Zeitschrift: gta papers
Herausgeber: gta Verlag
Band: 6 (2021)

Artikel: The cornice and the joint : on excess and mass production in Soviet architecture
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DOI: https://doi.org/10.5169/seals-1007013

The Cornice and the Joint: On Excess and Mass Production in Soviet Architecture

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The classical language of architecture can be a constitutive element in the search for industrial methods of construction. For those of us who learned about Soviet architecture from histories written since the 1960s, a remarkable book from the preceding decade offers an unexpected account of the capacity of prefabrication to modernize a building element that is seldom associated with mass production: the cornice. Published

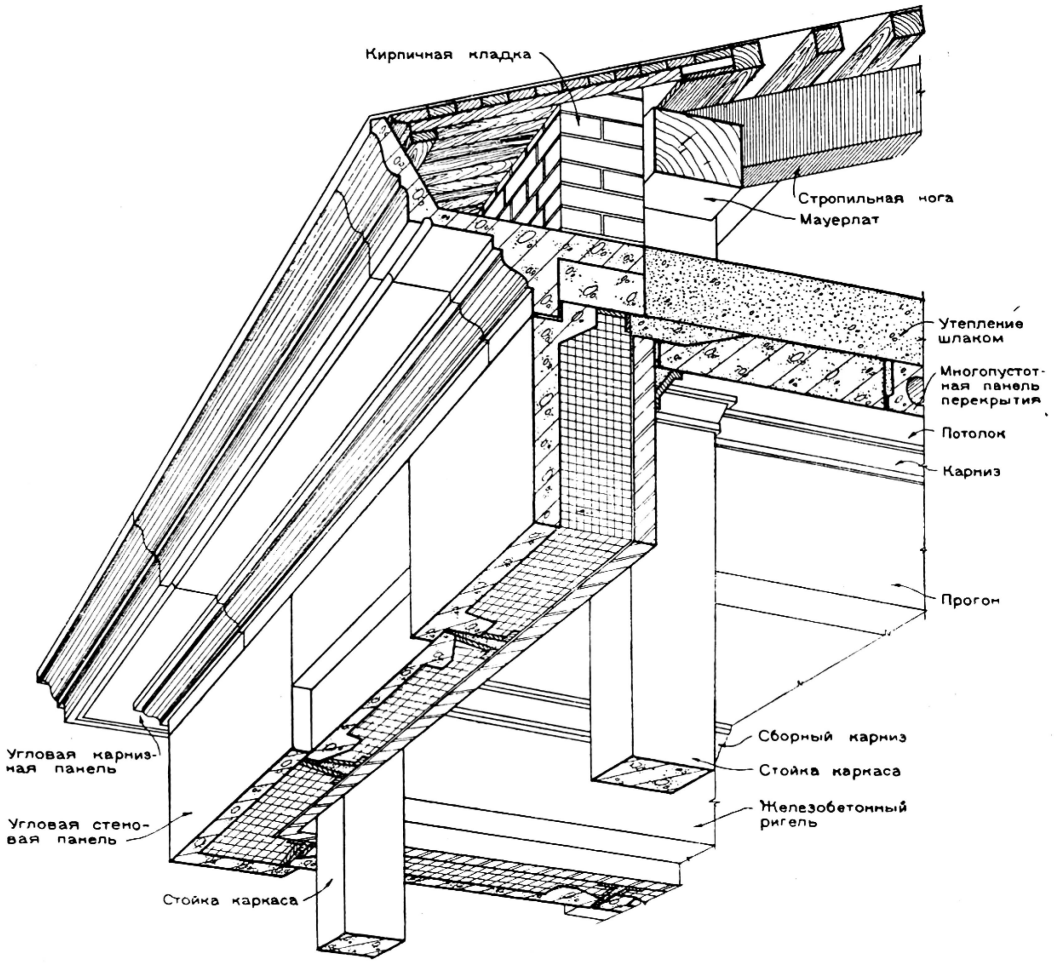
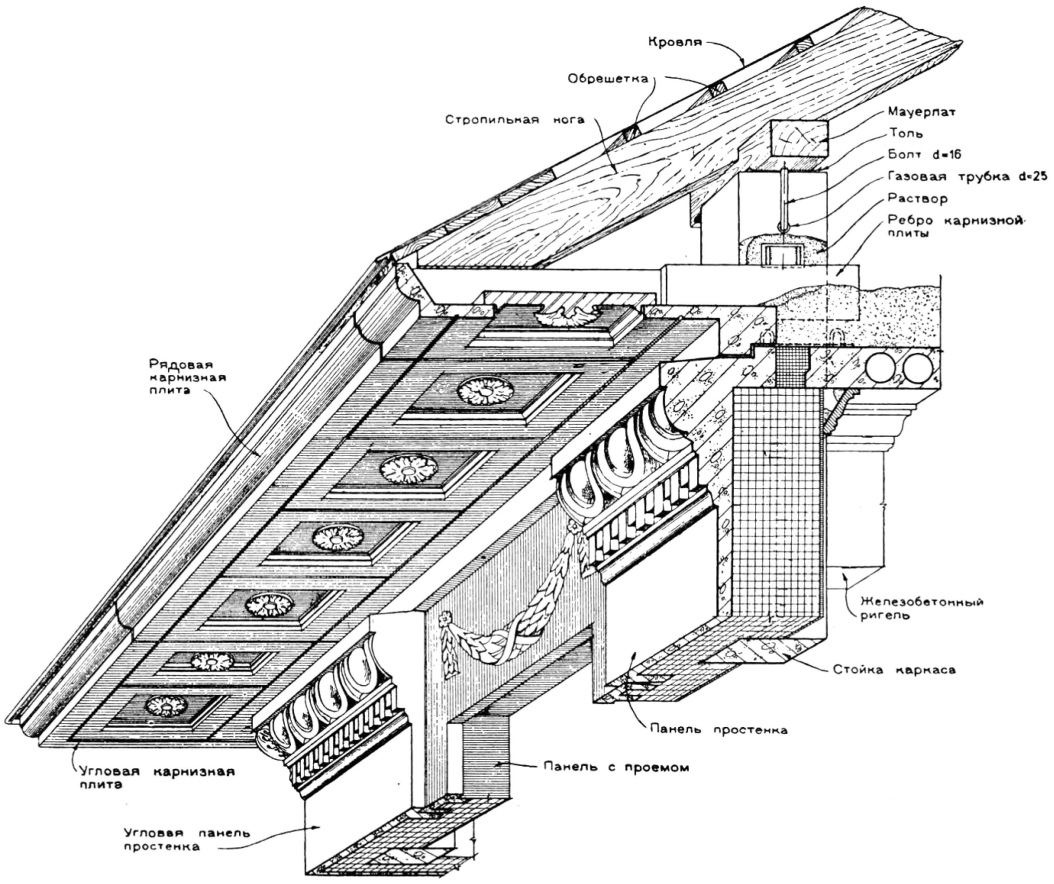


fig. 1 Cornice of the skeletal-panel building, Khoroshevskoe Chaussée, Moscow, 1948–1951. Source: G. Kuznetsov, N. V. Morozov, and T. P. Antipov, *Konstruktsii mnogoetazhnykh karkasno-panel'nykh i panel'nykh zhilykh domov* (Moscow: Izdtael'stvo literatury po stroitel'stvu i arkhitekture, 1956)

in 1956, *Konstruktsii mnogoetazhnykh karkasno-panel'nykh i panel'nykh zhilykh domov* (The construction of multistory skeletal-panel and panel residential buildings) specified the integration of the cornice and prefabricated building systems in lucid detail. Plate VI-3 delineates the cornice used by Mikhail Posokhin and the engineer Vitallii Lagutenko in a residential development on Khoroshevskoe Chaussée in Moscow, built from 1948 to 1951. **fig. 1** A cutaway perspectival view shows the relationship between concrete wall panels, the pillars of the concrete frame, the roof structure, and even the interior of the building. A compound profile, the cornice is composed of a cyma reversa, soffit with drip, corona, and cyma recta. Georgii F. Kuznetsov, the book's lead

author, was a doctor of technical sciences, a corresponding member of the Academy of Architecture, and an expert on building technology. Kuznetsov notes, "the cornice is designed in the form of large profiles of thin reinforced-concrete elements at a length of 3.2 meters, equal to the centers of the pillars." [1] The cornice



1 G. Kuznetsov, N. V. Morozov, and T. P. Antipov, *Konstruktsii mnogoetazhnykh karkasno-panel'nykh i panel'nykh zhilykh domov* (Moscow: Izdtael'stvo literatury po stroitel'stvu i arkhitekture, 1956), 28–29.

fig. 2 Project for skeletal-panel building, Institute for Building Technology, Academy of Architecture of the USSR, ca. 1952; cornice detail
Source: G. Kuznetsov, N. V. Morozov, and T. P. Antipov, *Konstruktsii mnogoetazhnykh karkasno-panel'nykh i panel'nykh zhilykh domov* (Moscow: Izdtael'stvo literatury po stroitel'stvu i arkhitekture, 1956)

profiles are fastened to the wall panels with steel fixings and reinforced by a brick course above, which the authors find to be an unsatisfactory solution for anchoring the cornice in a skeletal-panel building. Instead, they urge architects to design cornices with reference to the abilities of the factory producing them and to ensure that they can be anchored to the structural frame directly. The book includes several recommended alternative cornice details developed by Kuznetsov's Institute of Building Technology at the Academy of Architecture, offering improved integration of structure, wall panel, and cornice. **fig. 2** Considered together, this analysis of realized buildings and theoretical recommendations underscores a fundamental, though often overlooked, dimension of Soviet architectural culture in the 1940s and 1950s; namely, that a classical architectural vocabulary paved the way to industrial methods of construction.

The arrival of mass production as an urgent theme for Soviet architects is commonly associated with the reforms Nikita Khrushchev initiated in the mid-1950s. The removal of alleged "excess" architectural ornament has been understood as a pivotal

step toward the industrialization of Soviet architecture. [2] But this narrative, first articulated by Khrushchev himself, needs to be reconciled with the fact that both ornament and structure were already mass-produced in the time of Khrushchev's predecessor, Joseph Stalin. By the early 1950s, in addition to wall panels and structural frames, a variety of elements, including concrete and terra-cotta cornices, pilasters, capitals, and column drums, were commonly produced in factories, demonstrating a complementarity of the classical language with prefabrication in the Soviet system. As architects in the late Stalin era explored the potential impact of new construction technologies — large concrete blocks, panel and frame systems, and structural panels — the cornice emerged as a locus of architectural debate. The tectonics of these new wall systems, many argued, precluded the use of the column and the pilaster as appropriate architectural elements. Instead, the joints (between panels and between blocks) articulating the wall surface and the cornice emerged as key themes for Soviet architects as they sought to develop an architecture of mass production. The cornice — at first mass-produced, subsequently questioned on tectonic grounds, and ultimately derided as an excessive luxury — registers the architectural complexity of mid-1950s Soviet architectural culture. The story of the production and use of this element challenges our understanding of the relationship between design and mass production in the USSR, enabling us to recognize the entanglement of architectural and political rationales. Furthermore, by tracing the fate of the cornice in the Soviet Union, we see that the architects who articulated the aesthetic and tectonic logic for its suppression also, unwittingly, prefigured the redistribution of their own architectural competencies to other actors in the building industry.

During the 1920s, when constructivist and rationalist groups were at the height of their influence, the use of prominent classical elements was the exception, not the rule, in Soviet design culture. Although a few prominent public buildings from the late 1920s exhibited classical tendencies, notably the extension to the State Bank in Moscow (1927–1928) by Ivan Zholtovskii and the Lenin Library (1928–1939) by Vladimir Shchuko and Vladimir Gel'freikh, the cornice and classical elements of design re-emerged fully only in the 1930s. The outcome of the international competition for the Palace of the Soviets (begun in 1932) was a symptom of the Communist Party's renewed interest in managing cultural and artistic affairs. The Party's demand for the "use of both new techniques and the best methods of classical architecture" in the design of the palace challenged Soviet architects to reconcile advanced building techniques and the lessons of classicism. [3]

2 On Khrushchev's intervention into architecture, see Natalya Solopova, *La préfabrication en URSS: Concept technique et dispositifs architecturaux* (Berlin: Dom Publishers, 2020).

3 Sovet stroitel'stva Dvortsa Sovetov, "Ob organizatsii rabot po okonchatel'nomu sostavleniiu proekta Dvortsa sovetov SSSR v gor. Moskve," *Stroitel'stvo Moskvy* 9, no. 3 (1932), 16.

Zholtovskii's House on Mokhovaia Street (1933—1934) was among the most prominent examples of this new, enriched approach to design. fig. 3 Zholtovskii, born in 1867, was a life-long devotee of Andrea Palladio, and the House on Mokhovaia Street pays homage to the Loggia del Capitaniato in Vicenza. Situated on a central Moscow street (one intended to be a route from the Kremlin to the Palace of the Soviets), Zholtovskii's building presents eight colossal columns that support refined composite capitals and a broken entablature. His design proved divisive as soon as it was complete. Viktor Vesnin, a leader among constructivist architects, criticized the use of valuable resources on a bespoke and luxurious design. 4 Others celebrated the high quality of the building's detail, both interior and exterior. Those who admired it stressed the importance of Zholtovskii's working methods: his insistence on overseeing all aspects of construction and finishing and his ability to draw all the necessary profiles for the execution of ornaments. 5 Zholtovskii's decision to use an artificial stone aggregate for the exterior elements and cladding facilitated this "culture of the detail" by enabling much of the delicate work to be completed by hand in workshops before mounting on the walls. While the fabrication of the capitals and cornice elements took place off-site, this was largely accomplished with manual labor and traditional methods.

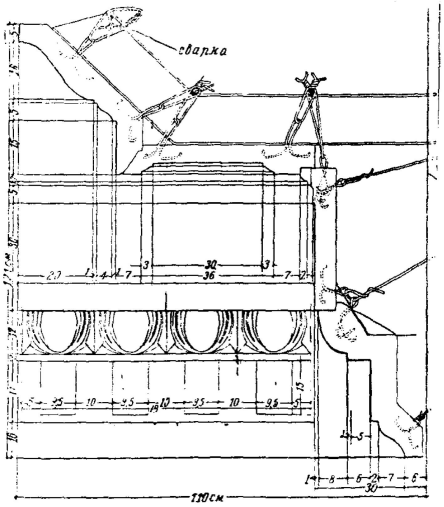
fig. 3 I. V. Zholtovskii, apartment building, Mokhovaia Street, Moscow, 1934; detail of capital and cornice
Source: I. V. Zholtovskii and Ivan Vladislavovich, *Proekty i postroiki. Vstup. stat'ia i podbor illiustratsii G. D. Oshchepkova* (Moscow: Gos. izd-vo lit-ry po stroitel'stvy i arkhitekture, 1955)

4 "Uroki maiskoi arkhitekturnoi vystavki: Tvorcheskaia diskussiia v Soiuze sovetskikh arkhitektorov," *Arkhitektura SSSR* 2, no. 6 (1934), 4—17, here 5.

5 V. Khandros, "Kak dolzhen rabotat' arkhitektor," *Stroitel'stvo Moskvy* 11, no. 6 (1934), 15—17, here 17.

The grandeur and expense of Zholtovskii's House on Mokhovaia Street was symptomatic of an approach to design and construction shared by many Soviet architects at the beginning of the 1930s. The application of classical details, with varying levels of complexity, to a range of building types (apartment buildings, hotels, sanatoria, train stations) produced a diversity of expression in cities across the USSR. This proliferation of ornament had its defenders and detractors, but in the end what attracted the Communist Party's attention were not questions of style but the economics of construction. At the First Congress of Soviet Architects, held in 1937, Gennadii Smirnov, chairman of the USSR's state

planning organization, delivered a scathing critique of architects who inflated construction costs by failing to provide economical and rational solutions. [6] Leading architects such as Aleksei Shchusev and Lev Rudnev faced criticism for alleged "gigantomania" in construction. Smirnov called for a decisive turn away from manual construction practices and toward industrialization. [7] Smirnov's critique, echoed by Moisei Ginzburg and others at the congress, was fully articulated in the programmatic speech by Karo Alabian, chairman of the Union of Soviet Architects. In a wide-ranging discourse on the "Tasks of Soviet Architecture," Alabian touched on topics as varied as "socialist realism" and the "fight for the industrialization of construction." The path toward industrialized construction, he claimed, was fundamentally linked to a "fight against excess" (*bor'ba z izlishestvami*). "The slogan 'fight against excesses' in our architecture means not only a cautious relationship to state resources, but also a fight against false decorativeness and tawdry, unjustified 'luxury,' which are foreign to Soviet architecture." [8]



The pronouncements on industrialized construction made at the congress were tested in practice the following year in a campaign for "rapid construction" (*skorostnoe stroitel'stvo*). In this campaign, the fight against excess (*izlishestva*) entailed not the elimination of ornament outright but rather an attempted reconciliation of new construction methods and the elements of classical architecture. Led by Arkadii Mordvinov, the campaign foresaw the construction of twenty-three apartment buildings in Moscow in the span of just over a year. One typical floor plan would be used for all buildings, and new, industrial "assembly-line" methods were introduced. Two methods of construction were used: brick and "large-block" construction. Mordvinov designed the standard apartment section that all of the buildings used, and he directed the construction of the brick structures, working with the engineer P. A. Krasil'nikov and the architect S. G. Ioffe. The architects Andrei Burov and Boris Blokhin collaborated with engineers from the Moscow Trust for Large Block Construction in their work.

Unlike Zholtovskii's House on Mokhovaia Street, the ornaments deployed in this campaign were factory-made. **fig. 4** The brick buildings on Bol'shaia Kaluzhskaia Street (today known as Leninskii Prospekt) incorporated various prefabricated elements, including floor slabs, balconies, and wall panels, while

6 Scholarship on the First Congress of Soviet Architects has long focused on the denunciation of constructivism, overlooking the discussion of industrialization at the event. See Hugh D. Hudson, *Blueprints and Blood: The Stalinization of Soviet Architecture, 1917–1937* (Princeton, NJ: Princeton University Press, 1993), 185–202.

7 G. I. Smirnov, "Arkhitektura i stroitel'nye zadachi v tret'ei piatiletke," *Arkhitektura SSSR* 5, no. 7–8 (1937), 11–13, here 11.

fig. 4 A. Mordvinov and others, apartment building, Bol'shaia Kaluzhskaia Street, Moscow, 1939; cornice detail
Source: *Soiuz sovetskikh arkhitektorov: Skorostnoe stroitel'stvo—Materialy VI plenuma pravleniia soiuza sovetskikh arkhitektorov SSSR*, 13–16 December 1939 (Moscow: Gosudarstvennoe arkhitekturnoe izdatel'stvo akademii arkhitektury sssr, 1940)

8 K. S. Alabian, "Zadachi sovetskoi arkhitektury," *Arkhitekturnaia gazeta*, June 18, 1937, 2.

the process of bricklaying was accelerated through a "conveyor" system of work. All facade details, including cornice elements, were produced off-site in a terra-cotta factory. Composed of four terra-cotta profiles, the cornice projects 1.1 meters from the facade and is fastened to the brick wall structure by wire ties. Mordvinov had used a similar solution in buildings on Gorky Street in central Moscow, and he lauded the imitation of natural stone in prefabricated architectural elements as a noteworthy achievement. [9] This solution facilitated rapid production and construction due to the reduced weight. But some commentators objected to the simulation of stone in such lightweight cornice profiles. "If the form of these elements imitates 'heavy' stone forms," one critic wrote, "then their artistic expression fails the requirements of rapid construction." [10] Terra-cotta profiles were easy to use, lightweight, and suitable for prefabrication—qualities recognized by architects and builders throughout the world during the previous century. But to some Soviet critics, such profiles appeared to stand in tension with the tectonic logic of masonry construction.

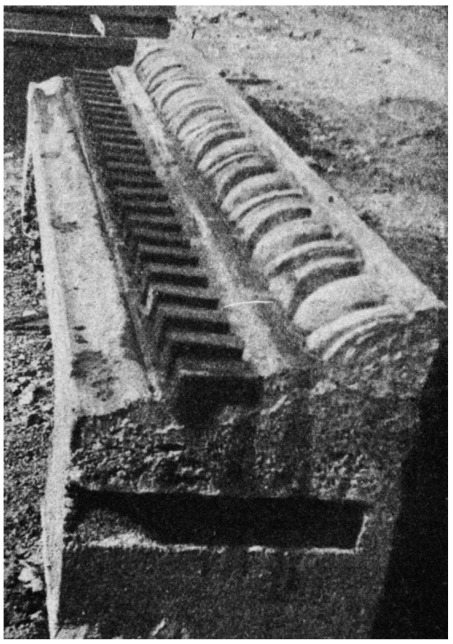


fig. 5 Cornice block. Produced by Taganskii Factory of the Moscow Trust of Block Construction.

9 A. G. Mordvinov, "Opyt skorostnogo stroitel'stva," in *Skorostnoe stroitel'stvo: Materialy VI plenuma pravleniia soiuza sovetskikh arkhitektorov SSSR,* 13–16 December 1939 (Moscow: Gosudarstvennoe arkhitekturnoe izdatel'stvo akademii arkhitektury sssr, 1940), 8.

10 V. Grossman, "Opyt skorostnogo stroitel'stva na B. Kaluzhskoi ulitse v Moskve," *Arkhitektura SSSR* 8, no. 2 (1940), 5–13, here 5.

Parallel experiments in "large-block" construction articulated different relationships among form, structure, and fabrication. As its name suggests, large-block construction refers to the use of large, concrete blocks as primary structural elements. Blocks in load-bearing walls were up to 3 meters long, 1.5 meters high, and 0.5 meter in depth. They could weigh as much as 2.5 tons, which approached the maximum loading capacity of contemporary cranes. While ornament and structure were differentiated in the brick buildings designed by Mordvinov, in large-block buildings they were aligned. Cornices, like blocks for walls, were precast off-site. **figs. 5 and 6** These blocks were monolithic and achieved complex profiles, even incorporating modillions in the casting process. Here, the weight of the load-bearing structure and the mass of the cornice elements correspond. Architects and engineers devised two approaches to integrate the cornice blocks with the structure. One method used the sheer weight of monolithic cornice elements to balance the

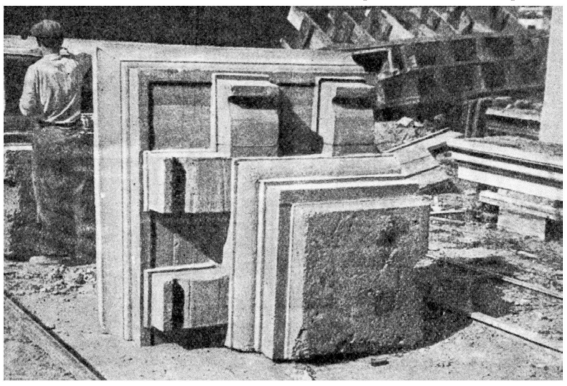


fig. 6 A. G. Klimukhin, hospital, Taganskii District, Moscow, 1937–1939; corner block of cornice
Source: B. N. Blokhin, *Arkhitektura krupnoblochnykh sooruzhenii* (Moscow: Gosudarstvennoe arkhitekturnoe izdatel'stvo Akademii Arkhitektury SSSR, 1941)

load at the top of the wall, as seen in A. G. Klimukhin's hospital on Velozavodskaia Street (1937–1939). fig. 7

Burov and Blokhin developed an alternative approach to the cornice in several structures of 1939–1940. Instead of casting a cornice block as a single unit, they subdivided the cornice into several sections: the external profile, blocks with integrated profiles, and, where required, modillions and other details. fig. 8 The uppermost exterior profile is not anchored to the structure with ties but rather held in place by the weight of large blocks that act as ballast on a horizontal flange. Blokhin justified this subdivision of the cornice and the principle of ballast with reference to the structure of the East Portico of the Erechtheion on the Athenian Acropolis. 11 The experiments undertaken by Burov and Blokhin in their buildings on Bol'shaia Polianka and Velozavodskaia Streets demonstrated that the architectural resolution of large-block building required an expansion of the number of elements needed for fabrication. Indeed, the subdivision of the cornice into multiple blocks significantly expanded the nomenclature of components for each building. In total, 170 types of block were fabricated for the building on Velozavodskaia Street.

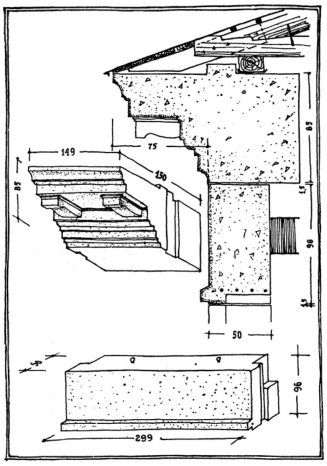


fig. 7 A. G. Klimukhin, hospital, Taganskii District, Moscow, 1937–1939; section of cornice
Source: B. N. Blokhin, *Arkhitektura krupnoblochnykh sooruzhenii* (Moscow: Gosudarstvennoe arkhitekturnoe izdatel'stvo Akademii Arkhitektury SSSR, 1941)

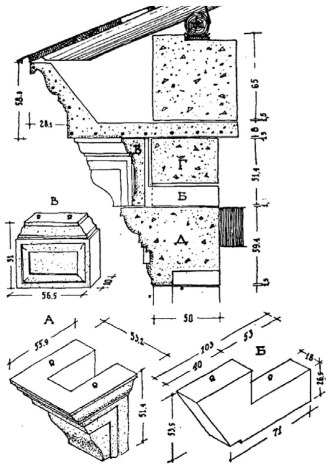


fig. 8 A. Burov and B. Blokhin, large-block building, Velozavodskaia Street, Moscow, 1939; section of cornice
Source: B. N. Blokhin, *Arkhitektura krupnoblochnykh sooruzhenii* (Moscow: Gosudarstvennoe arkhitekturnoe izdatel'stvo Akademii Arkhitektury SSSR, 1941)

While the integration of the cornice into the structural system in Burov and Blokhin's large-block buildings was widely recognized as an achievement, some questioned the tectonic logic underpinning their work. The architect Georgii Borisovskii recognized that the expanding nomenclature of block types would pose problems for the building industry. A key issue was the integration of ornament and structure: the practice of casting pilasters, architraves, cornices, and other forms as integral profiles of load-bearing blocks. Borisovskii made his point with reference to the cornice:

"a cornice at the top of a building requires the following profiled blocks: 1) a basic block, 2) a left corner block, 3) a right corner block, 4) a right 're-entrant' corner block, 5) a left 're-entrant' corner block, and, moreover, 5 to 10 more blocks of different lengths." 12

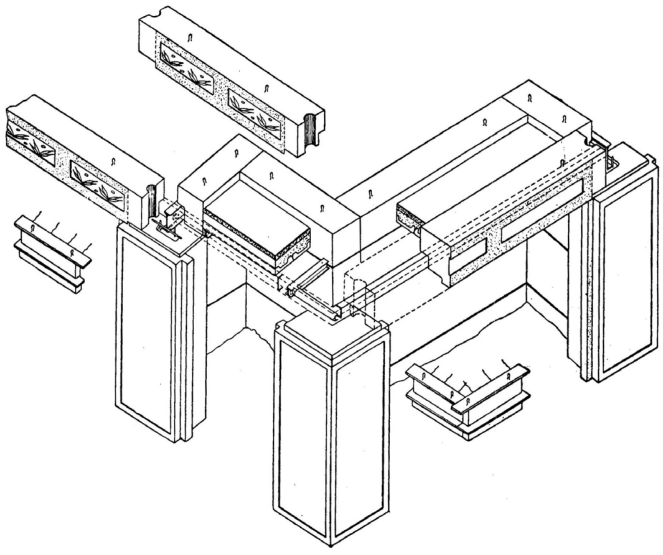
Borisovskii claimed that in some buildings, as much as 50 percent of the types of blocks were so-called architectural blocks. In his view, separating the structural core of the building and its

11 B. N. Blokhin, *Arkhitektura krupnoblochnykh sooruzhenii* (Moscow: Gosudarstvennoe arkhitekturnoe izdatel'stvo Akademii Arkhitektury SSSR, 1941), 84.

12 G. Borisovskii, "Ogranichenie i mnogoobrazie arkhitekturnykh form," *Arkhitektura SSSR* 6, no. 11 (1938), 33–37, here 37.

decorative envelope (*obolochka*) would be much simpler and more economical. To make this point, he drew on Auguste Choisy's finding that Roman builders simultaneously erected and ornamented walls only in exceptional circumstances. [13] This, Borisovskii thought, was sufficient justification for reducing the nomenclature of blocks by creating a set of structural elements and a complementary catalog of "applied details." [14]

Burov and Blokhin rejected Borisovskii's proposition outright and responded to his appeal to Choisy's authority by recalling the words of Eugène-Emmanuel Viollet-le-Duc: "every architecture is derived from structure, and the first condition which this architecture has to fulfill is the congruence of its external form with its structure." [15] Nevertheless, Burov and Blokhin did respond to the problem posed by the proliferation of components in their subsequent large-block building on Leningradskii Prospekt (1940–1941). **fig. 9** They achieved a radical reduction in the number and types of blocks in this building by conceptualizing its structure as a frame rather than a wall. Here, large blocks stand vertically, acting as pillars at each bay around the perimeter of the building. Burov, Blokhin, and the engineer G. Karmanov developed an assortment of blocks that sought to reconcile the assembly of blocks with a classical language. The critical point of tectonic expression is the node formed at each intersection of the structural grid, where the spandrels, joists, and large blocks meet. At these points, simplified pilaster capitals mark the transition from floor to floor and bay to bay. These capital blocks both express transition and articulate the structure by concealing and protecting the joints between elements. The cornice is simple in comparison to Burov and Blokhin's earlier buildings: with a moderate projection, the cornice is deemphasized and composed of only a few block types, achieving greater efficiency through this simplification. **fig. 10** The building on Leningradskii Prospekt was praised for the clarity with which classical principles and industrial technologies were reconciled. One commentator wrote, "here the principle of the construction of the orders is maintained. Every block has a developed form, a beginning and an end, a head and a foot." [16]



13 G. Borisovskii, "Arkhitekturnye vozmozhnosti krupnoblochnogo stroitel'stva," *Arkhitektura SSSR* 7, no. 5 (1939), 9–13, here 13. Choisy's work had been recently translated and published by the Academy of Architecture: Auguste Choisy, *Istoriia arkhitektury*, ed. A. A. Sidorov, trans. V. D. Blavatskii et al., 2 vols. (Moscow: Izd-vo Vsesoiuzoi akademii arkhitektury, 1935); Auguste Choisy, *Stroitel'noe iskusstvo drevnikh rimlian*, trans. A. A. Sapozhnikova (Moscow: Izd-vo Vsesoiuzoi akademii arkhitektury, 1938).

14 Borisovskii, "Arkhitekturnye vozmozhnosti krupnoblochnogo stroitel'stva," 13.

15 Viollet-le-Duc cited in Blokhin, *Arkhitektura krupnoblochnykh sooruzhenii*, 146. Blokhin drew on the recent translation of Viollet-le-Duc's *Entretiens*: Eugène-Emmanuel Viollet-le-Duc, *Besedy ob arkhitekture*, ed. A. G. Gabrichevskii, trans. A. A. Sapozhnikova, 2 vols. (Moscow: Izdatel'stvo Vsesoiuznoi Akademii arkhitektury, 1937–1938).

fig. 9 A. Burov and B. Blokhin, large-block house on Leningradskoe Chaussée, Moscow, 1940–1941; exploded axonometric of structure at one corner Source: drawing from *Stroitel'stvo Moskvy* 17, no. 18 (1940)

16 N. Bylinkin, "Podlinnoe novatorstvo: O novoi rabote A. K. Burova i B. N. Blokhina," *Stroitel'naia gazeta*, June 10, 1940, 2.

World War II disrupted research into large-block and frame structures and made the rapid production of lightweight, low-rise systems a priority for wartime housing. Low-rise, prefabricated timber housing remained a key concern after the war, but by the late 1940s architects and engineers had returned to the problem of multistory housing in urban areas. [17] In parallel with the triumphalist high-rise buildings initiated in Moscow and other cities in the Soviet sphere, experimentation in industrialized housing continued.

After the war, architects and engineers developed new approaches to industrialized building using frame and panel systems. The Academy of Architecture's Institute for Building Technology erected an experimental skeletal-panel building in Moscow in 1947 to 1948. The first large-scale implementation of this approach was undertaken at a site on Khoroshevskoe Chaussée in Moscow from 1948 to 1951. The building system devised by the architects Posokhin and Ashot Mndoiants in collaboration with the engineers Lagutenko and V. A. Shevchenko sought to align the skeletal-panel system with the classical language of architecture. The cornice profiles for these buildings were prefabricated in reinforced concrete. [fig. 1] The integration of the cornice panels recalls the solution that Burov and Blokhin used in their building on Velozavodskaia Street, though Posokhin and his teams substituted brickwork for the large-block ballast that Burov and Blokhin had used. [fig. 8] But the structural facts of these buildings diverged: while the cornice at Velozavodskaia Street terminated the load-bearing wall, at Khoroshevskoe Chaussée the cornice rests on the enclosing wall panels, which are in turn fastened to the load-bearing concrete frame. In this way, the prefabricated cornice elements are integrated into the building system, but, as terminating features of relatively thin wall panels, the tectonic logic they assert is in tension with the frame of the building.

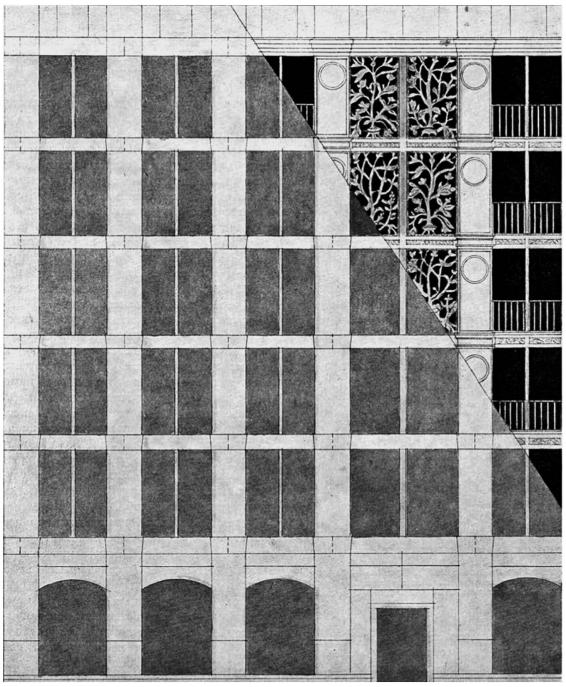


fig. 10 A. Burov and B. Blokhin, large-block house on Leningradskii Prospekt, Moscow, 1940–1941; schematic elevation drawing of the facade with distribution of blocks Source: drawing from *Arkhitektura SSSR* 3 (1953)

Experimental building projects like that at Khoroshevskoe Chaussée were undertaken in cities around the USSR, including Leningrad (today Saint Petersburg), Magnitogorsk, Kyiv, and elsewhere. [18] To explore the potential of skeletal-panel systems,

17 On the development of wartime concerns, see Richard Anderson, "USA/USSR: Architecture and War," *Grey Room* 34 (2009), 80–103.

18 See L. E. Temkin, ed. *Arkhitektura i konstruktsii mnogoetazhnykh krupnopanel'nykh zhilykh domov: Sbornik statei* (Moscow: Gosudarstvennoe izdatel'stvo literatury po stroitel'stvu i arkhitekture, 1954).

Moscow's architecture and planning administration held a competition in 1952 for detailed projects for buildings of eight to fourteen stories. The competition directed further scrutiny at the relationship between the cornice and new building systems. More than twenty projects were submitted, including work from the ateliers of some of Moscow's best-known architects: Mikhail Posokhin, Zinaidii Rozenfel'd, Gel'freikh (a coauthor of the Palace of the Soviets), and Zholtovskii, among others. Many entries dressed the exteriors of their buildings in imitation of masonry buildings: enclosing wall panels were made to resemble pilasters; large, projecting cornices were used both to divide stages of the building mass and to terminate the structure; some projects included pediments and decorative friezes at various levels. The architect V. I. Bogomolov criticized the projects that used false pilasters (*piliastry-nakladki*) to create the appearance of a thickened wall." fig. 11 "In this way," he wrote,

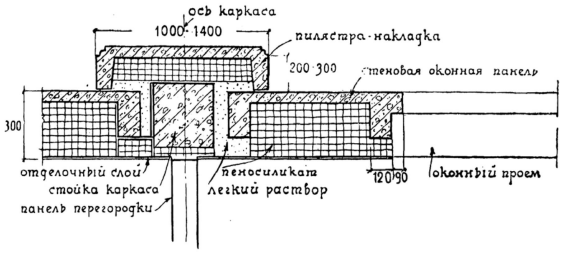


fig. 11 SAKB (Special Architecture-Construction Bureau) and Institute of Building Technology, Academy of Architecture, joint of pilaster and panel Source: drawing from *Arkhitektura SSSR* 7 (1953)

"a wall is formed that is nearly as thick as a brick wall. Such a technique clearly contradicts the creative principle of thin panel walls with effective insulation. The architecture of such buildings is no different from the architectural form of brick buildings." 19

The competition prompted Zholtovskii to make a rare statement about his approach to design. In a short essay, entitled "On several problems of large-panel construction," he addressed some of the issues that Bogomolov criticized:

"The question of the joint [styk] *between wall panels is very important. Some architects make this problem unnecessarily complicated. The fear of an open joint* [shov] *leads them to introduce superfluous* [lishnie] *details, masking the joint between panels. These applied elements are structurally unnecessary, lead to an unjustified waste of material, and limit the artistic possibilities of the architect."* 20

Why, Zholtovskii asked, should architects conceal joints with false pilasters? Surely, he continued, fear of an exposed joint was no reason to imitate the forms of masonry ina large-panel building. The competition project submitted by Zholtovskii's team stood out from the rest: unlike other competitors, he avoided the use of decorative elements or even surface relief on the facade of his building. fig. 12 His project celebrated what he called the "neutral surface" of the body of the building that was composed of "smooth panels, free from applied

19 V. I. Bogomolov, "Itogi pervogo tura proektirovaniia krupnopanel'nykh domov," *Arkhitektura SSSR* 7 (1953), 7–10, here 10.

20 I. V. Zholtovskii, "O nekotorykh printsipakh krupnopanel'nogo domostroeniia," *Arkhitektura SSSR* 7 (1953), 4–6, here 4.

fig. 12 Ivan Zholtovskii with N. Sukoian, project for a skeletal-panel building, Moscow, 1953; perspective drawing / watercolour
Source: drawing from *Arkhitektura SSSR* 7 (1953)

architectural form." [21] The details of the connections between panels demonstrate the smooth but articulated surface of Zholtovskii's building. [fig. 13] Ornament is restricted to the attic, and Zholtovskii deliberately avoided the use of a cornice.

Responding to Zholtovskii's submission, Bogomolov noted that, while some entries had incorporated complex projecting cornices, he believed such elements were inappropriate to the relatively thin walls characteristic of panel construction. "In the construction of multistory panel buildings," Bogomolov wrote, "it is more correct to use flat roofs (with internal drains) and to complete the attic story with friezes and parapets, as openwork or as balustrades." [22] Zholtovskii's project was exemplary in this regard: he focused ornament almost exclusively on the attic story, adopted a decorative parapet, and suppressed the projecting cornice altogether.

Two interrelated themes emerged from the competition for multistory panel buildings: the tectonic expression of skeletal-panel construction and the question of architectural ornament. As critics noted, Zholtovskii reconciled the structural logic of the panel with architectural form through a reappraisal of the constraints of the means of construction, recalling, to a certain extent, the propositions previously made by Borisovskii. By segregating ornament and panel, Zholtovskii sought to facilitate the rapidity and industrial capacity of panel construction. The elimination of the cornice, and its substitution with a decorative parapet, offered a further attempt to adjust a classical architectural language to industrial techniques. But, as Zholtovskii recognized, this also raised the theme of the articulation of wall panels as a fundamental concern for architectural design. The architect K. Zhukov recognized this in an essay entitled "The Form of Prefabricated Elements and the Problem of the Joint in the Architecture of Large-Panel Buildings." Zhukov noted that, while architects would continue to explore the articulation of joints (*stykovanie*) and the detailed manipulation of their seams, these were secondary tasks. The real challenge was "the development of forms for wall panels and systems for the division of large-panel walls, which respond both to artistic requirements for the creation of contemporary residential buildings, and not only in a constructive or a technological sense." [23] The architectural problem posed by panel systems was not ornament but how to design and articulate the technical components that made up the "neutral surface" of the wall. When exposed to the scrutiny of architects and engineers, concerns about the integration of the cornice in panel structures were displaced by research into the question Zholtovskii had identified: the question of the joint.

21 Zholtovskii, "O nekotorykh printsipakh krupnopanel'nogo domostroeniia," 4.

22 Bogomolov, "Itogi pervogo tura proektirovaniia krupnopanel'nykh domov", 10.

23 K. Zhukov, "Forma sbornykh elementov i problema shvov v arkhitekture krupnopanel'nykh zdanii," *Arkhitektura SSSR* 7 (1953), 26–28, here 28.

This did not mean that the cornice disappeared from the facades of Soviet buildings. Along with the full vocabulary of classical elements, the cornice continued to be used in many contexts. Nevertheless, the conceptual displacement of the cornice in the realm of industrialized building represented a significant discursive shift, for it was the outcome of a specific tectonic logicthat architects had been pursuing for years. The conclusions drawn by Zholtovskii and others would also become inextricably entangled with the USSR's policy on architecture and construction. Just over a year later, in December 1954, "excess" architectural ornament became the focal point of Khrushchev's efforts to reorient Soviet architecture and the building industry. Responding in part to attacks levelled at Soviet practice by the architect Georgii Gradov in the preceding months, Khrushchev used his speech at the All-Union Conference of Builders to criticize architects for regularly specifying so many kinds of "unnecessary ornament" that builders had difficulty executing their designs. [24] The cornice did not feature in Khrushchev's speech; instead he called upon architects to use "good proportions" for the building mass, window and door openings, and the "honest delineation of the parts and sections of walls in large-block and large-panel construction." [25] He, too, recognized that the unresolved problem for industrial construction revolved around the question of the joint. In the aftermath of the All-Union Conference of Builders, the Academy of Architecture was transformed into the Academy of Architecture and Construction, lending increased authority to research into building technology. The material basis for industrialized construction would expand rapidly in the ensuing years. [26] The question of the joint mobilized a tectonic logic that facilitated this process, granting increased agency to engineers and technicians. By posing the question in these terms, Soviet architects had unwittingly and on aesthetic grounds enabled the building industry's assimilation of architectural precepts and architectural competencies. The elevation of construction technology to the dominant theme in Soviet architecture was thus more than a politically motivated paradigm shift. It was also an architectural project—one whose history is revealed by a shift from the cornice to the joint.

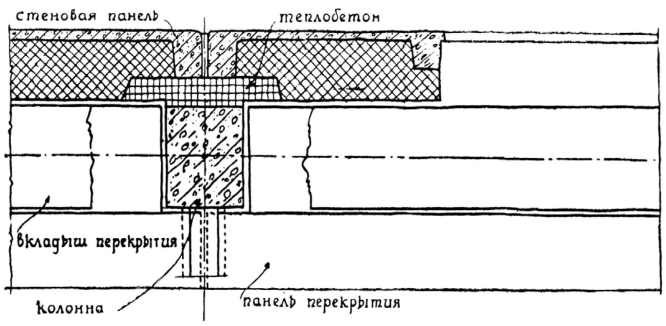


fig. 13 Zholtovskii atelier, vertical joint of wall panels without pilasters
Source: drawing from *Arkhitektura SSSR* 7 (1953)

24 N. S. Khrushchev, "On Wide-Scale Introduction of Industrial Methods, Improving the Quality and Reducing the Cost of Construction," in *Khrushchev Speaks: Selected Speeches, Articles, and Press Conferences, 1949–1961*, ed. Thomas P. Whitney (Ann Arbor: University of Michigan Press, 1963), 153–92, here 167. As Natalya Solopova recognized, Zholtovskii was spared virtually all direct critique in this process. See Solopova, *La préfabrication en URSS*, 68.

25 Khrushchev, "On Wide-Scale Introduction of Industrial Methods," 172.

26 See Philipp Meuser and Dimitrij Zadorin, *Towards a Typology of Soviet Mass Housing: Prefabrication in the USSR, 1955–1991* (Berlin: Dom Publishers, 2015).