

Early Stages Of Facade Formation In Central Asian Architecture: Antiquity And The Early Middle Ages (4th Century BCE – 10th Century Ce)

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Received: 25 October 2025; **Accepted:** 15 November 2025; **Published:** 21 December 2025

Abstract: This study examines the early stages of facade formation in Central Asian architecture from the X–III millennia BC to the III–VII centuries AD. Based on archaeological and architectural analysis of key sites such as Gonur-Depe, Altyn-Depe, Afrasiab, Toprak-Kala, and Varakhsha, the research identifies stable principles of monumentality, frontality, rhythmic articulation, and hierarchical composition. These early facade patterns formed the foundation for the subsequent development of regional architectural traditions in Central Asia.

Keywords: Central Asia, architectural facades, early architecture, monumentality, frontality, rhythm, proportion, urban space, sacred architecture, archaeological heritage.

Introduction: In the architectural tradition of Central Asia, the facade has historically functioned not merely as an external enclosure, but as a fundamental carrier of artistic, symbolic, and socio-political meaning. Unlike later medieval Islamic architecture, where the facade becomes an explicitly articulated representational surface, early architectural cultures of Central Asia developed facade principles implicitly, through mass, rhythm, proportion, and spatial hierarchy. Despite the substantial body of research devoted to ancient urban planning, fortification systems, and construction technologies, the problem of facade formation in early periods remains insufficiently systematized and rarely treated as an autonomous field of architectural analysis [1; 2; 3].

This gap is particularly evident for the long chronological span from the X–III millennia BC to the III–VII centuries AD, during which the fundamental principles of facade frontality, monumentality, rhythmic articulation, and compositional hierarchy were established [5; 7]. Scholars such as G. A. Pugachenkova, E. V. Rtveladze, M. E. Masson, and V. I. Sarianidi repeatedly emphasized the representational role of external walls in early Central Asian architecture, yet primarily in relation to urban form or defensive structures, rather than as a distinct architectural phenomenon [1; 3; 5; 7].

Early facades of architectural monuments in Margiana, Bactria, Sogdiana, and Khorezm developed under conditions of spatial sacralization, proto-urbanization, and the emergence of social stratification. In these contexts, the facade functioned as a visual boundary between sacred and profane space, as well as an instrument for expressing authority, collective identity, and cosmological order [3; 6; 8]. Understanding these early facade principles is essential for reconstructing the origins of regional architectural language in Central Asia.

The aim of this research is to identify stable patterns of facade formation in early Central Asian architecture and to determine their role in shaping the long-term regional architectural tradition.

METHODS

The research material consists of archaeologically investigated and reconstructed monuments dating from the Neolithic, Bronze Age, antiquity, and early medieval periods, located within the territory of modern Central Asia. The study focuses on key architectural complexes of Gonur-Depe and Altyn-Depe in Margiana, early urban layers of Afrasiab in Sogdiana, palace and cult complexes of Toprak-Kala and Varakhsha in Khorezm, as well as fortified settlements of Northern Turan [1; 5; 17].

Methodologically, the research adopts an interdisciplinary framework combining architectural analysis with archaeological interpretation. The following methods were applied: architectural-compositional analysis of facades; morphological analysis of exterior wall planes; comparative-historical method; analysis of proportions, rhythm, and scale in facade articulation; and critical interpretation of archaeological reconstructions and graphic documentation [1; 10; 15]. The facade is treated as an independent analytical category, regardless of internal spatial organization, consistent with theoretical approaches proposed by A. V. Shchusev and later architectural theorists concerned with architectural composition and perception [16].

RESULTS

The analysis reveals that stable facade-forming techniques emerged as early as the X–III millennia BC. In the temple complex of Gonur-Depe, excavated by V. I. Sarianidi, external walls demonstrate pronounced monumentality, strict geometric organization, and clear frontal orientation. The facade plane is structured through rhythmically repeated projections, niches, and thickened wall segments, creating a powerful visual impression of solidity and permanence [5; 17]. These features indicate an early understanding of facade mass as a symbolic and perceptual tool.

In Bronze Age monuments of Altyn-Depe, a clear emphasis on entrance zones can be observed. Archaeological evidence suggests deliberate differentiation between primary and secondary facade elements, reflecting early hierarchical organization of external surfaces [1; 5]. The extensive use of sun-dried brick allowed for plastic modeling of wall surfaces, enabling rhythmic articulation without reliance on applied decoration.

In Khorezmian architecture of the III–VII centuries AD, particularly in palace complexes of Toprak-Kala and Varakhsha, the facade acquired a pronounced representational and ideological function. Massive blind walls articulated by vertical projections, tower-like elements, and accentuated entrances formed a visually dominant architectural image associated with royal authority and sacral enclosure [3; 7; 8]. The scale of these facades significantly exceeded human proportions, reinforcing symbolic dominance over the surrounding urban fabric.

DISCUSSION

The formation of facades in Central Asian architecture during antiquity and the early Middle Ages resulted from a complex interaction between local construction traditions, environmental conditions, socio-political structures, and long-term intercultural exchange along

transregional routes. As demonstrated in the works of G. A. Pugachenkova, E. V. Rtveladze, and M. E. Masson, early architectural thinking in Central Asia was dominated by the perception of architecture as a protective and symbolic оболочка, where the external wall played a primary role in defining both spatial order and social meaning [1; 3; 7]. This circumstance directly shaped the principles of facade formation, which emphasized enclosure, continuity, and monumentality rather than surface decoration.

In ancient urban centers such as Afrasiab (Sogdiana), Toprak-Kala and Ayaz-Kala (Khorezm), Dalverzin-Tepe and Kampyr-Tepe (Bactria), the facade was not conceived as an autonomous decorative surface in the later medieval sense. Nevertheless, it clearly articulated the boundary between internal space and the urban environment, functioning as a visual marker of ownership, status, and control [1; 3; 8]. Archaeological evidence indicates that residential, administrative, and cult buildings were characterized by massive, largely blind facades with minimal perforation. This feature was dictated not only by climatic adaptation—protection from heat, dust, and solar radiation—but also by defensive requirements and the need to regulate access in densely built urban fabrics.

Vertical articulation through buttresses, pilaster-like projections, stepped wall profiles, and rhythmic thickening of wall sections formed early prototypes of facade plasticity. In Toprak-Kala, for example, the palace complex demonstrates a deliberate rhythmic organization of exterior walls, where tower-like projections and recessed planes create a powerful play of light and shadow, reinforcing the monumentality of the facade and its symbolic association with royal authority [3; 7]. Similar principles are observed in the outer walls of fortresses and temples in Margiana (Gonur-Depe, Togolok-Depe), where facade articulation enhances the perception of mass and permanence rather than visual openness [5; 17].

During the early feudal period (V–VIII centuries), facade structures became more complex as architectural forms responded to changes in social hierarchy, religious practices, and urban organization. Researchers such as Sh. Z. Nurmukhamedova and S. G. Khmel'nitsky note the increasing role of vertical segmentation associated with multi-tiered volumes, early ayvan-like spaces, and proto-portal compositions that begin to accentuate entrance zones [10; 15]. The facade gradually transformed from a purely enclosing surface into an element of spatial communication, guiding movement and emphasizing axial approaches within architectural ensembles.

Zoroastrian architectural traditions played a significant role in shaping facade symbolism during this period. Fire temples and ceremonial complexes emphasized strict axiality, symmetry, and geometric clarity, with facades structured according to proportional systems based on the square and rectangle [6; 11]. These proportional schemes, identified by comparative studies of Central Asian and Iranian monuments, contributed to the perception of facades as carriers of cosmological and ritual meaning, where scale and geometry reinforced the sacred status of the building.

In the early Islamic period (VIII–X centuries), facade composition underwent a qualitative transformation while preserving many earlier principles. Although ornamentation remained restrained, facades increasingly functioned as visual representatives of buildings within the urban context. Scholars such as O. Grabar and L. Golombek emphasize that early Islamic architecture in Central Asia adapted pre-Islamic construction practices, reinterpreting them through new functional and symbolic frameworks [11; 19]. Hierarchical organization of facades became more pronounced, with entrance elements—often recessed and vertically emphasized—dominating secondary wall planes.

At the same time, architectural expressiveness relied less on applied decoration and more on depth, shadow, and spatial perception. The thickness of walls, depth of openings, and contrast between illuminated and shaded surfaces became key compositional tools. This approach reflects continuity with earlier traditions, where facade plasticity emerged from structural logic and material properties rather than surface ornament. Thus, by the end of the early medieval period, Central Asian facades had evolved into complex architectural interfaces that combined monumentality, proportional order, and symbolic representation, laying the foundation for the richly articulated facade systems of the mature Islamic Middle Ages.

CONCLUSION

The research confirms that the foundations of facade formation in Central Asian architecture were established in antiquity and the early Middle Ages. Monumentality, rhythmic articulation, hierarchical organization of facade elements, and a strong correlation between facade composition, building function, and urban context emerged as stable principles during this period [2; 3; 19]. These principles later became the structural and conceptual basis for the development of highly expressive and symbolically charged facades in medieval Islamic architecture of Central Asia.

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