



“THE EVOLUTION OF FACADE ARCHITECTURE IN CENTRAL ASIA (7TH–12TH CENTURIES): FROM DEFENSIVE ENCLOSURES TO SYMBOLIC AND ENSEMBLE-BASED ARCHITECTURAL SYSTEMS”

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ABSTRACT

This study substantiates that the transformation of facade principles in Central Asian architecture between the 7th and 12th centuries was a long-term, internally consistent evolutionary process rather than the result of abrupt cultural or ideological rupture [1; 3; 10]. The architectural facade gradually developed from a predominantly defensive and enclosing surface into an autonomous and semantically charged architectural system that integrated structural logic, symbolic meaning, and urban representation [2; 15]. This transformation reflects broader processes of cultural synthesis, technological advancement, and the institutionalization of Islamic architectural thought in Central Asia [3; 14].

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Archaeological and architectural evidence demonstrates that pre-Islamic traditions of Bactria, Sogdiana, Khorezm, and Margiana were characterized by massive exterior walls with limited apertures, emphasizing protection, climatic adaptation, and social hierarchy [1; 5; 7]. In these contexts, facades functioned primarily as boundaries separating interior space from the external environment. However, by the 7th–8th centuries, under conditions of religious plurality—including Zoroastrianism, Christianity, early Sufi practices, and the emerging Islamic worldview—facade composition began to acquire representational and communicative functions [3; 6]. The facade increasingly operated as a mediating interface between the building, the urban fabric, and collective symbolic systems [2; 10].

Political and cultural interactions played a significant role in this shift. Contacts between the Turkic Khaganate and Byzantium, mediated through Khazaria, facilitated the transmission

of architectural concepts such as axuality, frontal emphasis, hierarchical articulation of wall planes, and rhythmic organization of openings [3; 17]. These features are archaeologically attested in Northern Turan settlements, including Aktobe-2 and Baba-Ata, where facades display a growing compositional order beyond purely defensive logic [14; 17]. Accentuated entrances, symmetrical layouts, and proto-monumental wall treatments indicate an emerging awareness of facade representation as a visual and ideological statement [10; 14].

The spread of Islam and the institutionalization of Islamic urban culture between the 9th and 10th centuries further reinforced this tendency [11; 13]. Islamic architecture in Central Asia did not reject earlier spatial and constructive traditions but reinterpreted them through new symbolic frameworks [3; 14]. The facade became a vehicle for expressing religious hierarchy, cosmological order, and political authority, particularly through the architectural articulation of entrances and thresholds [12; 15]. Portals evolved from simple openings into architecturally emphasized transitional zones marking the passage from profane to sacred space [14; 20].

A critical factor in the maturation of facade principles was technological transformation. The widespread adoption of fired brick construction in the 10th century significantly expanded architectural possibilities [7; 18]. Fired brick enabled greater structural precision, durability, and plasticity, allowing facades to be articulated through relief, texture, and geometric patterning rather than applied ornament alone [7; 19]. Brick bonds, recessed niches, arches, and domical transitions produced complex light-shadow effects, transforming the facade into a dynamic visual surface responsive to natural illumination [18].

The Samanid Mausoleum in Bukhara represents a pivotal moment in this process [7; 18]. Its cubic mass, transitional squinches, and domed superstructure form a hierarchically ordered composition grounded in cosmological symbolism [19]. The facade is treated as an integral structural and expressive system, where ornamentation emerges directly from constructional logic rather than surface application [7; 18]. This monument demonstrates the synthesis of pre-Islamic building traditions with Islamic symbolic concepts, establishing a paradigm for later architectural development in Transoxiana [3; 14].

During the Seljuk period of the 11th–12th centuries, earlier experimental principles were consolidated into stable architectural canons [11; 14]. Facades became vertically oriented and rhythmically structured through standardized systems of niches, pilasters, pointed arches, and recessed portals [14; 18]. The introduction of muqarnas systems and layered wall articulation increased spatial depth and visual complexity, reinforcing the representational role of the facade within the urban environment [11; 20]. At this stage, the facade functioned as a carefully calibrated compositional system mediating between architectural mass, urban space, and ideological meaning [2; 15].

Equally significant was the emergence of ensemble-based facade composition. In necropolises and religious complexes such as Shah-i Zinda in Samarkand and the Sultan Saodat ensemble in Termez, facades were conceived as elements of a sequential spatial experience rather than isolated surfaces [2; 7; 10]. Linear arrangements of mausoleums created rhythmic progressions of facades that guided movement and perception while maintaining proportional coherence and symbolic continuity [14; 18]. This approach reflects a mature understanding of

facade rhythm as a primary tool of spatial organization at the scale of the architectural ensemble [2; 10].

Sufi architecture contributed a distinct metaphysical dimension to facade formation. In khanaqahs and related complexes, facade composition articulated spiritual progression through contrasts between massive enclosing walls and deeply recessed portals, shadowed transitional zones, and vertically accentuated volumes [14; 20]. These compositional strategies corresponded to Sufi concepts of inner transformation and ascent, embedding doctrinal meaning directly into architectural form [20]. The facade thus became an active participant in ritual practice and spiritual experience rather than a neutral architectural boundary [14].

The study concludes that by the 12th century Central Asian architecture had developed a coherent and internally consistent philosophy of the facade [3; 14; 18]. This philosophy was based on the integration of structural rationality, proportional order, symbolic hierarchy, material expressiveness, and ensemble composition [2; 15]. These principles formed the conceptual foundation for the monumental facade traditions of the Timurid period and remain fundamental for understanding the historical continuity and cultural identity of architecture in Uzbekistan and the wider Central Asian region [18; 19].

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