

Innovations in Kazakhstan's Architecture



Oksana Priemets, Konstantin Samoilov, Inna Zayats, Zhanar Kenessarina, Ellina Yssembayeva

Abstract: *The evolution of Kazakhstan's architecture illustrates the constant synthesis of internal and external forms. It creates its original form. This form continues its development under the influence of the factors of tradition and innovations. This interesting process occurred in the 20th century. Trends of the beginning of the 21st century look peculiar.*

Index Terms: *architectural composition, architecture evolution, continuity, innovation, style, synthesis.*

I. INTRODUCTION

The geographical position of Kazakhstan in the central part of Eurasia determines the originality of development of its architecture. Historical architectural forms are the result of multicultural synthesis. This process accelerated significantly in the 20th century. The result was an original phenomenon. The study of certain issues of this phenomenon is a subject of a large number of publications that appeared during the century. The understanding of this phenomenon as a whole started at the beginning of this century. The best examples are the published works of such authors as Tasmagambetov [1], Baitenov [2], Samoilov [3], Tuyakbaeva [4], Galimzhanova and Glaudinova [5], Omuraliev and Volichenko [6], Glaudinov [7], Malinovskaya [8], Isabayev [9], Bronovitskaya et al. [10], Priemets and Samoilov [11]. The extensive material is fixed in the codes of monuments in different regions of the country [12]-[20]. The features of this phenomenon are revealed as follows.

II. PROPOSED METHODOLOGY

A. Architecture of the 19th – early 20th century

This period includes two stages, covering the entire 19th century and the first two decades of the 20th century.

In the 19th century, spherical-conical and ellipsoid dome structures with a simple type of masonry and rectangular apertures become widespread. A number of buildings initially had or later, due to deformations, obtained a geometrically not entirely accurate volume configuration. There are structures with one or several domes on high cubic or prismatic bases, as well as truncated fold-pyramidal buildings. In their plastic, sometimes there are one- or

two-part crowning cornices. The curved masonry of burned and mud bricks in portal-dome structures is widespread. Various types of masonry patterns, blind and frieze arcades, niches of various shapes in diverse layouts, jagged crowning, figured brackets, and expanded cornices are used. There are few examples of inclusion of terracotta tiles and glazed bricks in belt courses and frames. Arched crowning of niches and apertures have lancet, box, archery, semi-circular and parabolic shapes. Subregional specifics include domed and domeless structures of treated blocks of shell limestone. Surfaces of the buildings have painted and embossed-painted solid or element-by-element polychrome finishing. Walls and dome drums are made smoothly with the emphasis on jointing, or dissected by pilaster strips, pilasters, curtain rods, frame and base belt courses. Niches and apertures have horizontal, semi-circular, or "flat-faced" crowning. Spherical-conical and helmet-shaped domes, with or without an accented or unaccented drum, are used. Shaped spires and frame elements and details differ in a variety of forms. Neoclassical architectural-artistic forms differ by examples of the use of different-type wall rustics and first-floor feigned columns, expanded plates with accentuated locks, ordinary or curly pediments with arc, polygonal, semicircular and triangular pediments and broken pediments, balustrades, figurine-shaped moldings with denticles and scrolled consoles, medallions, and cartouches. Columns and pilasters of large and small Doric and Tuscan orders, smooth and balustrade-thumbnail parapets, friezes with triglyphs and modillions, smooth and two-three-fascia architraves, panels, figurine-shaped archivols, and trims are used. As for the "brick-style" architectural-artistic forms, rusticated pilaster-strips and platbands, webbed lintels, shaped brackets and denticles of various sizes, shaped masonry of several types made of ordinary and shaped bricks, two- and three-piece conventional and arcaded friezes, complex-curved gables are actively used. The "Russian style" is reflected in the elements made of ordinary front and shaped bricks, plastering, stucco, and carved wooden details. There are also keel-shaped archivols, gables, semi-gables, tongs, corbel arches, profiled columns and pilasters, arcaded friezes, complex-configurable and simple panels, longline brackets and denticles, expanded platbands and frames, made in open figured masonry or in the structure of plastered walls. Carved details of multitiered cornices, platbands, shutters, sprockets, columns, and fences, solid or fragmentary, plain or curved cords are combined with both timbered and plastered wall surfaces. There are usual two-or four-pitched roofs, hipped roofs, and bulbous domes. The features of the "eastern" style appeared in the lancet and horseshoe-shaped arched openings and niches, the two-tone and usual rustic pattern of the walls, pilasters, platbands and archivols, ribbed and smooth

Manuscript published on 30 August 2019.

*Correspondence Author(s)

Oksana Priemets, International Education Corporation, Almaty, Kazakhstan.

Konstantin Samoilov, Satbayev University, Almaty, Kazakhstan.

Inna Zayats, International Education Corporation, Almaty, Kazakhstan.

Zhanar Kenessarina, International Education Corporation, Almaty, Kazakhstan.

Ellina Yssembayeva, International Education Corporation, Almaty, Kazakhstan.

© The Authors. Published by Blue Eyes Intelligence Engineering and Sciences Publication (BEIESP). This is an [open access](https://creativecommons.org/licenses/by-nc-nd/4.0/) article under the CC-BY-NC-ND license <http://creativecommons.org/licenses/by-nc-nd/4.0/>.

lancet and elongated bulbous domes. High conic and tent-shaped tops, small-detailed curtain rods, window sills, and pilasters are used. In a few examples, there are carved details of multicolored painted tiered brackets, which form single and multitiered roofs with elevated corners in rectangular and polygonal buildings. These elements are used in combination with pointed domes, openings, and niches, as well as finely detailed relief-painted portals with curly parapet denticles.

The plasticity inherent in modernity manifested itself in three-centered, horseshoe-shaped and multifoil arches of large openings and niches, rusticate pilaster-strips, pilasters and archivolt, bands of blind arcades, multitiered cornices, complex-shaped forceps with vases and obelisks, cartouches, expanded door trims, and shaped casings. The examples of "strict" modern are single.

The architectural-artistic forms of **the beginning of the 20th century** together form the following series.

A Kazakh yurt in architectural and artistic forms, formed by the middle of the 19th century, is used throughout this period.

Wooden carved multitiered cornices, dripstones, door trims, pediments, shutters, columns, and fences, close to the "Russian style", are used in combination with ordinary and figured wall linings. Two- and four-pitched roofs are usually used, in individual cases – tent and keeled ones. The same carved elements are also used in combination with plastered smooth or rusticate walls, on which there are pilasters and pilaster-strips, differently shaped panels and molds, two- and three-part belt courses, expanded door trims and framing. Pitched roofs of various types have a smooth and scaly coating; the domes are of usual or ribbed, pointed or bulbous shapes. Figured spires on fine-detailed curbstones in the corners or on crests are widespread.

Molded parts in combination with plastered walls include simple and figured panels, figurine-shaped and simple door trims with dripstones, triangular and keel-like gables. Pilasters and pilaster-strips have multilayered divisions; their front surface has flutes. Window sills are combined with two- or three-part belt courses.

A number of open-type structures of ordinary and raw bricks have belt courses of figured masonry; sometimes, cornices and framing of openings are accentuated. Buildings of the same type made of large shell limestone blocks are isolated at a subregional level. The active plasticity formed by figurine-shaped smooth and fluted pilasters, belt courses, frames, simple and figured friezes is combined with color-relief ornaments that partially or completely cover these elements. In rare cases, there are curly tops of pilasters and friezes. The peculiarity of the plasticity of a number of buildings based on associations has led to the appearance of the definitions of "baroque" or "modern" in the name of buildings.

Raw-brick buildings with domes of conditionally conical, spherical-conical and semi-ellipsoid forms with rare exceptions do not have accentuated cornices, pilaster-strips and frames on the base squares. Apertures and niches are made rectangular or arched. Domed structures of ordinary bricks have a hemispherical or arched crowning without drums. Wall plasticity is solved based on the combination of pilasters, pilaster-strips, niches, simple and multipart eaves

with denticles. Angle towers have round or rectangular-sectioned forms. There are curly tongs and multipart dome lamps of tower crowning. Apertures and niches have the form of a lancet or shallow arches with the smooth or rusticate composition of archivolt. In some cases, domes are crowned with figured spires. Figured masonry is made from both ordinary and shaped bricks in combination with belt courses of patterned terracotta slabs.

The subregional phenomenon is represented by architectural-artistic forms of buildings made of large shell limestone blocks, crowned with helmet-shaped domes with figured spires. Their surfaces are dissected by simple belt courses and pilaster-strips, framing rectangular, square or narrow pointed niches. Color-relief ornaments fully or partially cover the surfaces of walls and domes. In rare cases, there are shaped friezes.

The architectural-artistic forms inherent in the "brick style" are represented by figured masonry made of ordinary facing and shaped bricks, simple and complex rustics of pilaster-strips, pilasters, door trims and archivolt, multitiered eaves with stepped brackets and arcaded friezes, ordinary or shaped panels. Apertures and multisteped niches have the form of shallow or semi-circular arches. There are complex-shaped gables and parapet pillars with figured tops. Flat-arched vaults and tent-shaped crowning are occasionally used.

Architectural-artistic forms, characteristic of neoclassicism, are represented by pilasters and three-quarter columns of variously interpreted Doric, Tuscan, and Ionic ordinary and full orders. There are expanded door trims and dripstones with gables of various shapes, multitiered interfloor and crowning cornices, semi-circular windows, high rustics of walls and pilaster-strips, as well as curved gables. In rare cases, there are flat-arched vaults and semi-elliptical domes with spires of various shapes and sizes.

The modern style is represented by complex-shaped cornices and gables, three-centered archways and niches, shaped panels on pilasters and window sills, simple and complex rustics of pilaster-strips, expanded scroll consoles, diverse hair-shaped crowning of parapets pillars, gables and flat-arched vaults. Sometimes, figured masonry of face bricks can be found.

B. The architecture of the first half of the 20th century

The period is chronologically structured into three stages: the 1920s – the first half of the 1930s, the second half of the 1930s – the beginning of the 1940s, the mid-1940s – the mid-1950s.

The combination of architectural-artistic forms of **the 1920s – the first half of the 1930s** has the following components.

Yurts are actively used as residential and farm buildings in the traditional demountable version (in the areas of pastoral nomadism) and in a stationary form (in the suburbs and towns at industrial enterprises). The architectural-artistic forms of a yurt do not undergo any significant changes regarding the previous period.

Yurt-shaped houses are used as experimental, temporary constructions for settled nomads; these houses either repeat the architectural-artistic forms of a traditional winter fixed dwelling "shoshala" or interpret the cylindrical-conical space of a yurt in combination with the plasticity that corresponds to other structural materials. A log dwelling house remains widespread among urban and rural buildings. For the most part, this is a wattle and daub hut with wooden carved details of cornices and door trims in an often simplified Neo-Russian style. The elements of the Kazakh ornament can sometimes be found among the motifs of patterns on shutters, the vast majority of which are simple geometric figures. The use of classical orders in rare examples is peculiar, when frieze ornamentation is used in combination with Doric columns. The pattern configuration is similar to the "muiz" motif in the Kazakh ornament. Rare buildings in the "brick style" are distinguished by the degree of richness of details of figured masonry made of ordinary and shaped brick. Separate structures in East Kazakhstan develop the theme of architectural-artistic forms of Buddhist memorial architecture. Some mausoleums in the west of the country become increasingly rich in finely detailed stone carving and polychrome paintings. The search for the "national style" is directed towards the use of architectural-artistic solutions, which are characterized by detailed quoting of famous medieval buildings from different parts of the country or generally interpret their forms at the level of "Eastern motifs".

Vivid examples marked the emergence of constructivism. At the beginning of the period, these were mostly single-story parallelepiped-shaped buildings with smooth walls, relatively large windows, deepened galleries and pergolas on partially exploited roofs. By the end of the period, these were already buildings with complexly linked volumes of various heights, through or half-open ground-floor galleries, tape or solid stained glass glazing, "long" windows, semi-cylindrical avant-corps. The most common architectural-artistic forms of the period are the elements of the "simplified classics" (pilaster-strips, pilasters, molds, frames, two- and three-part cornices, etc.). They are used both in combination with dynamic volume-spatial compositions of different-floor blocks and in the presence of single-height, sometimes symmetrically arranged volumes. The architectural-artistic forms of **the second half of the 1930s – early 1940s** are collectively represented by the following components.

Single examples of constructivism demonstrate the combination of parallelepiped single-height volumes with smooth walls and "long" or two-tier windows. Elements of the "simplified classics" are used both in isolation and in various combinations with each other. In this case, there are groups that differ in the dominance of a certain set of elements: floor-by-floor molds, belt courses and cornices that have a one-, two- or three-part solution and usually accentuate the top of the basement, window sills of the first and second floors, the overlap of the first floor. Pilaster-strips and pylons, often with a two- or three-step solution, occupy all or only the middle of the partition and combine both floors in two-story buildings or the two upper ones in three-story buildings, where pilaster-strips increase in volume, turning into a kind of pylons. Pilaster-strips sometimes have flutes; wall surfaces are smooth or low-rusticated. Simple or

dissected belt courses, cornices, and frames are used. Large-rusticated angular pilaster-strips are often used without and rarely in combination with smooth ordinary pilaster-strips, which are sometimes paired with rusticated ones; rustic is usually high, there are socle, floor, and architrave belt courses, an expanded cornice, simple or rusticated door trims. Pilasters and columns with plate caps and capless columns are used in combination with each other or separately. Smooth square or flute columns usually form four- or five-column porticos; the same, but false porticos (usually in avant-corps) are created by pilasters. The entablature either ends under the attic floor and has a wall gable or rises above the crowning cornice of the rest of the building. In the attic zone, single pilasters are transformed into paired ones. Window sill belt courses occupy the entire interpilaster space or form only a window sill. Some windows have frames with dripstones. Pilasters and columns with an expanded cap have a smooth or rusticated surface with a square section; sometimes, there are angular corbels or hollows. The small cap is usually cubic; it is marked with one- or two-part belt courses and is either a separate element or an entablature fastening. Pilasters can be through or cut by interfloor belt courses. Columns form porticos or are placed in portal niches. There are expanded crowning cornices, figurine-shaped framing, platbands, and belt courses; dripstones are found. Elements of various classical orders are applied separately and in a complex, in a "pure" or combined form. Separate parts (wooden, plastered or molded ones) are found in various combinations, where there are expanded complex shaped cornices on denticles or volute-shaped brackets, dripstones on complex brackets with or without gables, balcony balustrades, coffered vaults, expanded window sills, archivolt-shaped door trims and frames, simple basement and expanded interfloor belt courses, fine-rusticated walls and pilasters. Order columns and pilasters of a classic or simplified interpretation are divided into several groups, differing by type and interpretation of order. The rectangular pilasters of the Doric order interpretation have an expanded base and a capital with smooth, patterned or figured echinus. They are mainly found as through ones for two floors and less often as paired ones in a single-story variant in the form of a false portico on an expanded interfloor belt course, and a frieze in the portico area that is usually smooth in all variants is dissected by triglyphs and smooth metopes. Large rustication of angles, small rustication of the walls, wall window-siding balustrades, expanded platbands and window sills, simple dripstones and the ones with a triangular or rounded frontal are used. Simplified interpretations of the Doric order are also related to the use of smooth-bore semi-, three-quarter, and whole columns, either without caps or, much more often, with a one-, two-, three-part plate or disc caps, which sometimes represent a pilaster side of the smooth or two- or three-fascia architrave. Columns are arranged singly, in pairs with a common architrave or doubled. Expanded bases are based on pedestals, complex basement or interfloor belt courses.

Columns are sometimes combined with paired pilasters or pilaster-strips. Above the architrave, dissected or marked by the belt course, there is sometimes a smooth frieze. An expanded crowning cornice with triangular gables or high parapets in the portico area has denticles. Classical interpretations of the Doric and Tuscan orders are found with smooth-bore and, less commonly, rusticated or cannellure semi-, three-quarter or whole columns in arched, straight full or half false, small or deep porticos, as well as in portal niches and supports of coffered vaults. Columns are arranged singly or paired, have expanded bases, sometimes pedestals. The corners of two-story buildings and the walls of the first floors, above the expanded inter-story belt course of which there are columns of small or large orders, are coarsely or finely rusticated. Expanded cornices with denticles, simple or shaped brackets are completed in the area of porticoes with triangular gables or high parapets. The neck of the columns is located high or low, while the echinus is reduced and a narrow fluted line is put under it. The abacus is round or rectangular. Between pedestals and balcony pillars, as well as in the composition of expanded window sills there are balustrades, there are simple or figurine-shaped platbands, dripstones with triangular or straight gables, in rare cases – bas-reliefs on the frieze.

Simplified and classical interpretations of the Ionic order are found with smooth-bore rectangular pilasters and round semi- and whole columns, ordinary and four-sided caps, full or non-frieze entablatures. Columns in porticos are placed in pairs, in balconies – singly, pilasters and semi-columns are placed mostly singly in the middle of the pier. There is a combination with rusticated pilaster-strips and walls of the first floors, accentuated with an interfloor belt course. Window openings are mainly made without platbands with expanded window sills, dripstones with triangular gables. Balustrades are used in open and wall versions.

The Corinthian order in classical and simplified interpretations is found with smooth round semi-, three-quarter, and whole columns, square columns, smooth or fluted rectangular pilasters, which are mostly single in porticoes and piers. They are combined with triangular and broken pediments, as well as with arcades, straight lines, and unfixed entablatures. Expanded cornices in rare cases have simple or volute-shaped brackets. The windows are simple with well-expanded window sills, sometimes there are platbands. Dripstones are simple with triangular and less often with bow-shaped gables on volute-shaped brackets. The locks of arches and lintels are sometimes accented with a volute, and in the walls, there are medallions, rosettes, and palmettes.

The combination of orders in classical or simplified interpretation with paired or single columns, semi-columns and pilasters is found in single-level and floor-by-floor versions. In this case, in the lower floors, a large or small Corinthian order is used, as well as a Tuscan order, but quite rarely, in the upper ones – a large or small Ionic order; floor-by-floor belt courses, platbands, dripstones without gables, expanded window sills on volute-shaped or rectangular brackets, expanded cornices with denticles or volute-shaped brackets are used.

Orders with "fantasy" caps of columns and pilasters are characterized by the motives of brutal volutes and rollers,

single-row leaves, multilevel plates, profiled plates, etc. The shafts are smooth and fluted, usually rectangular or less often – octahedral; they are found in combination with arcades, portal niches. Simple and expanded entablatures, simple and figurine-shaped cornices with denticles or rare volute-shaped brackets, smooth and rusticated angular and ordinary pilaster-strips in single and two-tier versions, expanded and simple window sills, simple dripstones and the ones with semi-frontons, rosettes, and medallions in pillars and sometimes on the frieze are used.

The interpretation of "Oriental motifs" and inclusion of the national ornament is found both independently and in combination with each other. Among the motifs are mainly raised arches and domes. The ornament is included in wooden carved details of platbands, locks of arches and lintels, fantasy Corinthian caps or the ones transformed into ornamental-like, parapet teeth, balustrades, archivolt and platbands, frieze belt courses, rosettes, and cornices.

The mid-1940s – mid-1950s are characterized by the cumulative use of the following architectural-artistic forms.

Carved wooden elements are actively used in the edging of cornices, simple and expanded platbands, shutters, frames, roof and fencing grids, columns with figured caps and figured lining.

The individual elements of the "simplified classics" are used in various combinations with each other. Here one can find floor-by-floor molds, basement and under-eave belt courses, paired and single, flute and smooth pilaster-strips and pilasters with two- or three-part plate, as well as simplified pyramidal or roller caps, simple dripstones, with gables and semi-gables, expanded cornices with or without denticles, shaped brackets for balconies and cornices, small and large rustications of walls and corners.

Order solutions are used in classical or simplified interpretations. Doric and Tuscan orders have smooth-bore pilasters, semi-, three-quarter, wall and free-standing columns in a single or paired version with an expanded base. They have entasis or are performed by straight-stemmed and combined with a simple or expanded entablature. The frieze is made smooth, with sculptural inserts along the axes of columns or as a continuous sculptural belt course; the cornices are made with or without brackets. Windows are rectangular or arched with simple or expanded window sills. There are triangular gables and half-gables, and in rare cases – broken gables. Expanded dripstones are used with or without volute-shaped brackets. Walls have a smooth, finely or coarsely rusticated surface. Interpretations of the Ionic order with ordinary caps and smooth-bore pilasters, semi- and whole columns of a square and round cross-section are used in the form of large or small orders with an ordinary or non-frieze entablature. Windows are made mainly without platbands with expanded window sills. Arcades have accentuated archivolt and medallions in the walls. In the interpretation of the Corinthian order, there are smooth and fluted pilasters, semi-, three-quarter, and whole round and smooth square columns, which are single or paired. Porticos are used as ordinary or in the form of balconies.

They have triangular gables and simple or curved parapets, plain or unfixated entablatures. Expanded crowning cornices are usually made with shaped brackets or denticles. One- and two-story arcades with coffered archivolt are used; windows have a rectangular or arched shape. Simple and expanded window sills are used, trims are sometimes rusticated. Dripstones with simple and triangular gables sometimes have volute brackets. The rustics of walls are mainly only on the ground floor. Balustrades are used on balconies and expanded window sills.

The combination of interpreted orders is found in rare cases, when Tuscan and Corinthian or Ionic and Corinthian orders are located in the form of pilasters, semi- or whole columns at the same level or by tier. Expanded entablatures with cornices on curved brackets and denticles, arcades, large and small rustics of walls and corner pilaster-strips, trims with expanded window sills, balustrades of balconies and loggias, accented simple and arched lintels with distinguished top-stones, triangular pediments and high parapets are used.

C. The architecture of the second half of the 20th century

The two stages identified in this period cover the end of the 1950s – 1960s and the 1970s – 1980s.

The architecture of **the late 1950s – 1960s** has the following groups of architectural-artistic forms.

The use of individual simplified details of classical orders includes various combinations of semicircular arched openings and niches with expanded archivolt, pilasters, and semi-columns with plate or disk caps and bases, the presence of medallions, expanded portal frames and trims with dripstones and gables, as well as figured consoles. Figurine-shaped ordinary or multitiered interfloor and crowning cornices, solid or elementwise rustic patterns of various types are used. In rare examples, the elements are carved and wooden. Ornamented order elements with classical, fantasy and belt-course caps of columns and pilasters are used in ordinary, walk-through, attached or built-in porticoes, expanded portal frames. There are expanded interfloor belt courses and multilevel cornices with denticles and consoles, expanded archivolt of pointed or semi-circular arched niches and apertures, wall under-window and balcony-loggia arched-column fences. Ornamental cartouches are placed in tympana; they are also in panels and medallions. In rare cases, they are combined with mascarons. Monumental-decorative panels as an active element of architectural-artistic solutions of buildings are made in color and color-relief versions of ceramic tiles, mosaics, terracotta tiles, figure-facing masonry of multicolored brick, painted reliefs and single-plane drawings on the basis of various colors of the textured layer of wall panels. They are usually located on the corner, less often – on axial piers, high plinths and blind balcony fences. Large panels occupy blind or partially blind ends of buildings. High-relief ornamental inserts are used in the form of cartouches, filling medallions and panels, making details of rosettes, frames, belt courses, and cornices. There is a continuous filling of both individual and grouped wall panels, as well as the walls of adjacent loggias. Low-relief and multicolor ornamental inserts are used as modular patterns on

all or some panels of balcony fences and in the form of uniform covering of groups of wall panels.

Lattice fine-grained elements with an ornament-like pattern are used both in the form of separate floor inserts of solid or fragmentary fences of loggias and balconies, as well as in the form of large single-story tape or multistoried elements. They have one-, two-, and three-dimensional cells.

The active plasticity of facades implies both a large-modular textured surface solution, the presence of edges and belts of various sizes, penetrations or expansions of individual floors, and the use of separate or grouped balconies and loggias.

Accented two- or three-part pillar wall pilaster strips usually turn into a smooth architrave. The window sill sections are made both smooth and with medallions, cartouches and corrugations, as well as dissected by expanded window sills or short interfloor belts and cornices. Eaves are carried out usual or with parapets, in rare examples – with pediments and nippers. Sometimes there are pillar wall depths in combination with a simple framing of rows of windows. The active plasticity of facades implies a coarse-grained textured surface solution, the presence of edges and belt courses of various sizes, embedments or expansions of separate floors and the use of separate or grouped balconies and loggias. Accented partition two- or three-part pilaster-strips usually turn into a smooth architrave. The areas of window sills and linking blocks are made both smooth and with medallions, cartouches and corrugations, as well as dissected by expanded window sills or short inter-floor belt courses and cornices. Cornices can be ordinary or with parapets, in rare examples – with pediments and gables. Sometimes there are partition embedments in combination with a simple framing of window rows.

Lattice coarse-grained elements are pillar wall edges in combination with lattice above-window panels. The ribs are placed in front of window bands according to the position of the sash imposts. In rare cases, expanded edges and panels form groups of adjacent outside loggias.

Conventionally, facades of a single-plane solution are formed by a relatively uniform distribution of window openings in combination with smooth surfaces of walls or weakly accented jointing of panels and large blocks. Continuous stained glass windows occupying most of the facade are used. They are located in the same plane with the frieze or deepened. A complex volume-spatial solution involves the use of smooth or folded parabolic or semicircular arches, mushroom-shaped or cantilever cable-stayed sheds in combination with predominantly solid stained glass. In the architecture of **the 1970s – 1980s**, there are the following components of the combination of architectural-artistic forms. Rare examples of order solutions include classical interpretations with semi-, three-quarter and whole smooth-bore Corinthian and Ionic columns, as well as arcades and arched windows, expanded architraves with dripstones and archery gables, figurine-shaped cornices on the scroll brackets and interfloor belt courses, gallery and parapet balustrades.

The first-floor walls have high and low rustics. Columns with ornamented caps have an octahedral trunk and an expanded base; there are also gallery balustrades, figurine-shaped cornices on figured brackets, expanded interfloor belt courses and trims. Wide rectangular pilasters with ornamental caps have expanded bases, figurine-shaped cornices and platbands include ornamented belt courses, denticles or volute brackets; attachable balustrades have racks in the form of simplified Corinthian columns with lancet arcade. Simplified order interpretations include square columns with two-part plate caps, pilaster-strips, two- and three-part belt courses and cornices, as well as simple platbands and window sills; less prominent pilasters have high two-level caps and simple plate bases.

The common curly lining is made of both simple and shaped plates with a smooth or relief-patterned surface, creating a variety of rustic types, simple platbands, and frames, ribbed and folded frieze belt courses, pilaster-strips and pilasters. When cladding buildings of the mid-twentieth century, difficult-shaped cornices and caps remain open or simplified. Semicircular, shallow and lancet arches, as well as expanded framing archivolt, are widely used. Lancet arches in most cases are placed by floor, semicircular ones – in multistoried arcades. The openings behind the arches are usually rectangular. Fences of balconies and loggias are closed, lattice and combined. Single examples demonstrate undeveloped caps at the level of imposts or a patterned solution of arches of various depths, expanded capstones, and cantilever imposts. The emphasis on the roof is formed by a large overhang of cornices with a wide vertical, bent, broken or beveled frieze, which in the latter case forms the outer slope of the roof edge. Friezes have a smooth, rusticated, ribbed, folded, rippled, coarse or fine-stepped surface. Cornices have large overhangs mainly around the perimeter and less often – only on separate facades. Two- or three-part pilaster-strips, pylons, and ribs sometimes intersect the frieze, going into the parapet zone; they have a smooth or low-rusticated surface. The balconies have blind fencing, and large stained glass windows and other windows are sometimes closed with shaped large-element grating.

One or two upper floors are emphasized with the cantilever overhang of the entire volume and the frequent edges or figured grids placed in this zone. A combined solution is also often found. The emphasis is enhanced either by an encircling balcony with blind fencing on the lower floor, or by the deepening of the lower floor. There is also a stepped overhang of the floors in combination with or without ribs. In some cases, the surface of the overhanging floors is partially or completely weakened. Expanded pylons either end under the console or divide the overhanging volume to the cornice.

Large portal framing of the entire facade in most cases or less often – its individual parts –

are extensively used. At the same time, in the framed area there are ordinary windows and loggias, balconies, narrow pylons, ribbed lattices. A portal frieze is smooth or figurine-shaped, while wide side pylons are made rectangular or with a sloping inner edge.

The predominance of vertical line elements in the composition of facades is achieved both due to the presence of the developed volume or framing edges of the wall panels, as well as due to the narrow sun shade edges. They are placed

directly on the wall surface or in the area, when they are included in the fencing structure of encircling balconies or an attachable multistory grid. Accented vertical elements occupy both the entire facade and usually only its middle part. The predominance of horizontal linear elements is achieved due to wrap-around glazing and by using perimeter balconies, the fencing of which has a smooth, blind or variously dissected surface. The solution creating the division of the surface of facades into distinct rectangular elements is widely used. This is achieved by an active plastic solution of partition, window sill and linking sections of the wall, by intersecting large elements of the sun shields, as well as by the proximity of dimensions of fencing elements of solid loggias and the partitions separating them. Lattices, the patterns of which are close to the pattern of the Kazakh ornament to some extent, usually occupy the entire height of the building. At the same time, they are placed either separately in front of the windows located one above the other, in the fence of the group of loggias and balconies, or occupy the whole or almost the entire facade, being modulated into single or multi-element fragments. Relief ornamental inserts of various sizes are formed from separate small patterns on the fences of balconies and loggias, the outer edges of pylons, wide trims, closed areas of the walls or lay emphasis on fragments of the facade. In rare cases, instead of filling the area completely, there is a fragmentary placement of patterned plates. In most cases, monumental-decorative panels are placed on blind end facades, less often – in the form of separate inserts on wall-like pylons. Polychrome mosaics, ceramic tile outriggers, decorative plaster or painting in combination with various relief heights form geometric patterns, Kazakh ornament, complex-plot compositions with varying degrees of image conditionality, schemes of construction sites, as well as architectural masterpieces or architectural fantasies. The active plastic solution is widespread both at the level of the facade surface and in the volume as a whole. Expanded facade plasticity includes large pylons and pilaster-strips, perspective portals and frames, figured bay windows and avant-corps, large-detailed friezes and cornices, grouped arched balconies and outside loggias, large-element square linings and accented elements of the main supporting structures. Window and door openings of various sizes and proportions are rectangular in shape. The complex shape of buildings is created both at the level of plan layout with three- or four-beam straight or curvilinear outlines, circular, elliptical, arched and intersecting elements of various configurations, and at the level of pyramidal-prismatic solutions of separate roof sections. At the same time, there is both a passive and active solution of facade plasticity.

The combination of a complex plan and volume with the active plasticity of facades is quite common. The combination of active and passive plastic solutions of facades with simple and complicated volumes can also be found in domes and vaults. They have a smooth, ribbed, wavy-ribbed shape, are made single or multitiered, the surface is smooth, fine-ribbed or lamellar.

Yurt-shaped buildings are made of various structural-finishing materials and, with varying degrees of accuracy, repeat the spatial-decorative plastic solutions of the yurt. At the same time, the dimensions of buildings can be both similar and significantly different from the prototype to a greater extent. The use of the Kazakh yurt in the existing architectural-artistic forms can be found in a small number of examples.

D. The architecture of the late 20th – early 21st century

The turn of the century period is divided into two stages: the last decade of the 20th century and the early years of the 21st century.

The stage of **the last decade of the 20th century** is indicative of the following architectural-artistic forms.

There are rare examples of shaped lining with large slabs and regular or beveled edges. They create different types of rustic and large-element patterns, simple platbands and frames, wide frieze and sill belt courses. There are buildings with front masonry of shaped bricks of various types. The combination of bricks of several colors in figured masonry of various types with the singling-out of belt courses, frames, pilasters, pilaster-strips, gables, arches and niches of semicircular, bow-shaped and lancet forms is becoming widespread.

Large semicircular arches are used both singly and in the form of arcades, forming single or multifloor apertures and niches. Archivolts have a simple or stepped solution. In some cases, arches are made with cantilevered or suspended imposts. The walls have a smooth, rusticated surface or a surface dissected with pilaster-strips and belt courses.

A common technique is a passive plastic solution of facades, when either the wall plane has a pattern of a varying degree of complexity made of blind and glazed sections that significantly exceed the dimensions of the window apertures actually located behind them, or glazed openings have only a small depth relative to single-plane partition and window-linking sections. Both blind and glazed sections of facades sometimes have a multicolor solution of varying degrees of contrast. In some cases, single-plane surfaces are separated by small bay windows, local bulges, embedments or kinks. The active plastic solution of building facades is widely used relatively simple configuration. It includes pylons, edges, pilaster-strips, niches of different depths, occupying one or several floors, encircling or ordinary balconies and loggias of various shapes on a window, its part or group of windows, plain or figured frames of a complex section. The glazing of loggias, balconies and bay windows with different shapes in terms of the plan is actively used. Glazed areas alternate with blind ones or solid glazing with specular and translucent glass of various colors are used. Glazed elements are arranged singly and in groups.

The multiple-theme plasticity of reconstructed first floors is rarely linked with the architectural-artistic structure of the entire building, usually showing a contrast solution. In this case, either the entire first floor or only its part is formed. Sometimes, there are several multiple-theme fragments within the same facade. There are interpreted classical order details, architectural quotations from different epochs and regions and forms of a deliberate mono- or polyassociative nature that is not always of an architectural plan. The partial

or complete change of the facade plasticity is equally frequent. At the same time, either the structure of its architectural-artistic forms changes completely, or the coloring or lining in a single or multicolored version transforms the historically characteristic features.

A common technique is a complex dimensional-spatial solution with adjoining volumes of various shapes and degrees of detail design. Continuous, partial or fragmentary glazing is used.

Pediments and gables of a triangular and curvilinear shape, crowning certain parts of facades, are actively used. At the same time, they are arranged both singly and in groups, are simultaneously parts of the parapet and a continuation of large stained glass windows; they are used as a whole or in a fragmented form. Accented roofs usually have high external slopes over the eaves of a large overhang, forming both an attic and one, less often – two attic floors. Eaves have a usual or high edge with a blind frieze. The roof has significant overhang both along all and only some facades. Tower crowning of separate parts of buildings with hipped, dome, vaulted, single and multislope roofs of various heights and shapes is widespread.

Ordinary or ribbed hemispherical, three-quarter-spherical, helmet-shaped, spherical-conical domes, as well as hipped roofs, are used in combination with dome drums of various heights and sizes. These shapes complete the main volume of the building and its individual parts. The covering of domes and tents is both smooth and scaly. In rare cases, domes are fully or partially glazed; glazed or multicolored brickwork is used in the front layer. Angular towers with multidetail lanterns, expanded friezes with gables and figured broken pediments are common. Apertures and multisteped niches have a form of the lancet or semi-circular arches. There are expanded pilaster-strips and simplified pilasters, frames and belt courses. Smooth wall solutions with large multicolored flat or folded stained glass windows are also used. In single examples, monodome light concrete or brick structures can be found.

A yurt with inherent architectural-artistic forms is reproduced in demountable and stationary versions using traditional wooden and felt materials (both faggot and laminated plywood elements are often used), as well as with a metal frame and multicolored fabric-glulam coating.

The architecture of **the first years of the 21st century** demonstrates the use of the following groups of architectural-artistic forms.

A yurt is reproduced only as a demountable building in a traditional wooden-felt form while preserving the existing architectural-artistic forms.

Dome crowning is used with and without dome drums. The apertures and niches are pointed-arched. Simple pilaster-strips and belt courses are used, as well as expanded platbands. A complex plastic solution involves the use of pylons and cornices of various shapes, expanded pilasters and frames. Window openings have different configurations and sizes. Multiple-shaped building blocks are connected in a complex way. Sometimes, fine-detail elaboration of individual elements is used.

Bay windows and loggias are predominantly arc-shaped, have solid or floor-by-floor glazing. They are combined with figured gables, expanded cornices and accented with high external slopes.

The windows in horizontal and vertical rows are combined in large stained-glass windows. Stained-glass windows of various sizes are grouped or evenly arranged along the facades.

Articulated multisubjectness, contrasting with respect to the rest of the facades, is found in complete and fragmentary reconstructions of the first floors. In the context of this subject, both simplified and classical interpretations of orders with a corresponding set of details and contours of moldings are used. In rare cases, the architectural-artistic solution of the new vestibules and entrance roof overhangs corresponds to the rest of the facade.

III. RESULTS

The following directions for the development of architectural-artistic forms in the 20th century have been identified:

1. National-traditional direction (yurt: a comprehensive solution)
2. Ustyurt-Mangyshlak subregional direction (dome and domeless crowning, figured, carved and painted masonry)
3. Regional brick direction (simple and curly masonry)
4. Brick style (a complete solution)
5. Modern style (an integrated solution)
6. Neo-Russian style (wooden carvings; shaped masonry and stucco details)
7. Neo-Russian direction (stucco details and wooden carvings; an integrated solution with ornament)
8. Oriental style (a complete solution)
9. Eastern direction (Buddhist theme; medieval Central Asian theme; nonregional theme; national theme; neoregional industrial theme; East Asian theme)
10. Neoclassicism (a complex solution)
11. Neoclassical direction (specific details, Doric pilasters; simplified Doric theme; classical Doric theme; simplified and classical Ionic theme; simplified and classical Corinthian theme; a combination of different order themes; fantasy order themes)
12. Simplified classics (moldings and belt courses; pilaster-strips and pilasters; ordinary and shaped rustic patterns; pilasters and columns; expanded column cap)
13. Constructivism (a complex solution)
14. Synthesis of constructivism with simplified classics (a complex solution)
15. National-neoclassical direction (the theme of ornamented classical orders; the theme of arches with ornamented details; the theme of ornamented palm-shaped order; Ustyurt-Mangyshlak theme of ornamented fantasy order; the Ustyurt-Mangyshlak theme of an ornamented Central Asian column; the theme of simplified classics with ornament; the theme of ornamented classic details)
16. Neonational direction (the theme of a traditional yurt and "shoshala"; dome crowning)
17. Industrial-national direction (ornamented inserts and details; ornamental grids)
18. Industrial-regional direction (fine-grained and coarse-grained sun-protection grids; Eastern arched theme)

19. Industrial-neoclassical direction (a simplified classic theme)

20. Industrial decorative direction (various theme panels)

21. Industrial-international direction (large and continuous stained-glass windows; passive facade plastic; umbrella-shaped and parabolic figures)

22. Industrial-romantic direction (active facade plastic; themes of horizontal, vertical and mixed divisions)

23. Romantic direction (theme of portal frames; theme of expanded upper floors and expanded roofing; shaped facings; theme of active facade plasticity; theme of active volumetric plasticity; large and continuous stained glass windows; differently configurative bay windows; Neo-Eastern tent-dome theme; triangular and arc gables and broken pediments; steeple, tent and tower crowning)

24. The direction of various theme combinations (change in the characteristic color or facing; accentuated first floors, vestibules, and entrance roof overhangs; the theme of simplified classics; the neoclassical theme; the decorative-fantasy theme).

IV. CONCLUSION

From among the directions of development of architectural-artistic forms that emerged during the 20th century, the following directions ceased to be practiced by the beginning of the next century: Ustyurt-Mangyshlak subregional direction, the brick style, Neo-Russian style, Oriental style, neoclassicism, constructivism, the synthesis of constructivism with simplified classics, the national-neoclassical direction, neonational direction, industrial-national direction, industrial-regional direction, industrial-neoclassical direction, industrial-decorative direction, industrial-international direction, industrial-romantic direction. In the early years of the 21st century, trends in the development of architectural-artistic forms of the national-traditional, regional brick, Neo-Russian, Oriental, neoclassical, romantic directions, neomodern and the directions of various subject combinations have been preserved. At the same time, despite the disappearance or reduction of distribution of certain directions, their next appearance is very likely, for example, as it happened to modern, the stylistic features of which, after almost a century of pause, unexpectedly appeared in many ways in some buildings of the first years of the new century. The complete absence of national ornamental motifs in the plasticity of the turn of the century looks unusual, although they consistently continue to be used in widely used yurts for various purposes. The paradoxical stability over the course of the century, along with the national-traditional direction, was retained by neoclassical motifs, especially the theme in varying degrees of simplified Doric order, as well as multidimensionally interpreted generalized or specific "oriental" images. However, along with the expressed originality, it is indicative of the sustainable preservation of a certain community in the directions of architectural-artistic formation in Kazakhstan's architecture with neighboring countries and the reflection of global trends in the global architectural process.

REFERENCES

1. I.N. Tasmagambetov, "Kulyptas". Astana: OF Berel, 2002.
2. E.M. Baitenov, "Memorialnoe zodchestvo Kazakhstana: evolyutsiya i problemy formoobrazovaniya" ["Memorial Architecture of Kazakhstan: The Evolution and Problems of Formation"]. Almaty: KazGASA, 2004.
3. K.I. Samoilov, "Arkhitektura Kazakhstana XX veka (Razvitie arkhitekturno-khudozhestvennykh form)" ["Architecture of Kazakhstan of the 20th Century (Development of Architectural-Artistic Forms)"]. Moscow-Almaty: M-ARi Design, 2004.
4. B.T. Tuyakbaeva, "Almaty: drevnii, srednevekovi, kolonialnyi, sovetskii etapy urbanizatsii" ["Almaty: Ancient, Medieval, Colonial, Soviet Stages of Urbanization"]. Almaty: "World Discovery", 2008.
5. A.S. Galimzhanova, and M.B. Glaudinova, "Istoriya iskusstva Kazakhstana: v 3-kh t. Tom 2: Arkhitektura" ["History of Kazakhstan Art: in 3 Vols. Vol. 2: Architecture"]. Almaty: Oner, 2011.
6. D.D. Omuraliev, and O.V. Wolitschenko, "Meinstrymy noveishei arkhitektury – dvadtsat pervyi vek" ["Mainstreams of the Newest Architecture – the Twenty-First Century"]. Saarbrücken: Palmarium Academic Publishing, 2013.
7. B.A. Glaudinov, "Evolutsiya zodchestva Kazakhstana" ["Evolution of the Architecture of Kazakhstan"]. Almaty: Aleiron, 2016.
8. E.G. Malinovskaya, "Pamyatnik sovremennoi arkhitektury" ["Monument to Modern Architecture"]. Almaty: ARK Gallery, 2016.
9. G.A. Isabayev, "Stil'nye osobennosti arkhitektury Kazakhstana vtoroi poloviny XIX – nachala XX veka" ["Style Features of the Architecture of Kazakhstan in the Second Half of the 19th – Early 20th Century"]. Almaty: Zhibekzholy, 2017.
10. A.Y. Bronovitskaya, N.S. Malinin, and Y.I. Palmin, "Alma-Ata: arkhitektura sovetskogo modernizma. 1955-1991. Spravochnik-putevoditel" ["Alma-Ata: Architecture of the Soviet Modernism. 1955-1991. Guidebook"]. Moscow: Garage Museum of Contemporary Art, 2018.
11. O.N. Priemets, and K.I. Samoilov, "Razvitie ornamenta v arkhitekture Almaty" ["The Ornament Evolution in the Almaty Architecture"]. Almaty: Stroitelstvo i arkhitektura, 2019.
12. "Svod pamyatnikov istorii i kultury Kazakhstana. Yuzhno-Kazakhstanskaya oblast" ["Collection of Historical and Cultural Monuments of the Kazakhstan. South-Kazakhstan Region"]. Almaty: Glavnaya redaktsiya "Kazak entsiklopediyasy", 1994.
13. "Svod pamyatnikov istorii i kultury Respubliki Kazakhstan. Zhambylskaya oblast" ["Collection of Historical and Cultural Monuments of Kazakhstan. Zhambyl Region"]. Almaty: RGP NIPI PMK, 2002.
14. B.G. Ayagan, (Ed.), "Svod pamyatnikov istorii i kultury g. Almaty" ["Collection of Monuments of History and Culture of Almaty"]. Almaty: TOO Kazak entsiklopediyasy, 2006.
15. "Svod pamyatnikov istorii i kultury Respubliki Kazakhstan. Akmolinskaya oblast" ["Collection of Monuments of History and Culture of the Republic of Kazakhstan. Akmola Region"]. Almaty: Aruna, 2009.
16. "Svod pamyatnikov istorii i kultury Respubliki Kazakhstan. Zapadno-Kazakhstanskaya oblast" ["Collection of Monuments of History and Culture of the Republic of Kazakhstan. West-Kazakhstan Region"]. Almaty: Aruna, 2010.
17. A.V. Makhyanova, O.L. Panchenko, E.Sh. Akhmetova, D.K. Shigapova, and D.F. Sadretidinov, "City Population as a Subject of Urban Ecosystem's Development". *Journal of Advanced Research in Dynamical and Control Systems*, vol. 11(05-special issue), pp. 1916-1923.
18. A.I. Finogenov, and A.V. Popov, "Concept of Planning Development of Coastal Resort Settlements under Conditions of Complex Relief". *Journal of Environmental Management and Tourism*, vol. 10, 1(33), 2019.
19. A.V. Popov, "Architectural Examination of Student Accommodation in Russia and the CIS". *Amazonia Investiga*, vol. 8(19), 2019, pp. 179-190.
20. A.V. Popov, "The Impact of Architectural and Space-Planning Design of Student Accommodation (Dormitories, Campuses) on the Time Budget of The Student Youth". *International Journal of Engineering and Advanced Technology*, vol. 8(3), 2019, pp. 128-133.