

Development of The Building Materials Industry in The Uzbek SSR In The 1940s-1960s: State Policy, Modernization, And Structural Problems

 Turdibay Shadmanov

PhD, National University of Uzbekistan named after Mirzo Ulugbek, Uzbekistan

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Abstract: This article examines the development of the building materials industry in the Uzbek Soviet Socialist Republic from the late 1940s through the 1960s, with particular attention to brick, cement, and precast reinforced-concrete production. The study is based on resolutions of the Council of Ministers of the Uzbek SSR, decisions of the Bukhara and Samarkand regional executive committees, and contemporary industry publications. These materials are analysed as administrative and technical sources that recorded both the priorities of state policy and the recurring problems of implementation. The article shows that postwar policy combined higher output targets with mechanization, improvement of product quality, expansion of the raw-material base, organized recruitment of labour, and development of enterprise infrastructure. At the same time, low technical equipment, uneven capacity utilization, labour shortages, weak logistical coordination, and delays in capital construction restricted the effectiveness of these measures. By the mid-1960s, the authorities had moved from the immediate restoration of local production toward broader industrialization of the republic's construction complex. Nevertheless, formal fulfilment of gross-output plans continued to coexist with unused investment funds, production imbalances, financial losses, and shortages of essential materials. The article concludes that modernization was substantial but incomplete and that the administrative-planning system itself reproduced many of the industry's structural difficulties.

Keywords: Building materials, brick industry, cement industry, precast reinforced concrete, Uzbek SSR, industrialization, postwar reconstruction, state policy, mechanization, archival documents.

Introduction: The production of building materials occupied a strategic position in the economic development of the Uzbek SSR. Industrial enterprises, housing, transport facilities, irrigation systems, schools, hospitals, and cultural institutions all depended on a stable supply of bricks, cement, lime, roofing materials, ceramic products, and reinforced-concrete structures. During the prewar decades, the republic created a basic production network dominated by relatively simple materials and numerous small enterprises. After the Second World War, the scale of state construction programmes required a transition from dispersed and labour-intensive production to larger, technically equipped, and more specialized industrial facilities.

The postwar expansion of construction created a persistent contradiction. Demand for building materials rose rapidly, while the technical condition of many plants remained weak. Production plans were frequently increased before enterprises had acquired the equipment, labour force, transport, water supply, housing, and repair facilities necessary to fulfil them. This mismatch was especially visible in the brick industry, which remained indispensable for mass civil construction. In 1959, 140 brick factories in the republic produced 1.06 billion fired bricks and 700 million adobe bricks, yet many factories continued to rely on manual operations and used their firing capacity far below design levels [2].

State policy therefore addressed the building

materials industry through several interconnected measures. Authorities set quantitative production targets, demanded higher labour productivity, introduced quality standards, planned mechanized extraction and moulding, organized recruitment of workers, allocated land and housing to stabilize the workforce, and required regional agencies to provide water, transport, electricity, and equipment. The same administrative documents also reveal chronic supply failures, low investment efficiency, production imbalances, and conflict between central industrial ministries and regional executive committees.

The purpose of this article is to identify the principal directions of state policy toward the building materials industry in the Uzbek SSR from the late 1940s through the 1960s and to assess the limits of the modernization programme. The analysis focuses on three interconnected sectors: brick production as the basic local material of postwar construction; cement as a foundation of industrialized capital construction; and precast reinforced concrete as a key element of the transition to standardized and large-scale building methods. Particular attention is paid to the relationship between planned targets and actual enterprise performance, the organization of labour, technological modernization, product quality, capacity utilization, and capital construction.

The scholarly significance of the study lies in using administrative resolutions not only as records of official decisions, but also as evidence of the functioning of the Soviet planning system. Production figures, deadlines, reprimands, requests for equipment, and instructions concerning labour mobilization make it possible to reconstruct the practical mechanisms through which industrial policy was implemented at republican and regional levels. At the same time, these sources require a critical approach: they primarily reflect the perspective of governing institutions and tend to represent economic problems in the language of plan fulfilment, discipline, and administrative responsibility.

LITERATURE REVIEW

The source and literature base of the study consists primarily of contemporary industrial publications and archival administrative documentation. The journal *Stroitel'stvo i arkhitektura Uzbekistana* (Construction and Architecture of Uzbekistan) provides production statistics, technical assessments, and sectoral evaluations for the late 1950s. Its materials show the scale of brick and reinforced-concrete production, the uneven use of factory capacity, the persistence of manual operations, and the engineering problems of newly created enterprises [2]. As a specialized

publication produced within the Soviet economic system, however, the journal interpreted development through the categories of technical progress, plan fulfilment, and industrial efficiency. Its data are therefore valuable, but its analytical language must be read in relation to the institutional priorities of the period.

The archival core of the article comprises resolutions preserved in the National Archives of the Republic of Uzbekistan. The decisions concerning Brick Factory Administration No. 12 in Bukhara and Brick Factory Administration No. 8 in Samarkand document the local implementation of republican policy in 1949 [1, 3]. They record production results, quality problems, planned mechanization, labour recruitment, social provision, material supply, and mechanisms of administrative oversight. A later resolution on the economic and financial performance of the Ministry of Construction Materials Industry in 1966 and the first four months of 1967 makes it possible to compare the immediate postwar recovery agenda with the structural problems of a more mature industrial sector [4].

These materials complement one another. Regional resolutions reveal how production targets were translated into specific obligations for plant directors, district authorities, water-management bodies, transport organizations, and law-enforcement institutions. Republican documents show the broader consequences of inefficient capacity use, delayed commissioning, financial losses, and shortages of major materials. The combination of these sources allows the article to move beyond a simple narrative of output growth and to analyse the administrative mechanisms, technical constraints, and social costs of industrial development.

Published scholarship directly addressing the historical development of the building materials industry is limited within the source corpus used here. Accordingly, the review concentrates on contemporaneous sectoral analysis and archival documentation. This focus defines the article's contribution as a source-based reconstruction of state policy and enterprise performance and avoids extending the argument beyond the evidence contained in the available materials.

METHODOLOGY

The study employs a qualitative historical, source-critical, comparative, and quantitative approach. The chronological framework covers the late 1940s through the end of the 1960s. The main documentary groups are: decisions of the Bukhara and Samarkand regional executive committees adopted in 1949; a

resolution of the Council of Ministers of the Uzbek SSR evaluating the work of the Ministry of Construction Materials Industry in 1966 and early 1967; and sectoral data published in 1960. The documents were selected because they contain detailed information on production targets, technology, labour organization, quality, investment, and capacity utilization.

Source-critical analysis was applied to the administrative origin and purpose of each document. Resolutions were not neutral descriptions of industrial reality; they were instruments of governance intended to assign responsibility, establish deadlines, and compel fulfilment of state plans. Accordingly, the study distinguishes between official targets, reported performance, administrative interpretation, and the broader structural conclusions that can be drawn from them. Critical statements in resolutions are treated as evidence of recognized institutional problems, while positive plan indicators are compared with data on quality, costs, unused capacity, and delayed commissioning.

Comparative analysis is used at two levels. First, the Bukhara and Samarkand cases are compared to identify common features and regional differences in postwar brick-industry policy. Second, the measures of 1949 are compared with the situation in 1966-1967 to trace changes in state priorities. Quantitative indicators are used to establish the scale and direction of these changes, but the article does not claim statistical representativeness for the entire republic because the archival corpus is unevenly distributed by region and sector.

The interpretation is organized around several analytical categories: production capacity and its utilization; mechanization and technical reconstruction; labour recruitment and mobilization; product quality; material and transport supply; enterprise social infrastructure; financial efficiency; and the relationship between capital investment and the commissioning of fixed assets. This framework makes it possible to analyse modernization as a multidimensional process rather than as a simple increase in output.

RESULTS

In the first postwar years, the development of local building-material production was treated as a necessary condition for implementing housing and industrial construction programmes. The resolution of the Bukhara Regional Executive Committee, adopted in connection with Resolution No. 337 of the Council of Ministers of the Uzbek SSR of 15 March 1949, illustrates this policy. Brick Factory Administration No. 12 had fulfilled only 87.7 per cent of its gross-output

plan in 1948. The firing plan reached 102.4 per cent, while the moulding plan was fulfilled by only 80.1 per cent. This disproportion indicates that the principal production bottleneck was not kiln operation, but the preparation of raw materials and the productivity of the moulding section. The enterprise also failed to meet the planned assortment and quality indicators [1].

The response of the authorities was not limited to criticism. For 1949, the enterprise was assigned a target of seven million moulded bricks and six million fired bricks. The plant director was instructed to complete the acceptance and testing of Hoffmann kiln No. 1, a continuous ring kiln used for industrial brick firing, and to bring the associated technological and transport equipment into operation by 1 April. The decision thus linked increased output to the elimination of a specific technical constraint rather than treating plan fulfilment solely as a matter of labour discipline [1].

The Bukhara programme combined higher production targets with requirements for a stronger raw-material base, greater labour productivity, and better quality. The plant was ordered to create an additional reserve of 300 cubic metres of sand and to reach an average annual output of 64,600 bricks per worker. It was also required to produce one million grade No. 100 bricks and raise the share of first-grade bricks to 60 per cent. These measures show that the state increasingly connected the quantitative fulfilment of plans with technical characteristics and the suitability of output for capital construction [1].

Mechanization was another central objective. The resolution called for the mechanical moulding of three million bricks, the excavation of 2,500 cubic metres of clay by excavator, and mechanized transport of clay from the Beshker quarry. Such measures reflected a wider postwar effort to reduce dependence on manual labour. Contemporary sectoral materials nevertheless show the incomplete character of this transition. Technical reconstruction, year-round operation, mechanized raw-material extraction, and changes in kiln technology increased the proportion of mechanized work at brick factories to approximately 50 per cent. Yet the loading of adobe bricks onto tunnel cars, placement in kilns, and unloading after firing often remained manual [2].

The limitations of technical modernization were also visible in capacity utilization. At eleven factories under the Samarkand Economic Council, firing capacity was used at only 55.5 per cent; in Kashkadarya Region, the corresponding figure was 66 per cent; and at twenty factories under the Tashkent Economic Council, 83.5

per cent [2]. These figures indicate that the expansion of nominal capacity did not automatically produce a proportional increase in output. The priority was therefore not merely the construction of new factories, but fuller use of existing facilities and the completion of mechanization across the entire production cycle.

State policy also recognized that production targets could not be achieved without measures to stabilize the workforce. In Bukhara, the authorities planned the construction of 200 square metres of housing, the establishment of a mechanical workshop, and the organized recruitment of fifty workers by 15 April 1949. At least forty of these workers were to be supplied by the regional executive committee. Ten hectares of irrigated land were allocated for a subsidiary farm intended to improve food provision for plant employees. These measures demonstrate that labour policy combined administrative recruitment with social support designed to retain workers at the enterprise [1].

Infrastructure and logistics formed another essential component of the programme. The regional water-management department was required to guarantee an uninterrupted supply of water from the Namitan irrigation ditch. Local authorities were forbidden to divert the plant's vehicles and managerial personnel to activities unrelated to its main production. The inclusion of these provisions shows that brick production was vulnerable not only to internal technological problems, but also to the wider practice of reallocating enterprise resources to temporary campaigns and other regional tasks [1].

The Bukhara resolution also reveals tensions between regional institutions and the republican Ministry of Construction Materials Industry. The regional executive committee stated that the ministry had failed to deliver equipment, electrical materials, and components required for mechanization and electrification. It therefore appealed directly to the Council of Ministers to accelerate the supply of poles, wires, insulators, and other items. This episode illustrates a recurring weakness of the administrative-planning system: production responsibility was assigned to enterprises and regional authorities, while control over essential material resources remained concentrated in central supply structures [1].

The Samarkand case confirms many of these patterns while also revealing a stronger reliance on labour mobilization. Brick Factory Administration No. 8 exceeded several quantitative targets in 1948: gross output reached 108 per cent, raw-brick production 107 per cent, and firing 100.2 per cent. These results,

however, were accompanied by unsatisfactory product quality, which placed the enterprise in a difficult financial position. The case shows that formal over-fulfilment of output targets could coexist with low economic effectiveness and that quality increasingly became part of the official assessment of enterprise performance [3].

For 1949, the Samarkand enterprise was assigned the production of twelve million adobe bricks, eleven million fired bricks, and 150,000 roof tiles. The planned annual productivity was 77,000 bricks per worker, while two million bricks were to meet grade No. 100 and first-grade bricks were to constitute 60 per cent of total output. As in Bukhara, the production programme combined volume, labour efficiency, assortment, and quality. The higher productivity target suggests that regional authorities attempted to increase output through more intensive use of labour as well as through the expansion of capacity [3].

Labour shortages remained one of the most acute problems. The Samarkand Regional Executive Committee ordered the organized recruitment of 150 workers by 1 May 1949 and distributed this obligation among several districts. Collective farms that supplied workers to the brick enterprise were exempted from other mobilization tasks. This arrangement shows the priority assigned to building-material production and the administrative redistribution of rural labour resources in support of industrial construction [3].

The use of prison labour was an especially significant feature of the Samarkand programme. The regional Ministry of Internal Affairs was instructed to allocate 150 prisoners from Correctional Labour Colony No. 4 to the brick factory from 1 April 1949. The measure demonstrates that the postwar construction economy relied not only on organized civilian recruitment but also on the penitentiary system as a reserve of labour. In conditions of workforce scarcity, coercive labour mechanisms became part of the implementation of state industrial plans [3].

Administrative oversight was strengthened alongside labour mobilization. The regional planning body was required to report monthly on the implementation of the resolution. The comparison of Bukhara and Samarkand shows a common policy model: production targets were raised; mechanization and quality improvements were demanded; labour was recruited administratively; and regional institutions were made responsible for infrastructure and monitoring. The main difference lies in the more explicit use of multiple mobilization mechanisms in Samarkand, including both rural recruitment and prison labour.

By the late 1950s, brick production had expanded

substantially, but the industry still lagged behind other branches in technical equipment. The continued use of manual operations, low firing-capacity utilization, and unstable quality meant that the basic material of mass construction remained a bottleneck. The evidence therefore does not support a simple narrative of uninterrupted technical progress. Modernization increased output and introduced new equipment, yet it remained partial and uneven across plants and stages of production.

Cement represented a different but closely related dimension of industrialization. Its expansion was essential for changing the character of capital construction and for the wider introduction of concrete and standardized structural elements. The growth of cement production made possible the transition from building practices dominated by local wall materials toward more industrial methods. Nevertheless, the source corpus indicates that the republic's cement sector developed under conditions of rising demand and persistent pressure to maximize the use of existing capacity.

The production of precast reinforced concrete began in the republic in 1955 with the launch of a plant near Tashkent. By the beginning of 1959, enterprises were capable of producing 266,800 cubic metres of reinforced-concrete structures annually [2]. This expansion was important because precast concrete formed the technological basis of standardized industrial construction. It offered the possibility of reducing on-site labour, accelerating construction, and increasing the repeatability of structural elements.

The rapid establishment of reinforced-concrete plants, however, was not always supported by adequate engineering coordination. Contemporary analysis noted that the capacities of equipment installed in different stages of the production cycle were often poorly matched. Such imbalances prevented rhythmic workshop operation, increased labour expenditure, and raised production costs. At four major plants, the production of one cubic metre of precast concrete required approximately two to three person-days, while costs ranged from 350 to 550 rubles. The low capacity of many enterprises, lack of specialization, and outdated technology also produced high specific capital investment, estimated at 540 to 1,000 rubles per cubic metre of capacity [2].

These difficulties indicate that industrialization required more than the construction of new plants. Efficient production depended on the coordination of equipment, specialization of output, reconstruction of larger enterprises, and elimination of bottlenecks between individual workshops. The reinforced-

concrete sector thus reproduced a problem already visible in brick production: nominal expansion of capacity could be undermined by internal technological disproportions.

The resolution evaluating the Ministry of Construction Materials Industry in 1966 and the first four months of 1967 provides the clearest evidence of the contradictory results of modernization. At the aggregate level, the ministry fulfilled its gross-output plan by 100.4 per cent and its labour-productivity plan by 102.3 per cent. Targets for cement, lime, asbestos-cement pipes, and sanitary ware were exceeded. Cement-capacity utilization rose from 92.2 per cent in 1965 to 98.4 per cent in 1966 [4]. These indicators suggested a sector operating close to the limits of its available production potential.

A closer examination of the same document reveals substantial structural weaknesses. Fired-brick production showed almost no growth, and average capacity utilization at brick plants was only 78.5 per cent. At the Akhangaran asbestos-cement and thermal-insulation materials plant, production fell short by 13.9 million standard slate tiles. The coexistence of high aggregate plan fulfilment with shortages of essential products demonstrates the limitations of gross-output indicators as a measure of the industry's ability to meet construction needs [4].

Technological modernization remained particularly weak. Although state credit was available for new equipment, mechanization, and improved production methods, enterprises used only 16 per cent of the funds allocated by the State Bank. A total of 560,000 rubles remained unused, including 300,000 rubles intended specifically for production expansion. This situation reflected not a simple absence of investment resources, but the inability of ministries and enterprises to transform allocated finance into installed and functioning equipment [4].

Financial performance confirmed the depth of the problem. Non-production expenses amounted to 443,000 rubles, including 288,000 rubles in penalties for vehicle downtime and breaches of contractual obligations and 83,000 rubles for shortages and damage to inventories. Production costs increased by 639,000 rubles, while twenty-seven enterprises failed to fulfil savings plans and incurred excess losses of 2.645 million rubles. These figures point to weak coordination, inadequate control over material resources, and low contractual discipline [4].

Capital construction was another major source of inefficiency. The capital-investment plan was fulfilled by 99.3 per cent, but the commissioning of fixed assets reached only 66.2 per cent; within the Main

Directorate of Wall Materials, the figure was 46.1 per cent. Thus, financial allocations were almost fully expended, while completed productive capacity lagged far behind. The republic failed to commission capacity for the annual production of 144 million bricks, and the Angren Ceramic Plant and the Karakushkhan sawn-stone quarry were not brought into operation on schedule [4].

The consequences extended directly to housing construction. Enterprises received 4,100 square metres less housing than planned. During the first four months of 1967, plan fulfilment remained unsatisfactory for several major products: 95.6 per cent for building bricks, 92.4 per cent for slate, 95.4 per cent for lime, 47.5 per cent for ceramic pipes, and 73.0 per cent for agloporite, a lightweight porous aggregate used in concrete [4]. The persistence of these shortfalls shows that the problems were systemic rather than temporary.

The comparison between 1949 and 1966-1967 reveals an evolution in the scale and language of state policy. In the late 1940s, the main concerns were the restoration of individual plants, acquisition of equipment, organization of labour, supply of water and raw materials, and fulfilment of local brick-production plans. By the mid-1960s, policy addressed a more complex industrial system and emphasized capacity utilization, investment efficiency, financial discipline, product specialization, and the commissioning of major enterprises. The object of management had expanded from individual factories to an integrated republican construction-materials complex.

At the same time, the central structural contradiction remained unchanged. The state could set targets, allocate funds, mobilize labour, and issue detailed instructions, but it could not consistently coordinate equipment supply, transport, construction, technological balance, and enterprise incentives. Formal plan fulfilment at the level of gross output therefore coexisted with material shortages, unfinished plants, low quality, unused credit, and excess costs. The modernization of the industry was real, but its results were constrained by the mechanisms through which it was administered.

CONCLUSION

The analysis supports several conclusions. First, the building materials industry was a central component of postwar economic policy in the Uzbek SSR because the fulfilment of housing, industrial, and socio-cultural construction programmes depended directly on bricks, cement, roofing materials, ceramics, and reinforced-concrete products. State authorities therefore treated

the restoration and expansion of this sector as a strategic task rather than as a secondary branch of local industry.

Second, policy in the late 1940s was comprehensive in design. It combined increased output targets with mechanization, development of raw-material reserves, product-quality requirements, higher labour productivity, organized recruitment, housing and food provision for workers, infrastructure development, and administrative monitoring. The Bukhara and Samarkand resolutions demonstrate a unified governance model, although the Samarkand case more clearly reveals the use of labour mobilization and prison labour.

Third, technical modernization remained incomplete. Mechanized extraction and moulding expanded, new kilns and plants were introduced, and precast reinforced-concrete production began. Nevertheless, important operations continued to be performed manually, many factories used only part of their design capacity, and newly constructed reinforced-concrete plants suffered from poorly coordinated technological cycles. The expansion of nominal capacity therefore did not always result in efficient or rhythmic production.

Fourth, by the mid-1960s the industry had entered a new stage. State policy shifted from immediate postwar recovery toward the industrialization, specialization, and financial regulation of a republican construction complex. Aggregate output and labour-productivity plans were often fulfilled, and cement capacity was used intensively. Yet these achievements were offset by stagnation in brick production, shortages of slate and ceramic products, unused investment credit, growing costs, penalties, losses, and delayed commissioning of major facilities.

Fifth, the evidence demonstrates the limits of the administrative-planning model. Detailed resolutions could identify problems and assign responsibility, but the system repeatedly failed to coordinate material supply, investment, transport, construction, technology, and labour. As a result, formal indicators of plan fulfilment did not necessarily correspond to the actual availability, quality, or cost of building materials. The development of the industry was therefore characterized by simultaneous expansion and inefficiency.

Overall, the building materials industry of the Uzbek SSR underwent a substantial transformation from the late 1940s through the 1960s. It moved beyond a network dominated by small and technically weak enterprises toward a more diversified system that included large cement plants and precast reinforced-

concrete production. This transformation created the material basis for the industrialization of construction, but it did not eliminate the chronic structural problems of Soviet economic management. The archival evidence shows that modernization was not a completed transition; it was an uneven process shaped by both technological progress and the persistent constraints of the planning system.

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