage of religious accessory. The U-shaped bypass gallery at the level of under dome drum of the Alash-khan mausoleum resembles the similar structure in the round mausoleum (the 3-2nd century BC) in Chirik-Rabat city on the Jana-Darya, where the bypass gallery of narrow corridor 0.50m wide connecting several rectangular rooms was constructed in the wall at the level of 7.25m. The same gallery was built at the level of under dome structure in the Samanid mausoleum in Bukhara (the late 9th century). A similar gallery was found in one construction at the Baba-ata site in Southern Kazakhstan (the 7-8th century).

There are different opinions of researchers about the purpose of these structural elements. Perhaps, among them the most credible is M. Khodjaev's opinion that the location of the bypass corridor on the second tier was needed to erect a compact, monumental funeral or burial constructions, which at the same time had to include the canonical elements of a temple such as the central hall and bypass corridor [Khodjaev 1984, p. 63]. All given facts is an evidence that the architect of the Alash-khan mausoleum was aware of the ancient architecture of Central Asia

together with vast knowledge of the theory of architectural structure, i.e. he was an educated specialist in his time. As a result he created the architectural piece of art distinguished in deep originality of its monumental, sound, rational planning and constructive design, delicate décor and its synthesis with architecture as a whole.

The Zhanseit mausoleum (its ruins are situated 2km to South-West from Boztumsyk settlement of Ulytau district) and the Syrlytam mausoleum (closed to Atbasar) should be mentioned among the biggest constructions of Central Kazakhstan of the 13th century. Perfectly ornamented ceramic tiles withgeometric pattern of 'shenjere' type and botanical pattern of wonderful tracery and carving are evidence of high architectural and artistic level of these mausoleums. Since the 1220s the area of Southern Kazakhstan became a part of the Chagatai dominion. In the second half of the century the political and economical consolidation of the state provided the revival of cultural traditions of the Karakhanids. The architecture of this period can be characterized by two very interesting monuments such as the Daud-bek mausoleum (1262) and the Syrly-tam mausoleum (1279) on the Inkar-Darya. The former was constructed above the grave of Ulug-Bil'gya-Ikbal khan Daud-bek, a Turkic commander according to V.V. Bartold. The mausoleum differs in its original and quite specific volumetric-spatial design.

It resembles the type of rotunda open from all the four sides of the horizon. A spherical dome with perfect brickwork and ganch mortar rests upon four pylons connected by the through pointed arches and the voussoir archivolt adjoining them from the outside started directly from the level of a low stone socle. The transition from the tetrahedron to the dome is made by the spherical pendentives, i.e. it is the new structure design providing a more perfect arch-dome system in the architecture of Kazakhstan and Central Asia in the 14-15th centuries. The Daud-bek mausoleum has almost no

prototypes apart from, according to M.M. Mendikulov's statement, the Aysha-bibi mausoleum with four through recesses in the massive walls designed as decorative elements [Mendikulov, 1981 p. 531]. The architecture of the mausoleum occupies an important place in the history of Kazakhstan architecture not only with its innovated design, but also with the rich plasticity of architectural forms. There are no decorative elements in the building. The brickwork of high quality is executed in a carefully composed pattern.

Thus, the Daud-bek mausoleum is of the centric-dome type and can be regarded as a development of memorial constructions without portal of the Karakhanid period. According to G.A. Pugachenkova, the Syrly-tam mausoleum on the Inkar-Darya of the late 13th century stylistically occupied the intermediate position between the mausoleums in Maverannahr on the one hand and ones in the Semirechie and the Fergana Valley on the other [Masson, Pugachenkova 1950, p. 130]. It is a square (10x10m in size by outline) single chamber construction (7.6x7.6 m in size) covered with ellipse-shaped dome with the light opening in the top and 11.5m high according to V. A. Kallaur's data [Kallaur, 1896 p. 8]. The building is remarkable for its large volume. According to G.A. Pugachenkova, the Syrly-tam mausoleum (on the Inkar-Darya – B.G.) like the Babadja-khatun mausoleum and the Aysha-bibi mausoleum is the mausoleum for women, which was completely unheard of in Central Asia in the pre-Mongolian period. The building is bricked with the baked bricks 27x27x4.5cm and 23.5x12.5x4.5cm in size. The brickwork is very thorough and joints are so thin that it is impossible to identify what kind of mortar was used. The schematic draft of façade by Djanibekov indicates that the building was a portal mausoleum with a massive pointed dome which might have been a tent in the past. The upper part of the portal has fallen, its segmentations are formed by framing borders with alteration of decorated and simple brick lines; perhaps, the latter ones lost its white

facing [Masson, Pugachenkova 1950, p. 130]. Thus, it is the portal-dome type of mausoleums, but, as M.M. Mendikulkov noticed, the portal has an undeveloped look and it is just a wall-screen raised above small thickness of wall of the main façade decorated by traditional means. The stable continuation of constructive methods of the previous Karakhanid period can be clearly seen in this monument [Mendikulov, 1981 p. 390].

Together with that, it is possible to concede that the design of the main façade was planned to outline the dominating purpose of the high pointed dome. For the aim the architect created the new type of portal-peshtak with rectangular projections raised at edges, which looked like flank towers with the use of vertical decorative lines of different terracotta plates and three-quarter round corner columns 40cm [Tolstov, 1977 p. 281] in diameter. The middle part of portal is lowered and the representative aspect of dome from the main façade is considered. The recess of the main entrance is 4m high and doorway 2.3m high [Masson et al., 1950. p. 40] is covered with the pointed arches and framed with traditional U-shaped line with inscriptions on ganch mortar. The interior is laconically designed; the basic adorning element is the corner benched-arched pendentives with the pointed arch under the drum and on low recesses placed in axis and also in places of passage from hexahedron to the circle of the dome. In general, according to S.P. Tolstov, it is a very refined building clearly formed around the vertical axis, the mausoleum of centric type with the original peshtak combining the principles of Kazakhstan and Maverannahr architectural school of the pre-Mongol period.

The largest monuments of monumental architecture of the 14th century are the Syrly-tam mausoleum on the Jana-Darya, the Tek-Turmas mausoleum, the Kok-Kesene mausoleum in Southern Kazakhstan, the Bolgan-ata mausoleum in Central Kazakhstan, the Shakpak-ata underground mosques, and the Kosmola mausoleum in Western Kazakhstan and also the Khadja

Akhmed Yassavi mausoleum-khanaka in the city of Turkestan. The Syrly-tam mausoleum-khanaka on the Jana-Darya has survived only in the ruined condition, but the remains impress with their grandiosity and sublimity. The building is one of the biggest single chamber mausoleums in Kazakhstan and it is 10x15m in size by the perimeter.

The design of the Syrly-tam mausoleum is almost identical to the plans of mausoleums in Central Kazakhstan of the 13th century, but the massive peshtak with small increase of width relative to the width of building is evidence of strengthened role of the latter ones. The second doorway from the opposite side is also an evidence of changes. The Syrly-tam mausoleum is not inferior to the mazars of Kunya-Urgench in its architectural forms. It is bricked with the baked bricks 24x24x5cm in size. The central entrance with a portal (it was almost completely destroyed) and the pointed arch were located in the southern wall. The pylons of the portal were decorated with the special facing voussoir bricks of a high quality. The portal was also decorated with an ornamental majolica stripe (now it is ruined, too). The arch of the portal was bricked of the alternating simple facing and turquoise glazed bricks. The space between pylons of portal was covered with the semi-dome on the honeycomb trumpet arches. The room of mausoleum was covered with the double dome of baked bricks.

The dome lay upon the hexahedral drum. The passage from the rectangular room to the hexahedral drum is the octagon formed of the pointed recess-trumpets in the corners of the room and the light (15cm deep) pointed recess in walls. The remains of window openings have been preserved in the drum [Tolstov 1977, p. 276]. Therefore, the design of the mausoleum was the portal-dome with the tent cover. According to I.A. Castagne, the mausoleum of Sarly-tam is 5.5 sajene (1 sajene = 2.34 metres) and walls are 12 sajene long. The Arab inscription took place on the façade above the outer door [Castagne, 1910 p. 25]. The Kosmola mausoleum built over a

precipice at the high point of area of the western edge of Ustyurt plateau is extremely important as a landmark in the history of the Kazakh architecture. The construction is remarkable for its original planning and volumetric-spatial design. The octahedral shape with the portal and doorway in the southern side was used for the first time and bacame widely spread in the architecture of Kazakhstan, especially, in Western Kazakhstan. It should be underlined that the Kosmola mausoleum marks the beginning of the formation of the Western Kazakhstan architectural school, which blossomed in the late 18th – early 20th centuries.

The constructive design of the building is also marked with a innovative method becoming the traditional for Western Kazakhstan. M. M. Mendikulov described this method as follows: the buildings were erected, as a rule, without foundation and socle (apart from the later mausoleums). Initially, the grass cover was removed; the coat of worksite was consolidated with manual ramming. One row of stone slabs was placed on such a base along entire perimeter of outer walls, above which two parallel suites of wall blocks were bedded and the space between them was filled up with refuses of construction materials and soil with clay mortar. The levelled three-ply suite of blockwork was imbricated with horizontal slabs providing the transverse strength of this structure. Thus, the ancient method of blockwork known already among the Scythians of Northern Black Sea area, the ancient Romans, in Early Medieval Armenia and Vladimir-Suzdal architecture of the 12th century, received a specific interpretation in Westernt Kazakhstan [Mendikulov 1982, p. 147].

Thus, the large octahedral (8.2m in diameter) Kosmola mausoleum was hypothetically covered by a tent-pyramidal dome. The photography of 1952 shows that the massive portal of the monument with a deep recess and the triangle stepped arch and the door opening covered with one huge slab made the building look like a real monument strengthened by a picturesque

segmentation of wall with large abraded blocks 60-70cm high and horizontal slabs 12-13cm thick. It is necessary to notice that the design interaction of volumes of octahedron and portal is managed by an architect with high skills and these main forms of mausoleum are harmonically combined and clearly reproducing the image of nomadic dwelling, i.e. the yurt.

The population of Western Kazakhstan in Mangyshlak in conditions of hot climate preferred to construct subterranean mosques dug in solid rocks of ravine cliffs or slopes of chalk maintains. Nowadays, more than ten mosques of this type are known. The earliest of them is dated back to the late 12th century [Pervye russkie… 1963, p. 282-283]. The Shopan-ata subterranean mosque dated back by M.M. Mendikulov to the late 12th – early 13th century is attributed to the earliest monuments of subterranean architecture of Mangyshlak. It is graved in the rock and is distinguished by its developed composition. A rectangular central hall (7.1x5.1m) is designed as the lounge-khanaka with two adjoining spacious rooms for pilgrims and a mosque room placed in the eastern side of the cave. Two burial chambers (of Shopan-ata and his daughter, according to legend) significantly deepened in the rock are included into the complex. The central hall is illuminated through a round light aperture and also with the help of a ventilation opening 1.2m in diameter.

The rock walls of the whole complex of the mosque without any décor elements are roughly hewed. Evidently, such an austere atmosphere corresponded to the austerity spirit of mystics-hermits, one of which was, perhaps, Shopan-ata himself [Mendikulov 1987, p. 11]. The high level of subterranean architecture of Western Kazakhstan of the 14th century is demonstrated by the mosque of Shakpak-ata. The construction is graved in the rock cape and its planning is interesting: the shape of Latin cross oriented from East to West. Its main element is the central square (5x4.5m

in size) hall separated from all four rooms by an elliptic arched wall supported by four corner three-quarter columns with a capital, without a base, but with an entasis. The significance of the hall is underlined by the dome cover and the light and ventilation opening (1.2m in diameter and 5m high) in the dome. The square protective construction built of the cut large rectangular blocks of malm-rock used, obviously, also as minaret (remains of spiral stairs are evidence) was erected above the mosque.

The upper part of the construction above the ground has not survived and the remaining walls are just 3.9m high, but, according to M.M. Mendikulov, it is possible to assume that the pavilion was very high and the upper part of ceiling was, perhaps, a small tower-lamp like a simple top of a minaret. Three window openings arched with the voussoir pointed arches and now partly blocked are an indirect evidence of the once existing cover [Mendikulov 1987, p. 22-23]. The northern, southern and western rooms placed at the three sides from the central one are equal in size (4.5x4m) and the eastern one is 9m long. The northern and southern rooms are separated from the central hall by a slight rise of the floor (20cm); the ceilings in them are flat unlike the ones in the central hall. Small recesses and chambers – carrels were graved in walls of the southern and eastern rooms and iwan was placed at both entries from East and West. The main entry is the eastern one connecting the mosque with the plateau surface.

Mihrab in the mosque of Shakpak-ata is designed as the arch recess, what does not contradict the sharia law and such a design took place in the block mosques acceptable to pray for the dead. Therefore, it is clear why this mihrab wall was richly decorated with the Koran suras, inscriptions of Sufi poems and the picture of open human palm with five fingers. The interior is remarkable for its laconic design. The impression of mystery and austerity is animated by round three-quarter corner columns (more than 2m high) with the developed variable capitals resembling the columns of hearths of

the 4-7th centuries in Bagishamal [Pugachenkova 1948, p. 37] and arches in the central hall and also the arch recesses cut in rocks. A.G. Medoev held that the columns were not loaded and aimed first of all to architectonics. The architects had the creative courage and sense of harmony. Graving the mosque in the subterranean monolith they acted as sculptors and not as builders. It is unique also as an architectural complex and as a medieval construction graved in the monolith, wholly preserved and discovered for the first time on the territory of Central Asia and Kazakhstan [Medoev 1969, p. 56]. Thus, this unique construction glyptic in rock with general length of rooms of more than 17m in the east-western direction and more than 13m in the north-southern, with width of 4.5m and height of 2m (apart from the central hall), with the high stone tower-minaret placed on the highest point of the rock plateau is the monument of mightiness, ideals, diligence and the high culture of the nomadic society of Deshti-Kipchak. Perhaps, M.M. Mendikulov was right that Sufi community was unable to build this subterranean construction and the state helped to build the mosque [Mendikulov, 1987 p.19]. Therefore, it is possible to assume that the Shakpak-ata mosque was erected as a generic regional building for public worship.

2.4. Architecture of the Kazakh khanates period (the XV-XVIII centuries)

Town planning (ancient settlements Sauran, Sygnak, Bozok, Zhaik, Aral-Asar). Functional zoning and improvement. Karez system of Sauran settlement.

Mausoleums of Kazakhstan with tent and pyramidal overlapping (mausoleums on Aral and Zhaik, Rabiya-Sultan-begim, Botagai, Bolgasyn, Kaldyrgach-Bi, Kesene, Kok-Kesene, Abat-Baytak). Features of

subdome designs and decoration. Development of architecture of the mobile dwelling.

Influence of Jungar invasion on emergence of Buddhist constructions in East Kazakhstan (ancient settlements the Ablaykit chambers, Seven chambers, Kzyl-Kent). Adobe mausoleums of Central (Betpak-dala's monuments) and Southern Kazakhstan (mausoleums of Sozak), their special and common features. Arch-and-dome, rock-mount and frame mosques with iwans and without them.

During the Ak-Orda and Altyn Orda (14-15 cc.C.E.), The Kazakh Khanate (15-18 cc. C.E.) continue to exist cities Sygnak, Sarayshyk, Zhaik, Sauran, Turkestan. The high engineering art shows system of Karez in Sauran, only in Kazakhstan. In the memorial architecture revives the tradition of tower Oguz mausoleums (Shik-Niyaz, Karmakchi-ata, Azhe-ata, South Kazakhstan region), which are characterized by the use of adobe bricks, cylindrical shape, the integrity of the interior with a smooth transition from the walls to overlap, lack of decorative details. Along with this, also erected tent mausoleums built of burned brick with portals, in the north of the country (Abat-Baytak, Kesene).

The town of Turkestan became one of the northern footholds of Tamerlane's huge state in the late 14th century and it was actively developed in connection with the intensification of cultural exchange with the Deshti-Kipchak. It was supported not only by its important strategic position, but also by its location on the caravan roads leading from areas of Maverannahr into the Syr-Darya steppes. For sure, not ostentatious piety, but ideological and political reasons guided such a farsighted politician as Tamerlane to construct in this distant town a huge mausoleum-khanaka above the grave of famous Sufi teacher – Khodja Akhmed Yassavi; this

monument rivalled the best buildings of that period in Samarkand in grandeur and splendour [Pugachenkova 1948, p. 40]. It is necessary to know at least some details related to the development of the site which has been only partially preserved, in order to imagine the origin of this piece of architectural art of Kazakhstan and Central Asia. Five columns disclosed by M.E. Masson and T. Mirgiyazov in different block mosques during the archaeological and topographical surveys in Turkestan city in 1928 are interesting; there are inscriptions (interpreted by M.E. Masson) on two of them. One of them included the 'date of the 10th of safara, 753 of Hegira (i.e. the 7th of April, 1352) and another included the 'date of 876 of Hegira (1470-1471)' and also data on construction of 'the mosque by the order of Emir Muhammad-bani-Buk, bani-Amir-Datkha; the graver is Isa' [Pugachenkova 1948, p. 48]. G.A. Pugachenkova, researching the columns in details, wrote: 'The stylistic similarity between two of them allows assuming the possibility of their belonging to one building.

The characteristic feature of these columns are very different from some known Central Asian samples is that their lower part of trunk is thinned; the first one (1352) is not as thin as the rest of them. The comparison of columns from Turkestan city is a good illustration of evolution of the architectural forms during more than one century. The proportions are more monumental, decoration is placed on big surfaces, the vertical and horizontal segmentations are clear and balanced, the pattern design with the equidistributed geometric, botanical and epigraphic motifs is complicated, the carving motifs are various and rich, the technique is virtuosic for the 12th century. In the columns of the late 15th century the proportions were refined, segmentation was made according to the principle of small scale horizontal divisions (leading to the lack of constructive separation of a trunk from a capital), the carving was flatter, the decoration motifs are simpler and detailed, but yet variable' [Pugachenkova 1948, p. 50]. Therefore, the great samples of carved wooden

columns are an evidence of the high level of development of architecture in the late 14th century in Turkestan city, where specific architecture, quite different from the traditional Sogdian forms, was created.

The constructions with columns and the narrowing lower part of trunks form a specific local group, since the area of their spread is limited to Southern Kazakhstan, if the parallels in the world practice (the wooden columns of Knossos palace, 'Lions' gates' in the treasure house of King Atreus in Mycenae, the archaic architecture of the Caucasian peoples, and so on) are not taken into consideration. This unusual shape of the column 'obviously, fitted with not only a quite specific aesthetic, but also with the pure practical purposes such as seismic (and not static) stability of the stand and decrease of free opening of girder at increase of its resting area on other one' [Pugachenkova 1948, p. 48].

This type of columns, archaic for the world architecture since long ago, remained in the religious architecture of the towns in the Syr-Darya area of Kazakhstan till, at least, the 15th century. The columns of the Arslan-baba mosque erected by Tamerlane's order in Otrar in the late 14th – early 15th centuries are similar to those ones from Turkestan city in some aspects. V.L. Voronina, measuring and studying in details the two remaining columns from the old mosque of Otrar, which was built anew after the earthquake in the mid-18th century, wrote: 'The first column is 3.49m high, the second one is 1.5m shorter, the decoration of the column is very restrained and limited to geometric motifs. The square capital is a specific feature of these monuments. In the architecture of the Middle Ages the columns with such a capital were few in number: the carved column in khanaka of Khodja-Akhmed Yassavi, the Zeravshan columns from Urmitan (the 11-12th century) and Rarz (the 15th century), the columns of mountainous Tajikistan of the 19-20th centuries, and so on. The columns of Otrar are a special historic monument that belonged to a special category of

columns. The geometric clearness of details and strictness of decoration are combined in them. They throw new light on the data related to the wooden order in the history of Central Asia and Kazakhstan' [Voronina 1975, p. 72-74]. The columns of Turkestan city are notable for the high level of craftsmanship; in order to understand its sources one may refer to 'Sutumi-salamga' poles – a place of greeting in the Caucasian andTajik dwellings – supporting a ceiling 'darbazy', where the poles are endowed with special magic function connected to the cult of fire and hearth.

As we have already mentioned, the end of the 14th- early 15th centuries in Kazakhstan was marked by an impressive Khodja Akhmed Yassavi mausoleum-khanaka in the city of Turkestan. The Turkestan complex has more than 30 rooms different in goal and size placed in order to underline the purpose, sanctity and benediction of the burial place of Akhmed al-Yassavi. The genius architect hoja Khusein Al-Shirazi managed to materialise the ideology of Islam and reflect its moral-ethic regulations in architecture and to create the needed social-psychological atmosphere to preach Islam (mostly of its Sufi variety) by putting the sepulchre in the forefront and therefore underlining its leading role in the composition. The mausoleum including three basic elements such as the central square room of gurkhana with sides 7.15m in size, ziaratkhana of almost the same size and the portal 13m wide above the external entrance is placed on the most honourable place called 'gor'. There is an exit opening to all sides of the world marked by shallow recesses decorated with stalactites in gurkhana with the mortuary monument faced with pale green marble. The room is covered with a double shell dome; the inner pointed form is rested upon pendentives also decorated with stalactites and the outer ribbed one (with 52 ribs) stands on a high cylindrical drum with the wide line of epigraphic décor and friezes. The general height of the ribbed dome is 21m [Nurmukhamedov 1980, p. 30-34]. The rest of rooms are placed in 3 Such classification of the complex, similar to Pugachenkova's khanaka-

mausoleum, apparently most fully reflects its typology in contrast to many scholars' opinion, including Tuyakbaeva and Mendikulov, who labelled it mausoleum-mosque, as well as Nurmukhamedov and Zasypkin. Dobrosmyslov gives relatively full data related to the construction of this last building constructed by Tamerlane, which were taken from the book by Tamerlane's contemporary historian Sharafeddin Ali Yazdi in his Zafar-name (The Book a Victories). front of the doorway, at the pediment and by the sides of the mausoleum (therefore, it is more correct to regard this complex as a mausoleum-khanaka).

The largest room is djamaatkhana connected with gurkhana through ziaratkhana, which doors are notable for highly artistic carving and its khalka (steel ring) has an inscribed poem mentioning the name of the author of this piece of art: Izzaddin, the son of Tadjaddin from Isfagan and the date: 799 of Hegira, i.e. 1397 [Pugachenkova 1950, p. 91]. B.T. Tuyakbaeva offered a different interpretation '... Tadj-ad-din an-sakaba - foundry worker, chaser' [Tuyakbaeva, 1989 p. 31]. The square room of the djamaatkhana is covered with the biggest double shell dome in Central Asia and Kazakhstan. It is interesting that the inner pointed dome 18.2m in diameter is the bearing dome for the external spherical dome being smaller in diameter and 36m above the floor level. A huge bronze kazan (cauldron) (owning to which the hall is named as kazanlyk) is placed in the centre of the hall and the inscription on it says that 'it was casted by Tamerlane's order by master Abdul-Azis, son of master Sarvar ed-din from Tavriz in 10 shavval of 801 (in July of 1399) and is aimed to keep water' [Dobrosmyslov, 1912 p. 137]. The mosque, kitapkhana, hudjra on two levels and askhana are placed to the South from the mausoleum and Big and Small aksarai, hudjra on two levels and kudukkhana are placed to the East.

The necessity to orientate mikhrab of the mosque to the South-West, i.e. in the direction of Mecca led to localisation of the whole building of

mausoleum-khanaka with the South-East orientation of the main entrance. The most grandiose and majestic part in the complex is the portal of the main façade 50.4m wide with a huge pointed recess 57.0m high (wider and higher that the main volume), 18m wide and 13m deep. Its monumentality is strengthened in contrast with a respectively small door opening placed deeply in the recess and two faceted corner towers flanking the portal. In general, the main façade is designed as opening outside and rhythmically sharply increasing pointed recesses; it demonstrates the image of wide spread of the radiating from within, from 'paradise gardens' (raudat - mausoleum) doctrine of sheikh-poet Akhmed Yassavi. At the same time it is an image of a widely open embrace happily accepting people and inviting them to purification of the soul and perfection of the spirit.

The constructive design of mausoleum-khanaka is also very interesting. The engineering and technical methods are notable for their deep and scientific validity providing stability and longevity of the huge construction, since other great buildings of the Timurid period either have completely disappeared or are in ruins. Professor A.A. Shishkin, an expert in stone constructions, indicated the astonishing insight of builders constructing the complicated and huge complex in seismic conditions and on uneven bases. The simplicity and precision of the constructive scheme achieved by cutting the whole complex into eight constructively independent spatial blocks provided the long-term preservation and general stability of the complex even when the loess base of the complex was frequently saturated with excessive humidity in the past. The cutting was carried out by six through and two blind Mausoleum Kaldyrgach-biy. This great engineering design is the evidence that the architect managed to embody and develop the achievements of the previous architecture of Central Asia and Kazakhstan in this outstanding monument.

In order to strengthen the artistic expressiveness of the mausoleum-khanaka the architects widely used ‘carving and bones, art processing of stones and metal, decoration, motifs genetically linked to people’s applied art’ in the interior [Dennike 1939, p. 8]. In the ornament we see ‘the elements derived from the art of Iran, later preserved in Central Asia and falling out of use in Kazakhstan. Along with these we see some elements of the Kazakh folk ornament in the decor and composition of the door’ [Mendikulov, 1981, p. 555]. It should be noticed that T. B. Basenov ascertained the facts of adoption of bases of local patterns, e.g., a pattern known as ‘tort-ayshik’ in the carving decoration of the door in the mausoleum-khanaka. This is clear if we take into account that the invited architects could not ignore the local traditions of décor. However, partial adoption of the local art was carried out in such a complex and masked way that it is impossible to see the adoption without a special analysis.

One important feature of the mausoleum-khanaka such as its complex character should be noted at referring to the complex architectural traditions of the Central Asian Maverannahr architectural school. It is hard to find in Central Asia such type of constructions uniting such a range of room type, apart from the pre-Islamic civic constructions in Khoresm and Turkmenistan resembling the Turkestan complex only by their huge size.

In Kazakhstan, a palatial and religious construction of Akyrtas (the 7-8th century) near the city of Taraz, had such a complex purpose. The analysis of the functional structure of these complexes allows stating that in the area of interpenetration of the culture of nomadic and settled societies the erection of such large centres for religious and educational purposes as the mausoleum-khanaka of Akhmed Yassavi and Akyrtas was reasonable and such type of buildings should be attributed to traditions of the Northern Turkestan-Kazakhstan architectural school. If it is true, then the following conclusions can be made in relation to the architecture of the

mausoleum-khanaka: the complex is a result of organic combination and merging of artistic and constructive traditions of the architecture of Maverannahr with the traditional Kazakh approach to the organization of the functional structure of buildings. It becomes evident if we pay attention to one important detail; the architect of the Akhmed Yassavi mausoleum-khanaka made the hardest decision to cover the djamaatkhana with such a big dome with due regard for local conditions, while in Central Asia such constructive element always remained an open yard. It is a clear origin of a new, previously unknown in Central Asia type of construction based on the local natural, climatic, social, economic and other conditions.

The upper part of the portal of the main façade remained incomplete by Tamerlane's death and according to a legend it was developed further to its contemporary, but also incomplete condition by Abdullakhan, the Emir of Bukhara. Nevertheless, the main façade is majestic and monumental due to its large-scaled laconic forms even in such an incomplete condition. Tamerlane intended to please the nomads with respect to their national shrine, to underline the spiritual unity of peoples professing Islam, to impress a susceptible nomad with the grandeur of the plan and to produce the image of the mighty empire with its construction. Such practical goals were implied in the construction of a first-grade monument of Central Asian architecture in outlying districts in the late 14th century [Masson, 1930].

Therefore, the characteristic feature of architecture of the Timurid period is the mutual enrichment of architecture of different regions in the huge state by penetration and merging of creative ideas and trends formed both in the capital centres being the main focus of cultural activities as well as in the outlying districts [Pugachenkova, 1978]. Generally, the erection of the mausoleum-khanaka of Akhmed Yassavi is a conclusion of the achievements of architecture in Central Asia and Kazakhstan at least up to

the 15th century. It is quite possible to state that certain traditions, e.g., the erection of dome above a square room has been known approximately since the 4th century BC, were developed in the architecture of Kazakhstan by the 15th century. Initially the domes in the corners of tetragon were rested upon special bricked poles, then since the 7-8th centuries upon trumpet arches occupying just a 1/5-1/4 of tetragon. Such structures weakly supported the dome ring which had to be additionally deepened into walls. By the 9-10th centuries the under dome part becomes a regular octahedron with hardly visible squinches. Shield-shaped pendentives and intersected arches allowing widening the spans and recesses and decreasing the centre of gravity of a building were introduced in the 13th century. Afterwards, the shield-shaped pendentives gave way in Central Asia to the elegant and rational cancellated pendentives, excelling the netted structures developed by the engineer V. G. Shukhov; however, the trumpet arches have not been forgotten and were still used in buildings of the folk architects [Masson, 1930]. In conclusion it should be acknowledged that the architecture of the Akhmed Yassavi mausoleum-khanaka greatly influenced the next stage of the development of popular architecture of Kazakhstan and remained the object of imitation for many centuries. For example, the mausoleum-mosque in the Baba-ata settlement in Karatau repeated the design scheme of the Turkestan mausoleum-khanaka in a slightly simplified way [Ibraev, 1981].

In the 15th century begins a new stage in the development of monumental architecture of Kazakhstan conditioned by establishment (in the mid-15th century) and development of the Kazakh khanate. The mausoleum of Kaldyrgach-biy is one of notable monuments of the early 15th century, continuing the traditions of the specific North-Turkestan architectural school. In terms of its overall composition the mausoleum is attributed to the centric, portal-less, tent type with a pyramidal dome originated, according to G.A. Pugachenkova, from the grave constructions

of the Turkic tribes that had once inhabited the northern area of Central Asia (Southern Kazakhstan – B.G.). The 'tent mausoleums' were widely spread in the 11-12th centuries, when the waves of Turkic migration from the Syr-Darya area hit Maverannahr, Khorasan, Azerbaijan, and other areas.

This type of monumental architecture of baked brick had remained popular until the 15th century, but it survived in the traditions of the Kazakh and the Kyrgyz architecture up to the recent centuries [Pugachenkova 1950, p. 91]. Not only historical facts, but also the structure of the inner dome is dating the construction of mausoleum (note later than the early 15th century). The transitional system of the octahedron with the recess pendentives and intermediate shield-shapes pendentives was introduced in the Central Asian architecture in the late 14th century (the monuments of the Timurid period – theAkhmed Yassavi mausoleum-khanaka in Turkestan city, the Bibi-khanym mosque and mausoleum, and so on.). However, it was gradually replaced by a more complicated, but more perfect system of intersect arches and shield-shaped pendentives in the late 15th century [Castagne, 1911, p. 29].

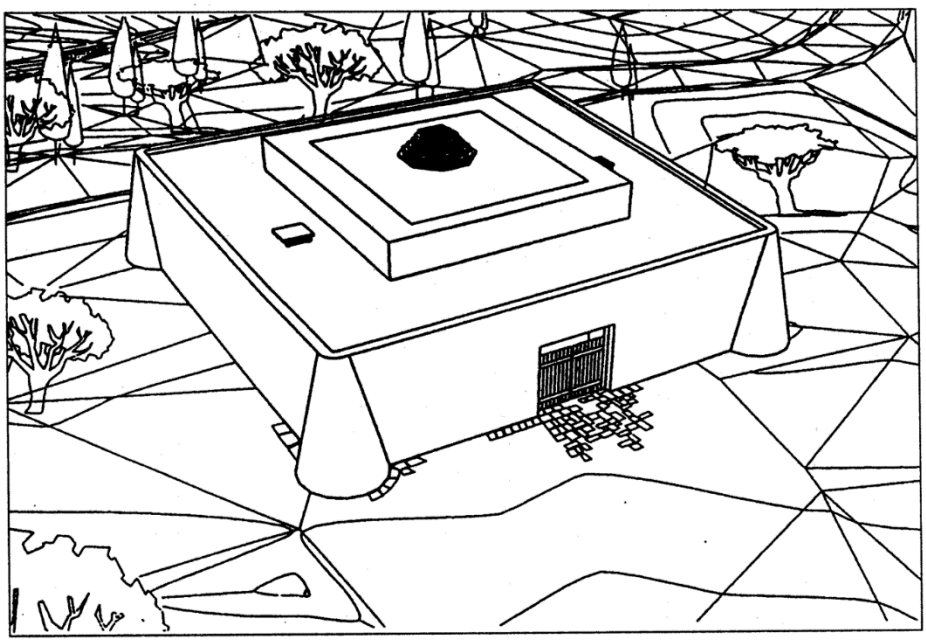
The mausoleum of Bolgan-ana built 10km upstream of confluence of the Kara-Kengir and the Sarysu rivers in Central Kazakhstan (Djezkazgan province), the mausoleum of Abat-Baytak in the Beskopa complex of landscape facie in the middle of the Uly-Khobda river of Aktubinsk province and also the mausoleum of Kok-Kesen built several years later than the mausoleum of Abat-Baytak stand out among numerous monuments of the 15th century. In 1901 V. Kallaur researched and photographed the remains of the beautiful mausoleum of Kok-Kesen of the 14-15th centuries, about which Abulgazi-khan wrote already in the mid-17th century. In 1914 the building collapsed and when A. Yakubovskiy researched the site in 1927, the mausoleum was preserved only as the

abutment of the southern arch of portal and a heap of ruins [Yakubovskiy 1929, p. 154].

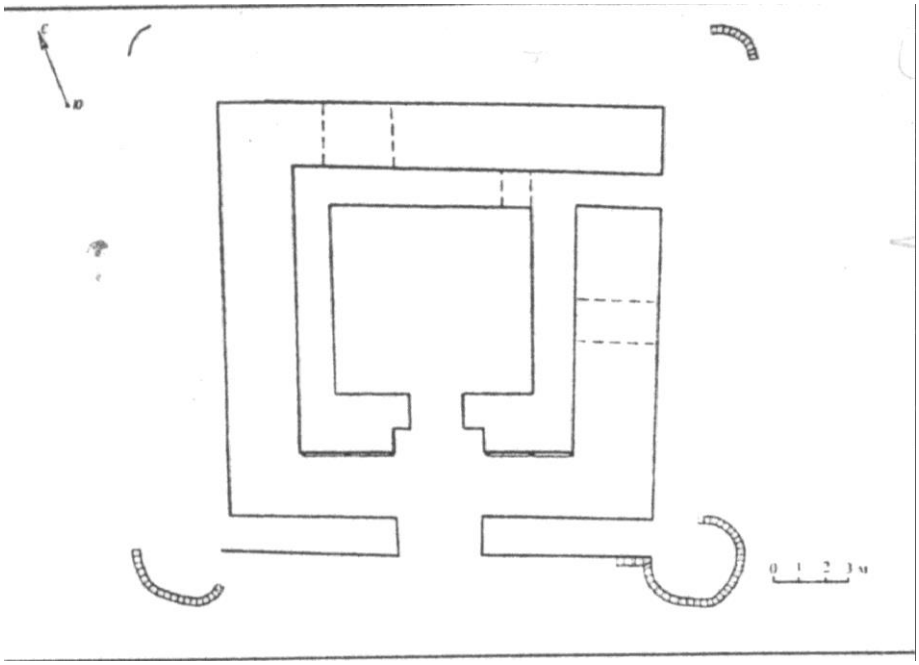
One of significant remaining constructions of the Turkestan complex – the Rabi-i Sultan-begim mausoleum was built in the late 15th century. The mausoleum continues the tradition of the memorial constructions of the Timurid period by its volumetric design. Initially it was an octahedral building with one chamber covered with a double shell dome. The external dome was placed on the high cylindrical drum very similar in its shape to the dome of the Khodja Akhmed Yassavi mausoleum. The only difference is that there are no ribs on the dome of the Rabi-i Sultan-begim mausoleum. Afterwards, four more rooms were added to the central octahedral hall. The main entrance turned to the mausoleum-khanaka (it is an unusual design which breaches the traditional Southern or Eastern orientation of mausoleums) is marked with the portal with a deep entrance recess covered with a high pointed arch. The transition to the dome in the octahedron was carried out with the help of arched pendentives. Like in the Gur-Emir mausoleum, the builders took into account the function of structures of this building; having the arch pendentives, they cut the corners of the cubic volume, because they were very massive due to the wall thickness and were not loaded [Pugachenkova, 1950 p.181].

Therefore the outer look of the mausoleum was that of an octahedron. The burial vault covered with a low dome rested upon eight low pointed arches was built under this central room. In the architecture of mausoleum there is a tendency towards more elegant, vertical proportions both in exterior and interior achieved by the increased height of walls. The octahedron is faced with polished bricks. The drum is decorated with white-blue inscriptions and the turquoise dome with geometric ornament. The mausoleum is notable for its highly expressive silhouette and remains visible even in close proximity to the complex of Akhmed Yassavi. The architecture of the Rabi-i

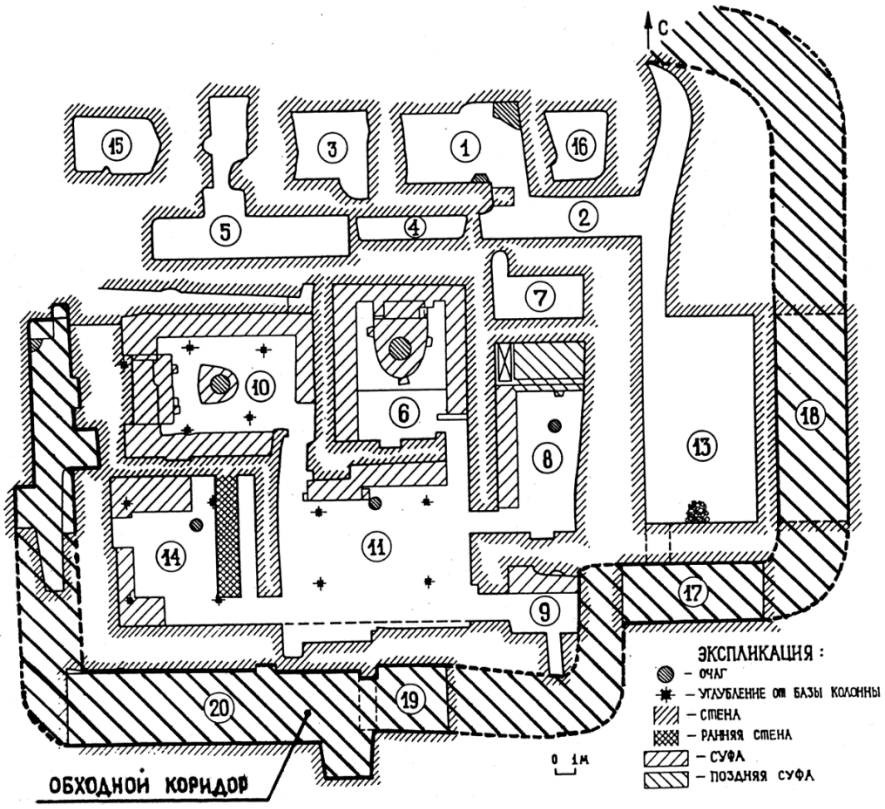
Sultan-begim mausoleum seriously influenced the development of Kazakhstan architecture in the next periods. As it is well-known, in the 16th century the architecture of Kazakhstan saw the development of various types of memorial and religious constructions with the centric composition, promoting the idea of centralisation and providing the strengthening of identity of the national feature of architectural monuments in connection with development of Kazakh khanate.



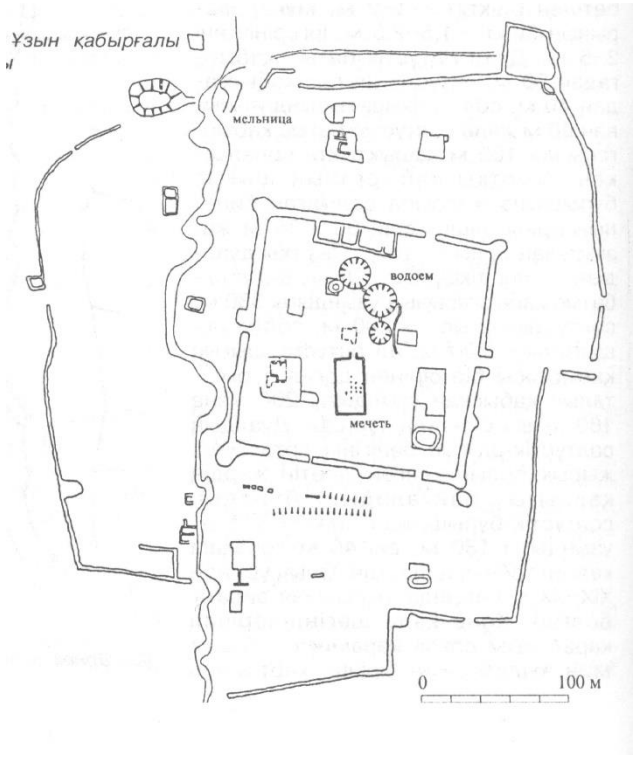
Kayalyk settlement. Buddhist temple. Reconstruction



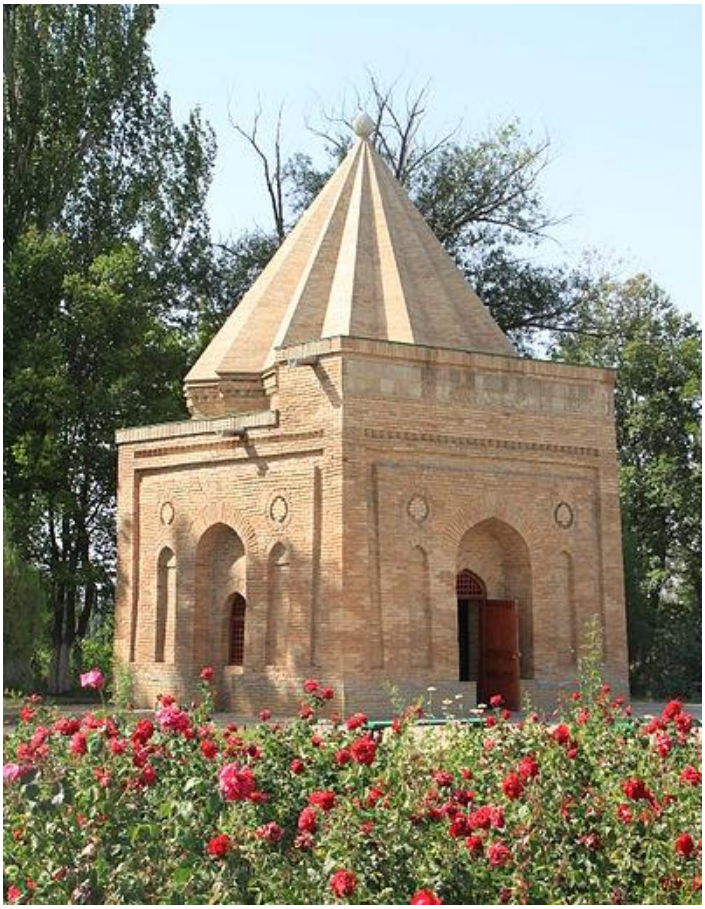
Kayalyk settlement. Buddhist temple. Plan



Plan of the Kostobe settlement



Plan of the Ornek settlement



Mausoleum Babaji-khatun

Mausoleum Aisha-Bibi

Mausoleum Karakhan

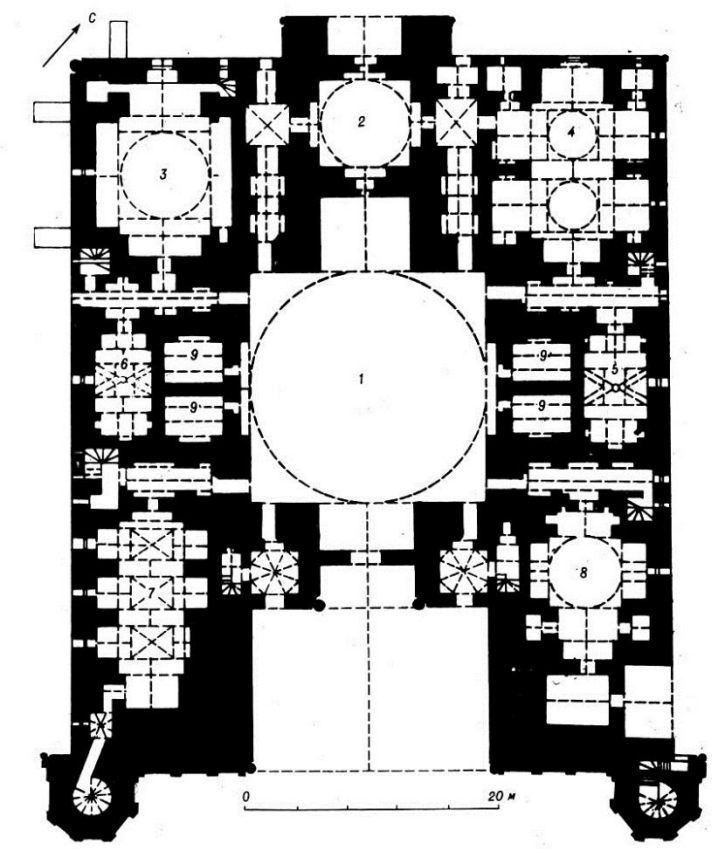
Mausoleum Alasha-khan

Mausoleum Zhoshi-khan

Mausoleum of Khoja Akhmed Yassawi. General view and plan of the complex

Mausoleum of Khoja Akhmed Yassawi

Section



Mausoleum of Khoja Akhmed Yassawi. Plan

Abat Baytak mausoleum

Kok Kesene mausoleum

PART 3. ARCHITECTURE OF MODERNITY

3.1. Architecture of Kazakhstan in XIX c.

Necropolises (the Western Kazakhstan). Gravestone constructions. Mausoleums (portal-and-dome, centripetal-dome). Memorial architecture of the Western Kazakhstan. Typology: kairak – vertically driven tomb stone with epitaphs; kulpytas – vertically put column, a stele; koy-tas – the stone stylized figure of a ram; besik-tas – a gravestone in the form of the cylindrical roller ("cradle"); sandyk-tas - a stone funeral box; sagana-tam,– funeral fencings; mausoleums.

Features of use of construction materials, constructive methods, architectural and art processing (a wall painter, a carving on a stone, a plastic modeling). The main monuments of the period (mausoleums Omar-i-Tur, Nurbergen Kalyshuly, Zhuban, Aytman, etc.). Housing and cult complexes and necropolises.

Formation of binary structure in the old cities, emergence of the new cities, influence of the Russian and European architectural and town-planning tradition. City structure: formation and the remained monuments of architecture. New types of buildings: administrative, medical and educational institutions, stations, cult constructions. Main monuments of the period. Influence of various styles on formation of architectural shape of the cities (Brick style, Neoclassicism, Historical styles (Romanesque, Gothic, Renaissance, Neo-Russian), Eclecticism, Modern (Art Nouveau). Wooden and stone housing construction.

Kazakh memorials are extremely diversity of species, ranging from archaic stone boxes (sandyk-tas), gravestones pillars (kulpytas), stone and adobe fences (sagana and tortkulak), and ending with the monumental mausoleums (mazar), built of sandstone and shell rock. All kinds of burials in the facade planes and interiors decorated with ornaments of bright color. On the kulpytas walls, along with epigraphy often depict weapons, and in the interiors of sagana and mazar - household items (dishes, clothing), created the illusion of home. Main horizontal and vertical structural elements were decorated with colored thread with imitation of webbing, pulls together the skeleton of the yurt. It is applied as contrasting color painting on stone walls (the predominant colors - red, yellow, blue color). A characteristic feature of Mangistau memorials becomes their hooded shaped domes.

After joining to Russia, European techniques of architecture and architecture penetrate in Kazakhstan. So, near to the old town built a regular "new" part with a rectangular grid of blocks, the central area with the church, and administrative facilities, street landscaping, public parks and gardens. Appeared new cities on the basis of Russian military fortresses - Uralsk, Semipalatinsk, Ust-Kamenogorsk, Pavlodar, Petropavlovsk, Verny (Almaty). Mass settling of nomads led to the emergence of transitional houses: shoshala (stationary yurt made of wood, brick, stone), korzhyn-ui (adobe dwelling with 1-2 rooms). Kazakhstan is involved in the area of the European styles distribution: Neoclassical, Historicism, Eclecticism, Art Nouveau. So there is a synthesis of traditional and European, which had the consequence of peculiar patterns of cult objects in the neo-Gothic style (the mosque in Kostanay), the style of the Maghreb (Ramazanov mosque in Pavlodar, Semipalatinsk), "brick style" (Durmankulov mosque in Kazalinsk), eclectic (Yuldashev mosque in Zharkent) and others. In addition, the traditional architecture of the Kazakhs currently experiencing its heyday, for example, in western

Kazakhstan formed memorial museums in the open air, often related to the ancient and medieval places of worship. There are stationary systems in the field of migrations, whose composition usually includes a mosque (4-6-8-12-domed buildings), residential and farm buildings, set around an open courtyard.

In the XVIII century (1732), Kazakhstan joins Russia, which determined the development of the region in the general channel of Russian urban development. In all regions, linear fortifications are being erected on which fortresses appear that later turned into cities: along the Yaitskaya line - Uralsk (Yaitsky town), Guryev and others, along the Irtysh line - Semipalatinsk, Ust-Kamenogorsk, Petropavlovsk, etc. In the 60's. Of the XIX century, the Kokand and Khiva khanates were supplanted from the South Kazakhstan and Syr Darya lands, which leads to the modernization of existing (Shymkent, Taraz, Sairam) the emergence of new cities (Almaty).

Along with the emergence and growth of cities, the development of capitalism in Kazakhstan, as well as in Russia, was accompanied by the emergence of a new type of settlement of factory towns and craft and trading villages. So, on the basis of the development of natural resources of Kazakhstan, workers' settlements arose in Karaganda, Dzhezkazgan, Nelda and other places. Another new type of settlement in the mid-19th century was the settlements of immigrants - typical Russian-Ukrainian villages built up with small wooden or adobe huts.

Already in the XVII century. on the territory of Kazakhstan there are fortresses that later turned into large cities. So, the city of Uralsk - the oldest city in Kazakhstan - was founded in 1613. It is located on the right bank of the Ural River at the confluence of the Chagan River. The Ural River (Yaik) with adjacent forests and pastures was convenient for the sites of nomads, Scythians, Avars, Pechenegs and others. Yaitsky town in 1775.

was renamed to Uralsk. The most ancient part of the city is the “Kuren” district. This is one of the few cities in Kazakhstan with preserved historical buildings.

The cities of East Kazakhstan that sprang up on the Irtysh military line quickly turned into industrial and trade centers of the region. These were one of the earliest cities founded by the Russian Empire in Kazakhstan. The foundation of Semipalatinsk occurred in 1718 and is associated with the famous Decree of Peter I on the protection of the eastern lands and the beginning of the construction of the Irtysh fortifications, the construction of which lasted from 1714 to 1720. In the fall of 1718, the Semipalatnaya fortress, under the supervision of Lieutenant Colonel P. Stupin, was "fortified and fully armed." Having developed as a border and military support base, the Semipalatinsk fortress, as it developed, turned into an important point of trade not only between Russia and Kazakhstan, but also between Russia, Central Asia and Western China.

From the very foundation of Semipalatinsk, Jungarian Kalmyks, Bukhara, Tashkent, Kokandans came here for bargaining. In 1776, Captain I.G. was seconded by the Governor-General of Western Siberia to lay a fortress on a new project. Andreev, who rebuilt these fortresses, built bridges, roads, took maps and plans of tracts, redoubts, outposts and other military fortifications. Residents of the old fortress, military personnel, Cossacks, as well as part of the trading people began to move to the new fortress. October 1, 1854 the grand opening of the Semipalatinsk region. Semipalatinsk immediately turned from a provincial city into a regional one. The newly established region became the most extensive in the Russian Empire. Semipalatinsk is becoming one of the leading cities in Kazakhstan. Since 1873 the city had a telegraph, and since 1910. - telephone and the first water supply system in Kazakhstan. In 1906 there was an official opening of shipping on the upper Irtysh.

In 1720, on the Irtysh military line during the confluence of Ulba into the Irtysh by a detachment of Major I.V. Likharev was founded Ust-Kamennaya fortress. The construction of the fortress was led by engineer Letrange. The fortress was a fortification with a high earthen rampart in the form of a regular quadrangle, a moat was circled around and inside, "a front garden was set up over a rampart." The buildings inside the fortress were wooden. This wooden fortress burned to the ground in 1765. Construction began on a new fortress, large, surrounded by a rampart and ditches. The remains of this earthen rampart are still preserved. The village became 1804 a city without a county, and in 1868 a district city of the Semipalatinsk province. At the beginning of the twentieth century, our city already totaled 8 streets, 12 lanes.

The city had a quarterly layout. Among urban buildings, wooden, one-story houses dominated, making up more than 80% of all buildings. Two-story houses were state-owned, occupied by institutions, mansions of wealthy citizens. The factory industry was poorly developed, although at the beginning of the twentieth century industry growth was noticeable due to increased demand for livestock raw materials in the central provinces of Russia. The processing of raw materials: lard, leather, sheepskin, has gained particularly fast pace. Ust-Kamenogorsk was the center of the gold mining of the Ore Altai and the Kalba mountains. Many gold miners lived in it; for the winter, employees from gold mines gathered there. A significant part of the city's population was engaged in gold mining diligently. Until 1860, there was not a single public school in Ust-Kamenogorsk. In 1863, male and female parish schools were opened in the city, which were located in one wooden house. Near the fortress appears a village, a village.

At the same time, the city of Pavlodar was founded in the north-eastern region of Kazakhstan. According to historical data, in the 9th-12th

centuries, not far from the place of existence of modern Pavlodar, there was the city of Imakia (Kimakia), the disappeared medieval city of Kimaks, the capital of the Kimak Khaganate. Pavlodar dates back to 1720, when an outpost Koryakovsky appeared in a series of Russian military fortresses and outposts on the Irtysh River, so named because it was built next to the stores of salt mined on Koryakovsky Lake. According to the surviving documents, the outpost had the shape of a square of 50 by 50 meters, was surrounded by a high log picket fence, in the corners had bastions with artillery batteries. Barracks were located in the inside, and stables and a bathhouse were outside. The entire outpost garrison had 48 people.

During the second half of the XVIII century. Irtysh fortification was losing its strategic military significance. Fortresses and outposts became ordinary villages and villages in which women and children appeared. Koryakovsky outpost is becoming one of the centers of salt production in Siberia. In 1838, it was transformed into the village of Koryakovskaya. In 1861, the village received the status of "a contingent city with the name thereof Pavlodar, in honor of the newborn Grand Duke Pavel Alexandrovich." A little later, the city becomes the district center of the Semipalatinsk region. a master plan for the development of the city is being developed, according to which the former Koryakovskaya stanitsa remains as the Cossack part of the city, and new construction is mainly expected in the lower middle class.

New cities also appear on the territory of Northern Kazakhstan. So, Petropavlovsk was founded in 1752 as a military fortress of the Novo-Ishim defensive line of the Russian state in southern Siberia. The fortress had the shape of a regular hexagon with an area of about 2 hectares. In its corners at equal distance bastions were located, interconnected by steeples. The total length of the fortress fence was more than 1.3 km. The bastions housed guns, inside the fortress there were barracks, stables, officer houses,

a garrison church, a powder cellar and other premises. Like other fortified points in Siberia, the fortress of St. Peter and Paul strengthened militarily: the garrison increased, wooden walls and bastions were replaced by earthen. The barracks were rebuilt, an “ambassador's house” was built to receive representatives of Kokand.

In 1772, at the fortress there were already two suburbs: the upland part and the foothills (Fig. 3.1). The merchant class grew, as the fortress became a large political and economic center of Priishimye. Trade routes from Russia and Central Asia converged here. In 1849, a fire broke out that destroyed 450 houses. After this, a new building began according to the plan approved by the king. The author of the plan was the architect Chernenko, who did not take into account the features of soils and topography, and Podgorye more than once drowned in spring floods. The resettlement of peasants from European Russia and the construction of the Siberian Railway contributed to the development of the city.

For a long time, the hallmark of the city remained a low level of improvement, lack of sewage, cluttered streets, unsanitary conditions of bazaars and slaughterhouses, which contributed to the spread of disease. The city had one hospital with 10 beds. By 1900, there were 13 educational institutions in the city, including one five-year school, one female gymnasium, two parish schools, one parish school, two village schools, and six Tatar schools. The largest enterprise in the city was a cannery, built in 1915, which employed 100 people.

The city of Kostanay was founded in 1879. At the beginning of the twentieth century. the city was a major trading center and was one of the important links in the route connecting Asia and Russia. As a result, Kostanay was a big fair. The main buildings were two-story wooden houses. The streets had no paving and were covered with sand, so there was dust in the air. Kostanay becomes one of the educational centers of the region:

already in 1884 I. Altynsarin opened a two-year school. By the beginning of the twentieth century. the main buildings in the city were wooden houses (1673), but capital stone buildings were also erected (73). In 1913, the railway connecting Kostanay with the Urals was built, which affected both the population and the industrial development of the region as a whole.

Among the new cities of Western Kazakhstan, the most significant is the Ak-Tobe fortress, founded in 1868. The city is located on the left bank of the Ilek River (left tributary of the Urals) in the central part of the Ural Plateau, which is a plain. The fortress was built on two hills ("barbets"). Guard sites, a guardhouse, an armory were built. Later cellars for storing food and ammunition appeared. It is noteworthy that for the construction of houses used adobe, improvised natural material. Residential buildings consisted of adobe huts with earthen floors. From 1878, the first immigrants began to arrive - peasants of the Ryazan, Voronezh and Tambov, Astrakhan provinces, who settled in the suburbs, later called by the townspeople “Otorvanovka”. On May 29, 1891, the military fortification of Ak-Tobe was officially named the city and renamed Aktyubinsk. Subsequently, he became part of the Turgai region.

On the territory of Southern Kazakhstan, where the urban planning culture has a thousand-year history, new fortifications and cities appear. A case in point is the appearance of the fort Ak-Mosque (Kyzyl-Orda), founded by the Kokandans in 1820. This name - Ak-Mosque ("the white mosque") - the fort was preserved until the capture of Russian troops in 1852 and from 1922 to 1925. C In 1862, the fort received the name Fort Perovsky, with the acquisition of the status of the city began to be called Perovsk. Since 1867, the county town of Perovsk, Syrdarya region, has become the center of the county. Elementary schools were opened, a brick factory, windmills, workshops, shops began to work. In 1925, the city was renamed Kzyl-Orda, the capital of the Kazakh Autonomous Republic within

the RSFSR was transferred here from Orenburg, and in 1929 it was transferred to Alma-Ata.

In 1867, the Verny fortification (founded in 1854) was renamed the city of Verny and became the administrative center of the Semirechensk region. By the end of the 70s, it is already a significant city and consists of the following parts: fortress, Big and Small villages, Tatar settlement and the new city (Fig. 49). The territory of the fortress, located on the left bank of the Malaya Almatinka river, was surrounded by an adobe wall in the shape of an irregular polygon. Inside the fortress wall were residential buildings for officers, barracks for soldiers, a small wooden church, guardhouses and storage rooms.

The uniqueness of the architectural situation that developed in Kazakhstan in the 19th century lies in the incredible stylistic diversity of the structures being erected. Along with the buildings traditional for Central Asia, buildings are being erected in the architecture of which almost all European styles of the time are interpreted: historicism (neoclassicism, neo-Gothic, neo-Russian and pseudo-eastern styles, romanticism), "brick style", eclecticism, modernism.

Neoclassical motifs are popular in the architecture of public and especially office buildings. One of the striking examples is the building of the economic department of the Cossack army in Uralsk (1869, architect I. Kondrakhin). The elongated construction volume of the symmetrical enfilade layout in the center is marked by a protruding entrance, decorated with a powerful columned portico. 8 columns of a stylized Doric order support a developed entablature. The majestic construction gives a two-tier solution. The front plane of the developed basement is finished with a large rustication. The combination of the deaf (basement) and the through (portico) planes through the contrast of masses, volumes and textures creates an interesting black-and-white and plastic game (Fig. 3.3).

Even more consistently the neoclassical style is traced in the architecture of the Commercial Bank in Uralsk (1896, architect A. Bunkin) on Turkestan Square. The main facade of a rectangular building has a classic three-part modeling both vertically (central (along the axis of symmetry) and lateral risalits), and horizontally (two levels and a developed parapet). The center of the whole composition is held by a large window opening of the central risalit, decorated with a triangular pediment on columns with Corinthian capitals (Fig. 3.4). Rectangular window openings separating their shoulder blades, corner pilasters, horizontal traction, parapet attics - all these techniques create a rich architecture in plastic. In 1905, figures of two lions were installed in a niche of the central entrance, and sculptures of two Cossacks were installed above the entrance: one with a gun and the other with fishing accessories (thin. N.G. Kalentiev). In Soviet times, the figures of the Cossacks were replaced by sculptures of a worker and a peasant woman, who were later also removed.

Another building of Uralsk has a rich history - the Ataman House (1825, architect M. Dilmedino). The house became the residence of punishable chieftains of the Ural Cossack army until 1917. The street passing nearby was named Atamanskaya (now Komissarovskaya). Atamans received honored guests of the city in this house. The future emperors of Russia stayed in it: Alexander II (1837), Nicholas II (1891), as well as A.S. Pushkin, V.A. Zhukovsky, V.I.Dal, L.N. Tolstoy and many others. The building demonstrates neoclassical architecture, being associated with the style of the Italian "palazzo". So, the central part of the main facade is highlighted by a protruding monumental risalit, where the open terrace of the second level is dominated, decorated with an increased triangular pediment and a large semicircular stained glass window. The smooth surfaces of the upper part of the building are set off by the first-level surfaces finished with decorative rustication, which once again emphasizes the solemnity of the front part (Fig. 3.5).

As a reaction to the dominance of the techniques of classical architecture, the so-called “brick style” arises, the main form-forming element of which becomes curly brickwork, which remains on the facades naked, not plastered. The facades of buildings solved in this style are distinguished by their plasticity and fine modeling of details (the building of the regional police in Kostanay (1912), the building of the Zemstvo council in Uralsk (1882), the Main Post Office in Atyrau, the library named after N.V. Gogol (the end of the XIX century.) in the city of Semipalatinsk, Alekseevskoe (1907) and the Vladimir School (1880) in the city of Pavlodar and others).

One interesting example of a brick-built building is the People’s House in Ust-Kamenogorsk (1902). His architecture reflected a fascination with historical styles, in particular, the techniques of Romanesque and Gothic architecture. So, the main facade has a three-part structure divided vertically and horizontally. The first level, occupied by the entrance, is the explicit reminiscence of the portals of the Gothic churches with circular ends, with the lateral entrance apertures given the shape of a deep perspective arch. The second level was decided in the traditions of medieval European architecture in combination with the achievements of the Art Nouveau style: the central part of the facade is decorated in the form of a large stained-glass window with a semicircular outline, flanked in the upper part by decorative Lucarnas. The side parts are occupied by double semicircular arched openings repeated on the side wings of the building (Fig. 3.6).

The search for expressive means leads to the appearance of eclecticism, in the arsenal of which there are techniques of all stylistic directions of the 19th century. There are many examples of architectural eclecticism, among the most successful ones being the Russian-Kazakh school in Uralsk, the Udarnik movie theater in Petropavlovsk, the railway

workers culture house in Kazalinsk, etc. The architecture of the cultural center in Kazalinsk, as well as the above buildings, was solved in a romantic context. The facade of the building follows the classical three-part modeling with compositional emphasis on the central risalit. The axis of symmetry is emphasized by two high towers (above the lobby and the stage box), crowned with elongated box vaults.

Techniques of eclecticism, one of the leading trends in the architecture of the XIX century. demonstrates the building of the Russian-Kazakh school (1880) on Bolshaya Sadovaya Street (now part of the avenue). In addition to crafts, literacy was also taught here. The elegant detailing used in the facade decoration of this two-story building gives it, for the most part, a classic interpretation, lightness and rich plasticity. The latter was achieved due to the fine modeling of vertical articulations and horizontal rods dividing the complexly profiled window openings of the circular and lancet (on the central block of the facade) outlines. A plaque of the "eastern" style is given to the building by precisely various small-scale decorative details that set off the main articulations. The "fairy-tale" nature of the architecture is supported by the decorative details that make up the cornice of the building - lancet arched niche and bulbous domes (Fig. 3.7).

The romantic style of eclecticism architecture was also reflected in the House of Officer Assembly and the Trading House of the merchant I. Gabduvaliev in Verny (architect A. Zenkov). At the same time, in the first building (now the Museum of Musical Instruments, Fig. 3.8), the image of the Russian wooden tower is combined with the techniques of a symmetrical composition in the spirit of the classics. In the Trading House (now the Kzyltan store, Fig. 3.9), these same tricks are presented in a romantic way (box-like vault of the lobby).

Of exceptional interest are buildings in the new Art Nouveau style, fundamentally different from classics and eclecticism. Art Nouveau

proclaims a dynamic combination of volumes, the use of smooth lines and huge light openings as the main formative techniques, the use of forms of medieval architecture (Gothic, Romanesque). The new architectural solution was applied at the Oktyabr cinema in Ust-Kamenogorsk, at the trading house in Petropavlovsk, at the Romanovsk school in Petropavlovsk, at the Skin and Venereal Dispensary in Kostanay, at the residential building of the merchant Yangurazov in Petropavlovsk, in the mansion in Kostanay, etc.

In the house of the merchant Yangurazov (late XIX century), the calm planes of the facades are enlivened by lateral risalits with large horseshoe-shaped openings in the center (Fig. 3.10). The architecture of the Romanov school in Petropavlovsk (1919, architect S. Gavrilchikov) gravitates to “pure modernity” with a characteristic combination of large glazed planes and a smooth curly outline of the decorative parapet (Fig. 3.11). The dynamics of the forms and the originality of the details reaches a high voltage in the facades of the house of the merchant Kiyatkin in Kostanay (early 20th century, Fig. 3.12).

Illustrative examples of the architecture of residential complexes built on the estates of the Kazakh aristocracy, which reflected both traditional techniques and new trends in European and Russian architecture. One of the illustrative examples is the Syrymbet estate - the family of the Valikhanovs, located on the territory of the modern village of Syrymbet, Ayyrtau district of the North Kazakhstan region. Chokan Valikhanov spent his childhood and youth in this estate, he came here on vacation from the Omsk cadet corps, lived in 1862-1864. The estate played an important role in the dissemination of educational ideas and culture in the Kazakh steppe, was one of the cultural centers of the region. To date, the estate has not been preserved. In 1977, the Kazrestoration association conducted a topographic survey of the land, foundations of buildings were revealed, and

data on Syrymbet's estate were collected. A pencil drawing of Chokan Valikhanov is preserved, which shows the estate: a residential building with three wings and a mosque built in 1814, a madrasah, a mill and other outbuildings built before 1835. The structure of the complex is close to a Russian noble estate of the XIX century. (Fig. 3.13) So, the buildings are organically included in the surrounding landscape, in which the forest land and the reservoir play a role. There is a clear division into residential and economic zones; one can also distinguish a cult or public zone occupied by a mosque and madrasah, built in the style of the Volga architecture.

3.2. Architecture of Kazakhstan in 1920-1930

Features of architecture' development in the Soviet period. Formation of National school. First architects of Kazakhstan and their works. T.K. Basenov, M. M. Mendikulov's creativity. Town planning, development of the old cities and addition of the new ones. Constructivism in architecture of Kazakhstan. The simplified Classics in architecture of Kazakhstan. History of addition of the public center of the capital. Master plans of development of Alma-Ata.

In the Soviet period, urban planning practices were widely deployed, associated with the development of industrial and agricultural production, including in regions with unfavorable natural conditions. Creation of the city of Shevchenko (now Aktau - Kazakhstan's only port of the Caspian Sea) is unique in the oil-rich area with a lack of fresh water, the only city, which is fully supplied by artificially desalinated seawater. It managed to create a favorable and comfortable environment by taking into account the wind load and insolation building residential areas, a large percentage of greenery. The great interest is the experience of creating the Borough of oil

industry workers in Atyrau - arid region with high insolation, which were first used local building materials - reed plates, as well as traditional methods - vaulted ceilings, shaded terrace-iwan, catching the wind, closed courtyards with through passages, creating ventilation. Cities in areas with strong wind load, frequent dust storms, provided the green belts around them on the outside, as well as artificial water reservoirs and extensive park areas designed to improve the microclimate.

The 1920s is one of the most interesting periods in the history of Soviet architecture and art, which was just beginning to search for its own paths; the architects in these years had a great influence on constructivism with its emphasized functionality. The principles of constructivism were developed in the west by Le Corbusier, who worked for some time in the USSR. Constructivism sought to solve new problems due to new needs.

An example of constructivism architecture is the former Government House of the Kazakh Autonomous Soviet Socialist Republic (architect M. Ginzburg with the participation of I. Milinis, 1928-1931, Fig. 117), which represents the work of one of the leaders of Soviet constructivism - Moses Ginzburg. The building embodied the ideas of Soviet architecture of the 1920s: combining solid planes with large glazed surfaces, a combination of volumes of different composition.

In the late 1920s, the process of gradual transition of nomads to a settled lifestyle continued. Old and new cities are rapidly developing, their improvement is improving. One of the most important factors was the development of infrastructure. Thus, the construction of the Turkestan-Siberian Railway (1929-1932) had a significant impact on the economy and culture of the republic, its completion served as a reason for the intensification of the development of Alma-Ata.

The first project of planning and reconstruction of Alma-Ata (1936) was developed in the architectural and planning workshop of the People's Commissariat of the RSFSR (architect A. Repkin, I. Gurevich). The aim of the project was to turn a large village into a well-maintained capital. The planning structure was based on the historically developed rectangular-quarterly system.

The broadly thought out and already begun to be implemented master plan for the reconstruction of the capital of Kazakhstan at the beginning of World War II had to be reviewed. Industrial enterprises, educational institutions and research institutions were evacuated here. The western region was developing intensively.

3.3 Architecture of Kazakhstan in 1940-1950

Architecture of post-war decade. Problems of formation of National style. Large public constructions: variations of Classical architecture and use of motives of national architecture. Building on the prospectus of Abay and Komsomolskaya St. in Alma-Ata. Architecture of educational institutions (Academy of Sciences, Higher education institutions). Housing construction: development of multy-storied constructions. Author's projects of housing. Public constructions and industrial architecture.

Alma-Ata, being the capital of the Kazakh SSR, became the center of the formation of a national architecture and architecture school. There are introduced the most advanced architecture ideas of Constructivism, as reflected in the development of the administrative center of the capital - the Government House, the House of Communications (1934) architectureed by the pioneer of a new style - M. Ginsburg; university complex projected by G. Gegello. In 1930- 1950s after the revival of neo-classical methods, the

first attempts are made to rethink the place and implementation of national practices in major public facilities - Opera and Ballet Theatre named after Abay (1941), the building of the Academy of Sciences (1953), a residential building of Scientists (1954). National ornamental elements are introduced, mainly in the decoration of the classic elements - capitals of columns (with Soviet symbols) of horizontal rods, architraves, archivolts. Often used the motif of arches - in window frames, doors and niches. Color schedule – in terms of classical palette of pastel shades, highlighting the main elements of white. This standardization and unification in the architecture of housing, decided to urgent economic problems, leading to the problem of the lack of artistic component and dull-looking image in Kazakhstan cities. However, the outlines of progressive trends in urban planning, for example in the development of residential areas, provided by education facilities and services.

A unique outcome of the decision of artistic and aesthetic parties and the beginning of a new stage in the architecture of public buildings is the Opera and Ballet Theater named after Abay with an auditorium with 1200 seats. The building was rebuilt in 1941. instead of a burned-out theater (architect N. Prostakov, with the participation of V. Bychkov, P. Polivanov, T. Basenov). The architecture of the theater was developed in the style of Russian classicism with the inclusion of elements of the Kazakh ornament in the composition of the facade.

The theater building represents the first experience in processing the motives of the national style in architecture, which was reflected in the appearance of the original order, used both in the exterior and interior of the building. A clear and simple construction plan is dictated by a clear functional planning solution: through the checkout hall, the visitor enters the lobby, which is connected to the auditorium by the ends located in the ends of the side foyer and the stairs leading to the second floor.

The building is set on a stylobate, which forms an extensive site; There is a fountain in front of the facade of the theater, and squares with trees, flower beds and fountains are organized on both sides. The facade is a portico advanced forward, divided into three levels. The first level is the entrance part, which plays the role of the basement of the building, lined with slabs of gray granite, treated with large rustication.

The central part of the building - the largest, second level - is distinguished by a deep loggia, which opens onto the facade with four powerful columns. The third level is a kind of entablature, crowned with an openwork parapet. The upper two levels are plastered and painted. In the decorative decoration, ornamental motifs of national architecture are actively used.

After the war, further searches of the national style are actively carried out, public buildings begin to be built using the motives of oriental architecture. A significant construction of this kind in Kazakhstan was the building of the Academy of Sciences of the Kazakh SSR (architect A. Shchusev with the participation of N. Prostakov, 1948-1953). The building has a three-axis composition with a central forward portal of the main unit, which is flanked by its bodies connected to the side risalits, where independent entrances are organized.

The main entrance is indicated by the deep niche of the lancet arch, in the center of it there is an opening of the entrance, the ribbon frame of which contains a stylized folk ornament. The stylization of the motives of the “eastern” architecture is read quite clearly: the organization of the central block in the form of a portal wall, behind which the dome is hidden, symbolizes the peshtak - the traditional solution to the entrance of religious buildings in Central Asia.

The framing of the entrance door consists of several ornamental ribbons, the thickness and scale of which are organized in such a way that there

appears a motive for a promising portal, popular in traditional memorial-religious architecture. The side planes of the portal flanking the lancet niche are advanced forward, which symbolizes the vertical position of the portal towers. The upper plane of the portal is stylized as a ribbon of arched openings - a ravak, who here received an interesting spatial solution in the form of a balcony fenced with columns to the full height.

On the other hand, a clear symmetry and a three-axis solution of the plans and facades of the building, with the emphasis on the central block; statement of all volume on stylobate; metric arrangement on the side cases of windows of strict rectangular shape, their separation by flat pilasters; the use of the original order is the methods of classical architecture, which gave solemn monumentality to the construction. The architecture of the building of the Academy of Sciences of the Kazakh SSR becomes the next step towards the syncretization of forms of classic and Central Asian architecture, as well as the motives of Kazakh applied art.

The largest administrative and public building of the republic of the post-war decade is the building of the Government House of the Kazakh SSR, the project of which began to be developed back in 1933, but with the start of World War II it was not launched. The construction of the Government House began in 1951 on a new project arch. B. Rubanenko and G. Simonov. In a huge building (108.6 thousand m3) were placed the Central Committee of the Communist Party of Kazakhstan, the Council of Ministers and the Supreme Council of the Republic.

The layout of the building provides for a clear functional zoning: each of the government agencies has its own building, which are united by a round-shaped conference room located on the main axis. In 1972 the building was expanded due to the extension to the main body of two lateral wings rectangular in plan.

The architecture of the Government House is monumental and solemn. The staging on a high platform, its enormous size, the rectangular outline of a symmetrical plan, the use of a stylized order together with the use of folk architecture motifs, a coloristic solution limited by two colors are the main characteristics of this building, in which again attempts are made to search for new national forms in combination with the classic tradition.

The scale of the five-story building is set by a gigantic warrant of an eight-columned portico, which organizes the main facade overlooking the square. A deep spatial portico is cut by columns with faceted trunks and stylized capitals, which use the motif of the ionic order and Soviet symbols. The whole building is painted in light gray (walls - terrazite plaster, the lower part of the building is polished granite and “under the rock”), but white marble is used in the lining of the columns of the south and north portico. The monumentality and representativeness of the style of the new Government House best reflect the architecture of the first post-war decade, the main features of which are visible in many public buildings of these years. In the 1940s, large public buildings were built in the republic, in which the search for the imagery of national architecture was continued.

Development of virgin lands, development of new large deposits of minerals and fuel and energy resources; the development on this basis of new branches of the economy and the commissioning of industrial enterprises - all this contributed to the development of architecture and urban planning.

3.4 Architecture of Kazakhstan in 1960-1970

Architecture of Alma-Ata. Anti-Seismic and experimental construction. Problems of town planning, landscape architecture. Lenin Ave. in Alma-Ata. Architecture of unique buildings (Kazakhstan hotel, Palace of culture

after name Lenin, the high-mountain skating rink "Medeo", Circus, Officers' Club, etc. in Alma-Ata). New public center of the capital. New Square design in Alma-Ata. New cities of the Western Kazakhstan. Formation and development of the city of Shevchenko.

The 1960s are marked a qualitatively new level of architecture, due to the development of new variants of the composition as part of modernism and understanding of the regional (national) features. Housing development of Lenin (Dostyk) avenue in Alma-Ata (1969) - an example of Kazakhstan's first integrated architecture and construction in the reconstructed area (applied later in the development of Astana, Uralsk, Semipalatinsk, Pavlodar, Zhambyl centers)

New architectural forms created by industrial methods required the typification and unification of structures and elements, as well as the development of standard designs. Typification primarily concerned mass construction: residential buildings, child care facilities, cultural facilities, education and health care.

Since the end of the 50s. construction of sports facilities such as the Central Stadium (1958), the Sports Palace (1966), the Medeo ice stadium near Almaty (1972) developed.

One of the most interesting examples of this type of structure is the Complex of the Central Republican Stadium (architect Kapanov A.K., Kossov A.Ya., engineer Konstantinov G.V.). The complex consists of a large sports arena, a training sports field, an athletics arena, a sports palace, an indoor and outdoor swimming pool, an indoor wrestling hall and weightlifting. The complex is located taking into account the terrain, the slope of which is noted from south to north. The large sports arena with a football field is designed for 30 thousand seats. Rationally used the space

under the stands, which housed a hotel with 200 seats, locker rooms for athletes, rooms for doctors, judges and coaches and much more. The shape of the building of swimming pools at the stadium (1964) was dictated by the use of metal arches of a parabolic shape.

Sports Palace (architect V. Katsev, O. Naumova, V. Tolmachev, I. Tsitrin, engineer M. Kashirsky, S. Matveev, M. Plokhotnikov, Z. Volkova) with stands for 5 thousand. residents. If necessary, a stall for 2 thousand spectators could be created in the central part of the hall in the palace, which made it possible to carry out cultural and entertainment events.

An example of harmonious inclusion in the natural and cultural context is the Medeo ice stadium near Almaty (architect V. Katsev. A. Kainarbaev, I. Kosogova, designer S. Matveev, M. Plohotnikov, Sh. Chelidze, engineer E. Lichtenstein , V. Vdovichenko). The stadium has become a symbol of the city, an international cultural youth center, has received worldwide fame. Located at the level of 1700 m above sea level, the alpine skating rink is successfully inscribed in the mountainous terrain.

The unique multilayer structure of the ice cover of the ice rink with a thickness of 2.3 m, where 170 km of freon pipes are located. Powerful refrigeration units can hold ice for 8 months a year. The team of authors of the building was awarded the USSR State Prize in 1973.

A qualitative change in the architecture of cinemas is demonstrated by the Arman double-screen cinema (architect A. Korzhempo, I. Slonov, engineer V. Harvardt, 1968) - an example of the use of monumental art, taking into account the natural and climatic features - a winter garden and small forms. For spectator seats, the terrain was used, the slope of which coincided with the necessary slope of the hall.

A significant achievement in the development of theater architecture is the Russian Drama Theater. M. Lermontov for 846 seats (architect V.

Davydenko, G. Gorlyshkov, N. Bylinkin, etc.), located at the intersection of Ablai Khan and Abay Avenues: an auditorium with good visibility of the stage from all points of the hall is convenient.

An example of construction, in the architecture of which the receptions of national architecture are most successfully reflected, is the Wedding Palace (architect M. Mendikulov, A. Leppik, 1971). The cylindrical volume of the palace (with a diameter of 34 m) has a continuous glazing, completely removed behind the sun screen. Its delicate drawing, with all its simplicity, gives the building elegance, lightness and solemnity and, in addition, evokes associations with folk ornament. The theme of the circle also gives rise to a multi-meaning associative series: ring - life path - completeness - infinity; the cylindrical skeleton of a yurta kerege - the base of the dome - a bypass gallery of the sanctuary, etc. (Fig. 3.46)

The largest of the cultural and educational facilities and original in its artistic design is the Palace of the Republic (the former V.I. Lenin Palace, 1970), located on Abai Square (architect N. Ripinsky, L. Ukhobotov, V. Alla, A. Sokolov, V. Kim, engineer B. Delov, V. Kukushkin, V. Sushentsev). The center of the entire building is a large auditorium with 3000 seats. Foyer in 3 levels: at the level of the auditorium (walking area), lower and intermediate. The hall is solved in a single volume without balconies. Layered aluminum sheets of white color with numerous lighting fixtures form the ceiling of the hall.

The building's original structural system is as follows: a covering of 10 thousand m2 is supported by eight pylons, and the entire frame of the building is separated from them, thereby achieving high seismic resistance of the complex as a whole. The architecture of the Palace is very expressive. The volume delivered to the platform closes the prospect of Abay Avenue, revealing to the adjacent area with the roof visor protruding forward.

The unusual shape of the roof with a strongly protruding visor and the original processing in the form of "scales" of a golden hue from anodized aluminum of pyramidal shape, combined with finishes from white Ural marble, Mangyshlak shell rock and green Balkhash granite gave the building a unique look. For the development of the palace project, a group of authors was awarded the USSR State Prize in 1972 (Fig. 3.47).

A special place among the spectacular buildings is occupied by the building of the State Circus in Almaty (1972, architect V. Katsev, I. Slonov, engineer S. Matveev, M. Plokhotnikov). The composition is based on a circle - a spatially plastic metaphor that has semantic layers: a circle reveals a utilitarian purpose, i.e. the function of the building is the place of the circus performance; the circle is the image of the people's home (yurt), emphasizing the nomadic way of life inherent in circus performers (Fig. 3.48).

Acceptance of rhythmic contraction due to the cylindrical, slightly expanded upward shape of the main volume of the building, skillful scaling (metric arrangement of openings at the middle level of the building in combination with the small scale of the sun gratings) gives extraordinary dynamics to the volumetric-spatial form of the structure. Also symbolic is the complex cone-shaped form of the building ceiling, trimmed with “scales” of white sheet steel. This is another symbol of a moving, dynamic existence inherent in both circus performers (one layer of the image) and nomads (another layer of the image).

The building of the District House of Officers in Almaty is unique (architect Y. Ratushny, T. Eraliev, O. Balykbaev, architect I. Razin, 1978). The complex consists of a theater group with a hall for 500 seats, a circle group with a cinema lecture hall, a cinema hall with 40 seats, a cafe, a dance and rehearsal hall, and an administrative and economic group. The structure of the complex includes the House of Officer Assembly, built in 1907 by A.P.

Zenkov. The architectural and artistic unity of the old and the new is achieved by means of contrast (Fig. 3.49).

3.5 Architecture of Kazakhstan in 1980

Anti-Seismic and experimental construction. Problems of town planning, landscape architecture. Lenin Ave. building in Alma-Ata. Architecture of unique buildings (Kazakh Drama theater after name M. Auezov, the Palace of school students, the medical and improving Arasan complex, a hardware and studio complex in Alma-Ata). New Square building in Alma-Ata. Formation of new national architecture (Sh. Valikhanov's museum in the Altyn-Emel settlement).

1970-1980s the heyday of the national school, which developed a peculiar language to reinterpret the Nomadic culture idea. Palace of Culture named after Lenin (1970) - one of the finest examples of creative interpretation of tradition. Ensemble was created in the kos type in way of Central Asian urban development in which the horizontal of the Palace compositionally balanced in cubic volume of the cinema "Arman" (1968) on the south and the vertical of the hotel "Kazakhstan" (1978) to the north. The ensemble is supported by Abai sculpture, composition linking the palace with the prospect of Abai avenue, which it closes. The use of local building materials - Mangystau shell-rock, Balkhash granite, marble specified natural object colors. Lightweight anodized plates made up the complex shape of the curved roof canopy.

Architecture in high-altitude ski rink Medeu in Almaty (1972) and Circus (1972), the Kazakh Drama Theatre (1982) has become an interesting experiment. The modern interpretation of the dome sounded innovative at construction such buildings like the Palace of Schoolchildren (1985) and recreation complex Arasan (1983), where the authors have made a new

sound of the traditional portal, and successfully found a plastic facade decoration interpreted laconic expressiveness of Kazakh mazars. One of the expressive elements of traditional decor - muqarnas - becomes the leading motive in the architecture of Television complex (1986).

In the first half of the 80s, cultural and entertainment facilities were replenished with two significant works of architecture: the Kazakh Drama Theater. M. Auezov and the Republican Palace of Pioneers. The spatial structure of the theater (architect O. Baimurzaev, A. Kainarbaev, M. Zhaksylykov, 1982) was decided on the basis of the classical functional scheme: an auditorium with 1000 seats is located between the spacious two-light foyer and the stage part. The authors of the project were awarded the 1982 State Prize of the Kazakh SSR. (Fig. 3.50).

The artistic image of the Palace of Pioneers (architect V. Kim, A. Zuev, T. Abildaev) is unusual, the plastic features of which - the addition of windows in the attic wall make the Palace look cheerful and cozy. The advantage of the Palace of Pioneers is openness, the dynamic shape of the building contributes to its connection with space. Creativity and creation permeate the building of the palace - from the general composition to the details of decoration (Fig. 3.51).

The spatial multifaceted composition of the Arasan health-improving complex (architect V. Khvan, M. Ospanov, designers V. Chechelov, K. Tulebaev, 1983) organically reflects the complex functional tasks that characterize this object. The geometry of the circle and square is read both in the composition of the plan and on the facade of the building. Invariability, stability finds expression in a square and a cube, and earth mutations symbolize a circle. The combination of these symbols becomes a semantic rhyme in relation to the functional purpose of the complex - bathing (purification), gaining new vitality and internal readiness for the transition to eternal life (Fig. 3.52).

Hotel "Kazakhstan" - the first building of high floors (more than 25 floors) in the republic. The vertical rhythm of the bay windows, giving lightness and delicacy, ends with an elegant golden “crown”. The image of the hotel is associated with a giant wheat ear (architect Y. Ratushny, L. Ukhobotov, A. Anchugov, V. Kapitanov, engineer A. Deev, N. Matviyets). The structural structure of the building, consisting of a monolithic reinforced concrete frame with transverse diaphragms, was originally and boldly solved (Fig. 3.53).

The building of the Telecentre (R. Seydalin, M. Pavlov, 1980) is a glass cube slightly altered in proportions. The main motif of the main portico and cornice is a stylized stalactite made in plaster. The building has a vivid imagery, combining natural forms and the logic of geometric construction. Residential 16-storey buildings (M. Pavlov, Yu. Tumanyan, R Khalfin, 1980) on Novaya Square with the buildings of design institutes adjacent to them repeat exactly each other in their configuration, they are symmetrical in plan. The long side pavilions of design institutes with accents of two high-rise buildings are emphasized that hold the entire system of the New Square - the most beautiful ensemble in Almaty (Fig. 3.54).

One of the buildings, the architecture of which reflects a fundamentally new approach to the development of national architecture, is the museum of C. Valikhanov in the village. Altyn-Emel, Taldykurgan region (architect B. Ibraev, R. Seydalin, S. Rustembekov, 1985). The conciseness and dynamism of clear lines with the absolute modernity of architectural forms elusively create an associative series leading to the most ancient archetypes. In the architecture of the museum, a successful rethinking of the forms of folk architecture has been achieved (Fig. 3.55).

A different, more familiar interpretation of national forms was used in the building of the Central State Historical Museum of the Kazakh SSR (architect Yu. Ratushny, Z. Mustafina, B. Rzagaliev, 1985). The

recognizable features of Muslim architecture (symmetrical composition, lancet arches, domes, arched portal, corner guldast towers) correspond to the purpose of the building as a repository of cultural heritage. The monumentality and solemnity of the building is emphasized by the low arrow of the vault of the large central dome, powerful faceted towers, a combination of the deaf planes of the facade and narrow, stepwise recessed window openings, a large rustication of the shell from the limestone slabs. This is perhaps the most successful example of the stylization of "national" forms in the architecture of the period in question (Fig. 3.56).

Since the 1950s, housing construction has been carried out mainly on standard projects. Priority development of large-panel and monolithic housing construction, high-rise buildings, large residential complexes is planned. In the construction of residential buildings with high storeys, frame-panel structures and monolithic housing construction were used. The first such houses in Almaty include: the Samal residential complex (Fig. 3.57), two 16-story single-section residential buildings on New Square, and others (Fig. 3.58).

The frame-panel structural system allows the use of lower floors to accommodate public institutions for various purposes, but construction is associated with a significant expense of expensive metal, the complexity of nodal joints, etc. In connection with the requirements to increase the earthquake resistance of structures, a variety of structural systems have been developed, such as a precast reinforced concrete frame with transverse half frames and a frame-link structure with a monolithic stiffness core. This system made it possible to significantly diversify the layout and architectural appearance of high-rise buildings and has become one of the priorities in the construction of large-story buildings.

Kulpytas

Omar I Tur mausoleum

Mosque in Semipalatinsk city

Mosque in Semipalatinsk city

Petropavlovsk. House of merchant Zaitsev

Trade house of the merchant I.Gabdulvaliev

Uralsk. Bank

Petropavlovsk. Trade house of Ovchinnikov

National Academy of Science

Theater of Opera and Ballet named after Abay

Palace of Republic

“Kazakhstan” Hotel

PART 4. ARCHITECTURE OF INDEPENDENT PERIOD

4.1 Architecture of Kazakhstan of the Independence period

Reconstruction as leading direction of development of architecture in 1990s. Priority of high-rise inhabited construction (a header-off design with a metal framework) and emergence of inhabited residential districts of small number of storeys (cottage towns and townhouses) - since the end of the 1990s. Expansion of architectural typology in civil architecture: multipurpose complexes, business centers, banks, entertaining centers, etc. New facing materials and the new coloristic decision in architecture of public buildings. The project of the satellite towns of Almaty on the route Almaty-Kapshagay G4-city. Current state of the project. Updating of master plans of the cities of Kazakhstan. Environmental problems, transport, improvement.

1990s the time of gaining independence, marked by the creative development of a new plastic language, caused by the search for identity until the copy of historical monuments. It is a time of changes in the architecture of housing that meets the requirements of the area and increase overall comfort. Interior architecture, landscape are developing rapidly, there is tremendous interest in international experience.

1.1. Main tendencies of development of town planning

Events of the beginning of the ninetieth years of the XX century from which main thing - declaration of independence of the republic - caused the entry of Kazakhstan in a new historical stage of development. Changed after this

the social and economic situation determined nature of the direction of searches in town-planning and architectural and construction areas.

Rough activities were resumed in Almaty, the active construction covered also perspective western regions which economic growth is connected with the oil-extracting industry – in Aktau (the former Shevchenko) and Atyrau (the former Guryev). Improvement of an ecological situation, prospects of development of certain districts of the city, infrastructure, i.e. enhancement of a natural and ecological and transport framework becomes the priority directions of town-planning development in the republic.

The population of the large cities of Kazakhstan constantly grows that leads to the corresponding amendments in master plans. So, according to the concept of town-planning development of Almaty (1998, authors Baymagambetov S. K., Nysanbayev Sh. E., Mametov A. A., Hairov S.A., Zalogina T. B., Ezau L. V., Kulkin V. P., Abdrashitova A.M., Boyko B. D., Terekhina M. A., Istomina L. Yu., Murzina N. P.) the city gains territorial development in the western, east and northern directions. In each of perspective areas creation of the public center is supposed, thus, the politsentrichnost of the city center is provided. The most important town-planning nodes will be noted by multifunctional complexes of consumer services. Besides, improvement and complex forming of the water and planted trees and shrubs places, the tourist centers, further expansion of the communications connecting Almaty with suburbs and their involvement in general city agglomeration, etc. is planned. Project offers cover development of the city for the period till 2020 and include the forecast of growth of population and territorial development of the city till 2030.

In development of master plans new approaches and methods with use of the state town-planning inventory (STPI) and computer technologies are applied. The electronic (digital) card, geoinformation technology became

the uniting base both for the general plan, and for maintaining GGK, creating new conditions of implementation of town-planning monitoring of implementation of the general plan. The general plan from the directive document became the regulating document determining town-planning zoning and regulations of use of the territory.

As authors of the project define, a main goal the master plan is carrying out a complex of the town-planning actions directed to creation of ecologically favorable, safe and socially convenient vital environment. The main architectural and town-planning idea of the project – to keep and develop the image of the city of Almaty as "garden city". A basis of formation of perspective planning structure of the city is natural and ecological and transport frameworks. The natural and ecological framework is formed by the mountain rivers flowing in the meridional direction through the city, parks, squares, boulevards and other planted trees and shrubs territories which are city "lungs".

As the main source of pollution of the atmosphere of the city is transport (about 80% of all emissions), the master plan offers improvement of a street road network, input of the subway, increase in a share of the electric transport, improvement of the rolling stock, development of network of gas stations and car service. The master plan offers formation of three main transport rings: Big Almaty ring (BAKAD) Highway; The Average transport ring (from the Talgarsky path to Mailing St., Bekmakhanov St., Burundayskoye Highway, the punched section of the road along river of Terenkar, the river Burundai, Sain Ave., Al-Farabi Ave., the Southeast half ring); The Small transport ring (Rayymbek Ave., Mukanov St., Bayzakov St., new section of the road on a platform to the west of the territory KazNU, the Southeast half ring).

The city gains territorial development along the main planning axes: in the western direction - Rayymbek Ave. - the highways Almaty-Bishkek, in east -

Kuldzha and Talgar paths, in northern – Kapchagay Highway. The main directions of complex forming of the residential environment provide finishing average security with housing on average of 22 sq.m on 1 person, with increase in all housing stock of the city up to 27,5 million m 2. The construction will be performed as in the free territories, so due to demolition of shabby housing. The general plan differentiates the territories under multi-storey and low-rise building of cottage type. According to the increased requirements, the share of individual housing construction considerably increases.

Under public and business building zones in the central part of the city, along trunk mains of the city - the ave. of Abay, Tolebi St., Zhandosov St., Rayymbek Ave. are reserved. In the southern part of the city, to the west of ruble Esentay (Vesnovk) creation of a large sports complex for holding the Olympic Games is planned. The general plan plans reorganization of the production territories for the purpose of improvement of an ecological situation and more effective use of the territories.

Sustainable development of the city assumes also complex development of engineering infrastructure and improvement of the territory. In the territories of new town-planning development the main and parting engineering networks will be laid, head constructions are constructed; ATETs-1 will be reconstructed, ATETs - 2 will extend; around the city there will be a ring of LEP-220 of kV that will provide steady power supply of the city. Installation of individual measuring devices on each apartment and the house allows to use more rationally natural resources, the existing water intaking constructions provide perspective requirements.

The main project solutions of the New Master plan of the city, will be disaggregated on the subsequent blueprint stages and a program implementation of a first-priority construction.

One of interesting experiments of the last decade is the G4 project of City – four cities satellites tied to the master plan of development of Almaty. It shall be the logistic center of republican scale. The idea of the concept is developed on world analogs of creation of the new cities (as Dubai, Las Vegas). A basis of the project is the main highway passing on all territory. On the road separate thematic zones, depending on a landscape, a geographical and logistic arrangement "are strung". According to the project, G4 of City shall consist of separate parts of city structure:

- "Golden City" - the center of culture and rest.

- "City gate" – the large business center, the center of the international exchanges, contacts and trade.

- "City Grouing" – the research and production center, also main transport hub between China and Russia.

- "Greene City" - the city where the casino center and a what zone, and also the territory for active recreation are combined.

The total amount of building was assumed over 3,4 thousand hectares and occupies the territory from Almaty to Kapchagay which shall become the gambling center of the region in the nearest future. Such arrangement is chosen according to infrastructure: here the highway and the railroad connecting China and Russia on which there are flows of international trade lie; the Almaty highway – Kapchagay more than 60 km long connects the city and the territory of a water storage basin which has all opportunities for the organization of active recreation; after construction by 2020 of the ring highway BAKAD, this site will become a new axis of development, connected both with Kapchagayem, and with the northern districts of Almaty.

In recent years works on perspective town-planning development of the cities of Kazakhstan which cornerstone mutually perpendicular basis of a

town-planning and ecological framework is thanks to what both preserving unique natural and landscape complexes, and addition of multipurpose public transport hubs in case of expansion of networks of communications is reached (Uralsk, Aktobe, Aktau) are actively conducted.

So, the perspective master plan of development of the city till 2035 (Grado LLP) according to which significant increase in a housing stock is provided was developed for Aktau in 2003-2009. From all planned new housing in Aktau nearly 90% is necessary on multi-storey building, 5% - for sredneetazhny and 5% - on individual (Munaylinsky district). According to the housing programme planned by the master plan, the construction of new housing in the free territories is combined with reconstructive actions according to which housebreaking in two residential districts is supposed.

As a priority of urban policy the scenario of intensive development oriented to high-quality improvement of a condition of the urban environment is chosen. As development of the city will happen mainly in the existing borders, as the perspective directions for transformation is determined northeast along the coast. The water protection zone will be kept. The master plan it is offered to create along the seashore special zones for rest of citizens. Besides, along the embankment the construction of several water life-saving stations is planned.

The major problem in all large cities of the country is transport and communications. For this purpose the general plan provided as expansion of network of the existing city streets and roads, and a construction of new modern outcomes both in one, and in two levels. It is besides high-quality it will be possible to improve transport servicing of residents of Aktau only due to complex development of all components of its infrastructure: systems of a public transport, street road net, artificial transport constructions, well-planned embankment, car parks, etc.

The project of perspective development of the city of Aktau – Aktau City (fig. 4.2) became one of perspective investment projects of the last years.

Despite economic problems, the project isn't considered refrigerated, the construction of the first residential district expected 200 000 sq.m of housing including social objects is provided: schools, hospitals, kindergartens. Apartments in this residential district will be economy class, i.e. houses aren't higher than four-five floors with odno-dvukh-and three-room apartments. The area of apartments will be respectively on average 40, 60 and 80 square meters. The cost of one square meter won't exceed thousands of US dollars. And apartments are planned to be sold in final finishing. By estimation about 10 000 people will live in the first residential district. Aktau City is an also important social project, to a construction only the domestic companies will be attracted. It is remarkable that application of a local construction material – a stone shell rock is planned in view of what fields will be involved in Zhetybaye, by Kuryke, Shetpe.

4.2 Stylistic searches

Emergence of new type of the customers (who replaced the state, individual in the past), expansion of the market of construction materials (for the account, generally import), relative "creative freedom" of the designer promoted a big variety in search of architectural and art interpretation of priorities of the come political and economic situation.

The most characteristic acceptance in architecture of this period it is possible to call stylization - both use of various historical styles, and their multiple mixture. Big distribution is gained by such acceptance of upgrade as reconstruction (the first floors of buildings, complete reconstruction of the existing constructions, former "unfinished constructions") thanks to which the image of the cities considerably changed.

Implementation of new construction materials changed shape of public constructions, having brought closer their architecture to buildings in style hi-tech, built in Europe in 70 - the 80th years of the 20th century. Application in facing of aluminum panels in a combination to double-glazed windows led to a plane modeling of facades of buildings with emphasis on a big form, general dynamic composition and unusual color scheme (trade Cities centers, Ramstor, "Mega-center" to Almaty, the Sports center in Astana, etc.).

So, the amount of the terminal of the airport entirely glazed (the arkh. K. Montakhayev, M. Zhaksylykov, S. Baymagambetov, B. Dautov, B. Molzhigit, D. Shibanova, S. Vitrishchak, And. Fables, 2001-2003) which facades are solved in a plane modeling, has a curved roof. The last gives to construction bright figurativeness of the flying bird or a kite, the association with a festive headdress of Kazakhs (fig. 4.3) is also probable. Plasticity laconic and, at the same time, a dynamic form of the building is emphasized with a plane modeling of facades and restraint of color scale. Domination of continuous amount of a big form of a roof is successfully counterbalanced by an end-to-end framework of the entrance ramp giving to construction plasticity and depth.

Dynamism of general composition and originality of a form – the main lines of the building of shopping center "Promenade" (the arkh. Sh. Yusupov, T. Abilda, V. Yaroshevsky, N. Popova, 2003). Successfully entered in the developed ensemble of Sports palace and Central stadium, the building in case of the considerable sizes doesn't look that due to crushing of ledged amounts, the perekytykh system of wavy roofs. The shape of the main facade is constructed on a combination of the correct and turned cones, the horizontal rasplastannost of amount is balanced by a vertical of a peaked cone of an antiaircraft lamp with the fountain located on the operated roof of the center (fig. 4.4).

Multifunctional complexes as, for example, the Nurly-tau center become town-planning dominants even more often (the arkh. T. Eraliyev, S. Baymagambetov, A. Tatygulov, 2004). The irregular multistage shape of a complex is surveyed throughout a big piece of Al-Farabi Avenue. Appearing in various foreshortenings caused by highway bends, construction appears to a look as differences and transitions of sides of smooth surfaces.

The bright figurative system though suffering from excessive verboseness and divisibility, nevertheless, can be explained with an object arrangement on the space opened, surveyed from different points. Consisting of four groups of buildings of different number of storeys (6-27), an object includes office rooms, exhibition, shopping, entertainment centers. Dynamic composition the raznourovnevykh of amounts in combination with smooth surfaces of facades of a complex create an image of the cold crystals sparkling against the background of mountains.

The southern part of Al-Farabi Avenue is created by a complex of office constructions - Financial center (the arkh. computer. Skidmore, Owings & Merrill, LLP) which construction is conducted still (fig. 4.6). Six stages of a construction of a complex are provided, in projects acceptances of modernist, dekonstruktivistsky architecture are applied generally. The largest ensemble of office buildings the glass structure as well as IFC of Nurly-tau, shade shine of the mountains framing the city.

4.3 Architecture of Astana

Architecture of Astana. Concept of town-planning development of the new capital. Main administrative centers, large housing complexes. Architecture of a right bank and left bank. New memorial complexes and problems of the National style development in architecture. Architecture of industrial centers of the country (Atyrau, Karaganda, etc.) in the new

millennium. Architecture of sports constructions of the capital. EXPO-2017.

Transfer of the capital to Astana in 1997 and an international competition to develop the concept of the master plan drew the attention of leading architectureers in the world (the winner - Kisho Kurokawa). The concept of a linear metabolic city was in tune as a way of nomadic culture and a symbol of the dynamic development of the new state. New forms are associated with ancient Turkic mythology (Baiterek observation tower, the State Archives in Astana), general Muslim cultural component (numerous mosques), architectural traditions of Karakhanids (mosque in Pavlodar). Reception House (1999) was used architectural forms, equally characteristic of European classics and traditional architecture: the symmetry of the main facade, the motive column galleries (Roman portico and iwan), hemispherical dome. One of the most noteworthy in terms of the new architecture language - the Presidential Cultural Center in Astana (2000) reinterprets centric cruciform composition volume, overlain by a blue dome.

4.3.1 Master plan of development of the capital

In 1997 the capital from Almaty was transferred in Akmola which in 1998 received the new name - Astana. This event gave rise to a unique experiment in the field of town planning and architecture of Kazakhstan according to which the regional center shall turn into the main town of the country with the corresponding architectural appearance. Here the large-scale construction is developed, reconstruction of the existing buildings is actively conducted.

In 1998 International contest on the sketch idea of the master plan of development of the new capital was held. The project of the world famous

Japanese architect Kisho Kurokawa was recognized as the most perspective. Astana is the general designer of the master plan the Kazakhstan project real estate development company "Ak-Orda" (the president – Montakhayev K. Zh.). According to the offered idea, development of the city is supposed on linearly - the parallel scheme along the river Esil with development of the left coast and reconstruction of "the old city" on the right coast. The main composite axis shall connect two transport hubs of the city – the railway station and the airport. Along an axis ensembles of the office buildings and housing estates connected by the planted trees and shrubs boulevards and parks (fig. 4.21) are located.

The administrative center of the city is made by three areas: The central square, to the West from it - Independence Square and on the highway conducting to the airport - Kruglaya Square "New Astana". All three areas unite the main highway – Vodno-zelyony Boulevard which is flanked by ensembles of housing, entertainment, business estates. As envisioned by designers, the image of the capital is characterized by a combination of high-rise dominants of inhabited and public constructions, green esplanades and boulevards to gardening and flood, architectural and historical complexes, small architectural forms and sculptures

The central square with the Government house and the House of parliament adjoins to the area where the ensemble with buildings of the Residence of the President, the House of the Ministries, the Senate and Mazhilis of parliament is located. The architecture of these constructions is dictated by the ideas of a representativeness, monumentalism that, however, hasn't prevented to give the areas character of harmonious ensemble.

The Independence Square in the center is noted by a viewing tower monument Astana-Bayterek (the idea – N. A. Nazarbayev, the arkh. A. Rustembekov, S. Bazarbayev, A. Ospanov). The South and North side of the

area are busy with buildings of Defense agency and Ministry of Foreign Affairs. Construction symbolizes a sacred "tree of life" in which krone egg of a bird of paradise (an ancient image of pervoyayets, origin of life) in the form of a glass sphere (diameter of 23 m) was placed. There, at top of a huge monument (its height constitutes 97 m), the observation deck (fig. 4.22) is placed.

Circle Square "New Astana" is organized by the office buildings placed on diameter and noted by verticals of offices of the KazTransOil and KazMunaiGas companies (fig. 4.23). Along the esplanade conducting to the area buildings of the Ministry of Transport and Communications, Defense agency, National library (fig. 4.24) are built. The axis of the highway brings to the Akorda palace, the new residence of the President who is a composite and semantic core of all ensemble. Behind it the pyramidal amount of the Palace of Peace and Reconciliation whose laconic shape even more emphasizes the importance of the palace is located.

Have most found reflection of the idea of independence, determination of national consciousness, memory of historical sources in architecture of public constructions, openness of the young state to the world community. These ideas have received the expression in accurate the geometrizovannykh forms of buildings (the cylinder, a paraboloid, a parallelepiped, a cube, a sphere, etc.), in a combination of high-rise verticals and the spread plastic volumes, in use of historical analogies (dome, tent, pyramidal overlappings). Monumentalism and a representativeness, dynamism and ability to development, national and international have received new sounding in public buildings.

The result of architectural reconstruction of buildings of the Government house and House of parliament appelirut to world analogs of a postmodernism. Glass parallelepipeds are put into the light facing which is cut through by evenly placed square apertures. Axes of symmetry of

constructions are emphasized with architectural reception of change of scale of a glazing. The color contrast applied here blue and white which repeats in buildings of Kazakhoil (1998), the House of the ministries, some houses and offices of a coastal zone is active.

The dome as one of key forms and images of national architecture is actively applied. So, in the former Residence of the President (the arkh. K. Montakhayev, V. Kim, Yu. Printsess, 1998) a dome fixes a composite axis of symmetry of the building which architecture is for the rest far from forms of national architecture. The plane modeling of side wings emphasizes plasticity of the central volume with a wide segment bay window. Some brutality of shape created by large-scale partitioning by pieces of the glazed planes is maleficiated by a smooth outline of a hemisphere of overlapping.

4.3.2 Architectural searches

In the House of receptions (arkh. M. Gorokhov, V. Minsky, And Petrova, etc., 1999) are interpreted the architectural forms, double on an image, equally characteristic of the European classics and traditional architecture: symmetry of the main facade, motive of columned gallery (the Roman portico and айван), a hemispherical dome (however, blue color, more associated with turquoise field Central Asia of brick domes, fig. 4,26).

The interpretation of dome construction in the building of the Presidential center of culture is unusual (the arkh. S. Zhanbulatov S., 2000). The composition of volumes constructed on a cross combination in the basis and the circle imposed on him is symbolical. Placement of the main facade on diagonal underlined with the portal has allowed to survey the building in a dynamic foreshortening. The developed step drum gets married a sphere-conical dome (diameter 19,5m, height 38,5m). Different scale of development of a drum of overlapping and wings of a cross is even more

emphasized with rough triangular bay windows from opaque glass of deep blue color.

In architecture of the new residence of the President – the palace A□ORDA (a computer. MABETEX of groups, arkh. M. Gualaqi, M. Molteni, K. Montakhayev, etc.) – have also found reflection motives of classical and national architecture. This reception becomes one of leaders in search of new "national" style in modern architecture of Kazakhstan. The variation on classicism became a basis of architectural language of the building: strictly symmetric planning and composition of facades, order system, a rustovka angular and the prostenochnykh of pilasters, the extended window openings, slozhnoprofilirovanny horizontal drafts, a characteristic parapet in the form of balustrades. Reserved color scale is presented by a combination white, blue and gold.

The entrance part of the palace is allocated with the bay window semi-cylinder with a portico of the simplified Doric warrant. The huge warrant is equal on height to four floors, the last floor comes to the end with the pro-thinned-out eaves of big carrying out. The central axis of composition on veritkal is finished by the large dome topped with the high spike with navershiy representing symbolics of national flag of the country. Blue color of the dome sphere, a national twiddle, the common coloristic decision of facades and interiors of the building appelirut to images of national architecture. All these receptions serve the idea of a representativeness and monumentalism, the idea of the stable, prospering state: the classical stylistics (in interiors the leading style - an empire style) representing and embodying the listed figurative characteristics haven't been casually chosen. The building at once became a symbol of the state that quite explainably his status, and a subject of discussions about further development of national style in modern architecture.

Other esthetics is provided in office buildings where the glazed surfaces are designed to emphasize an unusual form of construction. So, building of the Ministry of Finance (arkh. V. Laptev, V. Gladkikh, V. Falkov, D. Vulp, 1999) has the single curved amount consisting in a complex with raznoetazhny blocks. The bend of the building and the blue color prevailing in a glazing gave it an image of the fluttering flag (fig. 4.29).

The glazed cylinder of the building "Transport tower" (the arkh. A. Zuev, V. Chistyakov, 2003) plays a role of a high-rise dominant of the area "New Astana". The monolithic form ellipse in respect of 36-tietazhny construction is emphasized with a continuous glazing, however difference of the side front planes on 9 floors, underlined deaf step finishing of the lower levels, give to general composition of the building dynamism (fig. 4.30). The mirror planes shade the disaggregated study of facades of an administrative complex of the KazMunaiGas company (the arkh. A. Zuev, V. Nikolaev, G. Kornishin, 2003) in which composition raznoetazhny blocks are combined with an aktsentrirovaniye high-rise towers of the central case. The arc-shaped layout of an object creates borders of the area whose axis of symmetry is emphasized with the huge aperture of the central case blocked by a luchkovy arch with a kessonirovanny archivolt. Side wings arches of a complex emphasize the considerable height of the central amount whose aperture crossing point is flankirunut by the step towers topped with spikes.

Offices of the House of the ministries (arkh. Mataybekov Sh., 2007) also shows a dominant of a big form of the truncated cones having a continuous glazing of a golden shade (fig. 4.32). Symmetry of monolithic volumes and their arrangement in the form of the towers flanking the square in front of the residence A□ORDA does them by important composite elements of the main axis of a public part of the capital which give to spatial development of the main highway logical completeness.

The building of circus, with a capacity of 2 thousand people, deservedly causes associations with the UFO that gives to construction an ultramodern look (the arkh. T. Abilda, S. Hairov, A. Bitleuov, S. Nurbay, R. Isentayev). The basis of its structure is made by a spatial metal design in the form of a bowl with a diameter of 92,6 m. Diameter of the arena makes 13 m. Figurative associations are supported with the coloristic solution of construction which facades have a metal shade, the large scale of an object is emphasized by melkodetalizirovanny plasticity of the lower part of a facade (4.33).

This line of development is continued by the pyramidal volume of the Palace of Peace and Reconciliation (the arkh. N. Foster, 2007). This construction with difficult planning consisting of an elevated part in the form of a pyramid 62 m high with the square basis (with the party also 62 m) and the underground part including premises of opera theater in the form of rectangular volume 15 m high. The proportions extended down and an arrangement on a height give to construction monumentalism and grandness. The facade is trimmed by triangular plates of gray granite, only the top is revetted with stained glass on which pigeons against the background of the sky and a solar disk (designer B. Clark) are represented.

In an elevated part halls for holding meetings of the International religious congress, a chapel and offices of various faiths, recreational zones, university, the museum, showrooms are located. The internal space a construction is through penetrated by the atrium space forming the peculiar light column emphasizing both integrity of all structure of construction, and symbolizing the idea of a consent and unity of outlook of world religious faiths. A light atrium, passing through pyramid tops through an opening in a round table of an assembly hall, an atrium of the planted trees and shrubs lobby, becomes isolated in the pyramid basis the convex window which is a light lamp in a ceiling of opera theater.

Other memorable image is created in Hang Shatyry shopping mall (the arkh. N. Foster, 2010). The complex nearly 200 m high represents the single cone-shaped amount supported by a powerful design of the steel tripod. A tent covering – the small grid covered with a ETFE – the unique material passing light and protecting internal space from a heat and cold. The internal space of 100 thousand sq.m includes numerous objects among which there is an extensive city park, shops, movie theaters, cafe and concert venues. Besides, in the building the tropical water garden with ponds, the rivers, falls and numerous terraces was placed. On the highest point "Hang Shatyry" is located a platform with which opens a type on the capital from height of bird's flight.

New architectural acceptances and achievements of the construction industry of a vopolshchena in the Abu Dhabi Plaza complex (the arkh. N. Foster) where conditions for maintenance all the year round of single temperature are created. It is reached due to planning and processing methods: the highest buildings is from North side, protecting an object from wind loading, on the southern part solar panels which collect energy for water heating are placed. The structure of a complex included a 88-storey tower, hotels, the market, the station of the easy subway and the public square (fig. 4.36).

The special microclimate is created also in other object designed by foreign architects – the Central concert hall "Kazakhstan" (the arkh. Manfredi N., Nikoletti L., 2009). This construction of complex dynamic composition has bright figurativeness: the slozhnoperesechenny planes give rise to associations with a certain shelter, the revealing "flower in the desert" (according to authors) in which the powerful future potential of blossoming is pledged that as well as possible answers the purposes and prospects of the new capital. Monolithic designs hide in themselves shops, restaurants, showrooms, two movie theaters on 3500 places.

The building of National library has even more complex structure (the arkh. A.Campbell, J.Henlo, J.Cool, J.Bane, L.Sundin) which project is noted by the Grand Prix at the international architectural competition. In the construction having the Moebius band form i.e. a continuous curve, the idea of the continuity and infinity connected with functional purpose of construction as the same characteristics also process of knowledge (fig. 4.38) possesses is expressed.

Construction of the Palace of Independence (2008) which has occupied the area more than 18 thousand sq.m of (fig. 4.39) became an important event. The palace has the three-level decision where on the first the objects intended for holding large-scale actions settle down. The second floor is allocated for the museums and galleries, on the third the museum of history Astana is placed. The simple and brutal form of an object in the form of a parallelepiped with inclined walls very accurately designates the fortress and firmness of a subject to which the palace is devoted. Softens monumentalism of construction the frame design applied on construction facades which is obviously sending to her prototype a little - a lattice to a kerega. The volume of the House of creativity of "Shabyt" (a building of "Bazis-A") standing nearby makes uniform ensemble with the palace, supporting him by the corresponding scale, clearness of a geometrical form in the form of obliquely the truncated cone and the common coloristic decision of the ensemble which has developed here.

During preparation for the VII winter Asian games in Astana new sports constructions of which technology and architecture greatest demands were made are built. So, the Covered football stadium with a capacity of 30 ths places, has the transformed roof design that allows to regulate function of the building in winter and summertime. The construction of the main skating stadium, hotel, the fitness center and administrative office are a part of the Covered skating stadium. The building of the Republican bicycle

track (fig. 4.41) is considered unique. The bicycle track, volleyball, basketball, soccer fields, several pools and the fitness centers are a part of a complex. Capacity of an object constitutes 8 000 seats. The form of a construction of the streamline shape cast by function of a construction is original. There is an opportunity to place a temporary skating rink under a bicycle track roof that will allow to expand the program of games in Astana, and to considerably save the budgetary funds necessary for a construction of the new ice arena.

4.3.3 Development of residential architecture

Along with public constructions various options of inhabited construction – tower, multisection high-rise dominants, complexes of average and small number of storeys are actively developed. In Astana since the beginning of the 2000th large-scale reconstruction of standard houses of mass construction is undertaken. Reconstruction has been carried out by a superstructure of the mansard floor, strengthening of bearing walls, a new architectural concept of facades, updating of system of water supply and the sewerage.

It is possible to allocate several groups of housing built in Astana according to planning solution: these are section, gallery (skyscrapers), blocked (low housing). The volume and spatial decision and stylistic features are rather various as now in architecture of Kazakhstan there is a process of addition of certain principles of addition of a regionalism, as has found reflection in the raznostil dominating in modern architecture of the republic. Besides, the new typological option of a multipurpose housing estate which play the major composite and functional role in structure of the city has gained distribution in the capital.

So, the area with the residence of the President АҚОРДА is flanked by high-rise housing. Two lower floors of a multisection housing estate of "Nursaya"

(computer. Elitstroy, 2006), intended for office and trade rooms, have a continuous glazing. Blocks of residential floors of different number of storeys (8, 10, 12, 13 floors), are located terraces. Static character of a monolithic form is diluted with a combination of the planes of pale gray facing of facades and ledges of the dark blue glazed compartments of communication blocks, bay windows and stained-glass windows. Small plasticity considerably recovers architecture of a huge complex: the pro-thinned-out horizontal drafts, friezes and eaves, inserts of columned porticoes of the simplified order create a quiet rhythm of composition of facades.

The option of the tower apartment house is provided by the 15-tietazhny Altyn-Orda complex (a computer. "Astana real estate", 2006) where three high-rise dominants are united by the block of the rooms of consumer services placed on the first floors. The acting and sinking down parts of facades of lower floors create an interesting light-and-shade game which is underlined by the coloristic decision on the basis of shades white, blue, yellow. The curved form of a roof of the lower block together with the arc-shaped glazing of face facades of three residential towers of a complex cause associations with a sail or a wave.

Variations on national architecture have found reflection in a housing estate on the embankment of Ishim. The step silhouette created decreasing down glazed (saturated blue) and deaf (light gray) the cubic planes, gets married the volume close in a form to the arch of a lancet outline which dynamism is emphasized with a high spike. Quite modern look of a complex, nevertheless, definitely causes a number of the associative images cast by domes of medieval mausoleums or peaked headdresses.

Style receptions hi-tech are presented in the Grandee of Ala Tau complex (a building Kuat, 2007). Completely glazed parallelepipeds of four towers skyscrapers (20, 28, 38, 43 floors) are recovered only by wavy deepenings

of yellow color. Objects of a housing estate "Polar lights" are close to this esthetics (a computer. "Basis"), which bent verticals recover brutal an image of a complex,

Interpretation of the representative inhabited and public constructions representing some kind of architectural monument is the housing estate "Triumph of Astana" (a building of "Bazis-A", 2003). The symmetric composition accruing to the central high-rise tower (38 floors) of volumes of different number of storeys (15, 18, 25 floors) originally beats architecture of high-rise buildings of Moscow the 1940-1950kh of. The dynamic step silhouette the raznourovnevykh of volumes created around the central tower dominant will be emphasized with the ledge going on the center for all height of the building with window openings (reminding a lattice), tops of parapets and a high spike in the center of composition. All this together with a skillful large-scale combination of small and large plasticity and restraint of color scale makes an impression of solemnity and monumentalism.

The unique covered Green Village complex is developed (the arch. V. Gladkikh, 2008) where under a huge dome the whole inhabited residential district with full-fledged infrastructure will be placed. Designers have planned creation in it the comfortable temperature conditions supported all the year round. The project is designed for 10 thousand inhabitants. Its total area makes 10 hectares. In such big territory of only 160 apartments. For each of them about, at least, two parking spaces are provided. Other space is occupied by green avenues.

Construction in the capital and other large cities of Kazakhstan has big prospects in development of the architectural language adequate to the dynamic processes happening now in republic life. A unique experiment on development of the new capital, as well as high speed of construction in recent time in all territory of Kazakhstan, has given the exclusive chance for

the professional growth of architects. At this stage it is expedient to expect regeneration of number of constructions in qualitative architecture for what there are, in our opinion, all prerequisites.

Nur-Sultan. Residence of the President

Concert Hall “Kazakhstan”

Business Center “Moscow”

EXPO center “Kazakhstan”

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