

20
5

OTS: 60-11,569

JPRS: 2594

6 May 1960

SELECTED TRANSLATIONS ON THE SOVIET CONSTRUCTION AND
BUILDING MATERIALS INDUSTRY -- No 11

DISSEMINATION STATEMENT X
Approved for public release
Distribution Unlimited

DTIC QUALITY INSPECTED 2

RETURN TO MAIN FILE

Distributed by:

OFFICE OF TECHNICAL SERVICES
U. S. DEPARTMENT OF COMMERCE
WASHINGTON 25, D. C.

Price: \$0.75

U. S. JOINT PUBLICATIONS RESEARCH SERVICE
205 EAST 42nd STREET, SUITE 300
NEW YORK 17, N. Y.

19980109 035

JPRS: 2594

CSO: 2800-N/11

SELECTED TRANSLATIONS ON THE SOVIET CONSTRUCTION
AND BUILDING MATERIALS INDUSTRY -- No 11

	<u>Table of Contents</u>	<u>Page</u>
1.	Basic Trends in the 1960 Plan for the Introduction of New Technology	1
2.	Production of Precast Reinforced Concrete Elements to be developed and Perfected	7
3.	Industrialization of Construction in the Light of the Decisions of the 21st Party Congress and the June 1959 Plenum of the Central Committee CPSU	9
4.	Toward a New Upsurge of the Glass and Ceramics Industries	11
5.	Housing Construction Through Use of Fully-Fabricated Components	13

1. Basic Trends in the 1960 Plan for the Introduction of New Technology

This is a translation of an article in *Stroitel'nyye Materialy* (Building Materials), No 1, no per, Moscow, January 1960, pages 1 - 3.7

...A resolute and bold introduction of new technology, over-all mechanization and automation of production processes, broad use of new progressive materials, products and structures, and considerable increase in the role of science in the practical activities of industrial enterprises -- all these characteristic features of the Seven-Year Plan are also indispensable prerequisites for its successful implementation. Therefore precisely those tasks regarding the raising of the technological level of industry have currently become centers of attention and are included as organic component parts of the confirmed national economic plans, which also include the mandatory indexes of output volume, rise in labor productivity, and decrease in production costs.

The basic trends in the 1960 Plan for the Introduction of New Technology into the Building Materials Industry are:

1. Organization of the production of new, efficient materials, products, and structures;
2. Realization of a complex whole of measures for promoting mechanization and automation of production, primarily with regard to the most labor-consuming and arduous processes;
3. Introduction of new technological processes and high-productivity equipment;
4. Solution of the principal scientific-research problems.

The present year should become the year of the creation of a broadly developed mass production of sets of parts for large-panel housing construction based on the use of fully prefabricated components. Pursuant to the confirmed plan, in 1960 it will be necessary to produce a sufficient quantity of reinforced concrete, vibrated-brick and asbestos-cement panels to ensure the creation of 7.2 million square meters of dwelling area. The use of such panels, instead of bricks, will make it possible to reduce the weight of one square meter of wall by 60-80 percent, to reduce the labor input of the related operations 10-12 times, and to cut the costs of erecting the walls by 20-25 percent. It is necessary to organize on a broad scale the production of lightweight, reinforced concrete structures for industrial and

agricultural construction, which will make it possible to increase considerably the prefabricability of production buildings, which as yet is only less than half as high as that of residential buildings.

In Uzbekistan, Georgia, Azerbaydzhan, Latvia, Kirgiziya, and Moldavia, plans provide for establishing from the ground up the production of mineral wool articles, most of which will be designed for heat-insulating the panels of exterior walls. The interests of the national economy demand that the problems of an omnilateral expansion of output and improvement of quality of heat insulation materials become a focus of attention to sovnarkhozes and local party and Soviet organizations. The importance of this matter is illustrated by the following figures alone: one cubic meter of mineral-wool insulation weighing 150-200 kg and costing 120-135 rubles equals in thermal resistance one thousand bricks weighing over three and one half tons and costing 200-250 rubles, and the weight of one square meter of attic ceiling structure is reduced by 200-250 kg when its slag filling is replaced by mineral-wool filling.

In a number of the economic rayons the production of one of the lightest concrete aggregates -- inflated perlite -- will commence in 1960. That aggregate can be used as the basis for obtaining diverse heat-insulating and sound-absorbing cement-perlite and gypsum-perlite mortars and very lightweight concrete and silica products. The perlite-concrete panels produced by the conventional procedure and having a volume weight of approximately 800 kg/m^3 , have proved to be sufficiently strong (50 kg/cm^2) and to display excellent thermotechnical indexes.

Of great importance to progress are the plan-set targets for the production of new synthetic materials. The production of glass-plastics in the form of sheets measuring as much as 1.2 x 2.5 meters in area and 0.8 to 1.5 mm in thickness is being organized. The upper layers of such sheets, onto which a decorative paper is pressed, simulates the appearance of valuable tree species, stones, textiles. The enterprises of Moscow, Kiev and other cities will considerably expand their output of colored polystyrene tiles by the method of casting under pressure. Such tiles are nearly five times lighter in weight than ceramic tiles, and much less expensive. The production of such tiles by serially manufactured automatic machinery can be organized in the free spaces of the existing enterprises with minimal capital investments. Also in the offing is the use of plastics as basis for the production of "pogonazhnikykh" articles (plinths, handrails), and hardware, and bathroom and

plumbing fixtures as well, which will serve to reduce substantially the consumption of nonferrous metals. Extra-lightweight heat insulation articles based on synthetic raw materials (of the type of styrene-foam sheets, "stiropor" [porous styrene plastic], and others).

The 1960 Plan envisages the establishment of the industrial production of asbestos-cement pipe based on sandy cement with autoclave processing. Such pipe endures pressures of as much as 15-20 atmospheres, and displays resistance against the aggressive solutions which usually erode both the asbestos-cement pipe based on portland cement and the steel or reinforced-concrete pipe.

The Plan for the Introduction of New Technology in 1960 envisages, on the basis of the decisions of the June 1959 Plenum of the Central Committee CPSU, a vigorous expansion of the work on the mechanization and automation of production processes in the leading branches of the building materials industry. In the offing is an over-all mechanization of production in three cement plants and the raising of the annual output of cement per worker to 2,000 tons, i. e., to the level of the best foreign enterprises.

The work on over-all mechanization should be completed this year in 34 quarries of nonmetallic mineral raw materials with an aggregate annual volume of output amounting to nearly 17 million cubic meters. This, in addition to the 200-250 percent rise in labor productivity, will make it possible to improve drastically the quality of nonmetallic mineral raw materials delivered to construction sites and precast reinforced concrete plants, because of the envisaged concurrent introduction of the washing and grading of output.

For the enterprises of the slate industry, the 1960 plan envisages the full completion (as a complement to the work carried out in 1959) of the mechanization and automation of the processes of the production of roofing slate on 19 technological lines. As was revealed at a conference of the workers of the slate industry, convened at the end of the last year in Kiev, the enterprises of that industry have real opportunities for not only fulfilling the stipulated targets but also overfulfilling them considerably, on ensuring the completion in 1960 of the work on the installation and starting of corrugating-molding assemblies in all plants and combines.

The brick and ceramics industry faces the task of carrying out during 1960 the mechanization of the transport, charging and discharging of brick on 115 annular kilns. This will make it possible to facilitate the labor of more than 5,000 workers engaged in arduous physical operations,

inclusive of the work at high temperatures inside the kilns. Moreover, the brick plants should install scores of automatic machines for shearing the raw material from the presses, collecting it and placing it on trolleys.

Many precast reinforced concrete plants plan to introduce the automatic dosing of raw materials which will not only increase labor productivity but also create the conditions for substantial savings of cement.

The 1960 Plan sets ambitious targets with regard to the construction and industrial production of new types of high-productivity equipment. Cementmakers should receive the first new rotary kilns measuring 5 x 185 meters and producing 1,800 tons daily, kilns with conveyer calcinators, equipment for the combined method of clinker production with the dehydration of slurry.

Plans exist for mastering the manufacture of new complete sets of equipment for the production of prestressed ascending pipe, which sets are to be installed in the enterprises of the precast reinforced concrete industry.

Technological lines for the production of mineral-wool tile based on synthetic compounds will be installed in the heat insulation products plants.

Considerable work on the mechanization and automation of labor processes, and installation of new high-productivity equipment, should also be done in the enterprises of the other branches of the building materials industry. It is a duty of machine builders to intensify their work on the designing and construction of up-to-date machinery and mechanisms ensuring the technological refurbishing of plants and quarries.

At the same time it is necessary to end resolutely the definitely abnormal situation created by the neglect and disuse of valuable machinery and mechanisms in many enterprises. This pertains in particular to the enterprises of the Kazakh SSR where scores of complete sets of machinery and mechanisms for the production of wall materials and precast reinforced concrete, as well as for the extraction and processing of nonmetallic mineral raw materials, have long been idle. A number of plants in the RSFSR have left idle the presses for the production of ceramic tile, various machines for slate production, and the like.

Of paramount importance to improving all technical-economic indexes of operation of the existing industrial enterprises is the perfecting of technological processes, and introduction of more intensive regimes of operation of equipment and pace-setting methods of the organization of production.

The 1960 Plan foresees the widespread mastering of the economical method of obtaining cement by using slurry concentrators reducing by nearly one half the consumption of heat per kilogram of roasted clinker. This method should be introduced in five kilns of the plants in the RSFSR, two kilns in the Ukraine, two in Belorussia, and one in Tadzhikistan.

To purify the waste gases of rotary kilns, drying drums and the air intake of grinding mills, a number of cement plants should install and activate electric filters. It can no longer be overlooked that the cement industry is sustaining sizable losses because of the lack or poor performance of dust-collecting devices, insufficient hermetization of intrashop transport and, in a number of cases, infraction of the technological regime of operation of principal assemblies. These losses, as indicated by calculations, amount to approximately 1.4 million tons of cement a year or, in other words, nearly four million tons of prepared raw material and approximately 300,000 tons of fuel. It is time for placing an end to such waste.

The broadest popularization is deserved by the experience gained by a number of cement plants in introducing mineralizers, and especially fluorine and fluosilicate salts, into the composition of the raw batch. This increases kiln productivity by eight to 10 percent and simultaneously reduces heat consumption by five percent. This alone provides the possibility for increasing the output of cement in the existing plants in 1960 by an additional 500,000 tons, more or less.

A considerable technical and economic effect can be gained by the existing plants of structural ceramics through the introduction of the saggerless roasting of Metlach tile, and single roasting of glazed facing tile.

Many precast reinforced concrete enterprises should construct and activate pressureless curing chambers according to the method of Professor Semenov, for these chambers make it possible to shorten the duration of the heat treatment of products from 12 to eight hours.

The silica brick plants are expected to convert to the use of a steam with higher pressure -- eight to 10 atmospheres -- in their autoclaves, which will make possible a substantial increase in their output and improvement in quality.

The extensive theoretical and experimental research conducted lately by our scientific-research institutes and laboratories has provided the foundation for incorporating into the 1960 State Plan the development of a number of major problems unlocking new, broad prospects for a further

raising of the technological level of all branches of the building materials industry.

The fundamental problems whose solving will concern the scientific research workers are: obtaining cement clinker from red-hot molten slags, working out the technological parameters of the production of superfast-hardening, high-strength cements (grade 1,000-1,100), investigating the processes of the autoclave treatment of large products, uncovering the most efficient methods of omnilateral utilization of the wastes of the asbestos industry, development of the technology of production of building materials and structures from glass plastics, semi-industrial mastering of the method of obtaining glass foam from volcanic rocks, etc!!!!

2. Production of Precast Reinforced Concrete Elements to Be Developed and Perfected

[This is a translation of an article in Beton i Zhel-ezobeton (Concrete and Reinforced Concrete), No 1, no per, Moscow, January 1960, pages 1-2.]

...The solving of the principal goal of the industrialization of construction -- the conversion of construction to a mechanized continuous-flow process of the assembling and installation of buildings and structures of large elements and parts prefabricated in plants -- is assisted by the annually increasing output of precast reinforced concrete. The plan for the production of precast reinforced concrete structures and parts was overfulfilled in 1959. The volume of output of that concrete reached 24 million m³, and in 1960 it will reach 28.8 million m³.

Last year the plan of production of high-efficiency prestressed reinforced concrete structures was also overfulfilled, and the volume of that production reached 2.4 million m³. In 1960 that volume will rise to 3.9 million m³, whereas only five years ago, in 1955, only 75,000 m³ of prestressed structures were produced. It should, however, be noted that in the Kazakh and Uzbek SSRs and for the Ministry of Power Station Construction USSR, for which the volumes of construction are very extensive, the plan of output of prestressed structures in 1959 was not fulfilled.

The premises for a successful development of the production of precast and prestressed reinforced concrete structures in 1960 should be the construction and activation of new enterprises with an aggregate output capacity of 4.7 million m³ of precast reinforced concrete annually, and an improved utilization of the output capacities of the existing enterprises as well.

The construction of enterprises for the production of reinforced concrete structures and parts for large-panel housing construction on the scale of 1.3 million m² of dwelling area commenced in 1959. However, the machine building industry had not delivered all of the equipment needed for this purpose, and the plan remained underfulfilled. The plan for 1960 envisages the activation of enterprises with output capacities sufficient for providing nearly five million m² of dwelling area annually.

The experience in the construction of large-panel residential buildings in many cities of our country during the previous year attests to the opportunities for furthering the technological progress in large-panel housing construction.

A positive appraisal was given to the experience of the Leningrad builders, who have created multilateral housing construction combines whose duties include not only the fabrication of structures and parts of a house but also the installation and complete finishing of such structures and parts directly on construction sites. The creation of teams of designers within the system of housing construction combines will make it possible to conduct work on both the improvement of structures and the technology of their production and installation. This experience should be broadly popularized....

3. Industrialization of Construction in the Light of the
Decisions of the 21st Party Congress and the June 1959
Plenum of the Central Committee CPSU

[This is a translation of an article written by V. A. Kucherenko in Promyshlennoye Stroitel'stvo (Industrial Construction), No 1, no per, Moscow, January 1960, pages 1-2.]

...The implementation of the tremendous volume of capital investments is possible only on the basis of a continuous technological progress, decisive improvement in the organization of activities and raising of the technological level of construction by means of a broad industrialization of construction. Industrialization of construction is the sure means of solving the extensive tasks posed by the Party and State and, in particular, solving these tasks without any sizable increase in the number of workers in the construction industry, which has reached nearly six million persons.

The 21st CPSU Congress has, in its resolution on the Target Figures for the Development of the National Economy of the USSR in the years 1959-1965, pointed out to the workers of the construction industry the paths for solving the following tasks: "to ensure the further broad industrialization of construction," -- and as the said Resolution states -- "to convert construction operations into a mechanized process of the assembling and installation of buildings and structures from units, subunits and parts prefabricated in plants."

The basis for the development of the industrialization of construction is, as is known, precast reinforced concrete. In 1958 the output of precast reinforced concrete structures and parts totaled 18.9 million m³. And approximately the same volume of output has been attained within the first nine months of this year. For comparison, let it be noted that in 1957 the output of precast reinforced concrete structures and parts in the United States totaled approximately 10 million m³, in England -- three million m³, in West Germany -- one million m³, and in France -- 0.6 million m³. By 1965 the planned volume of output of precast reinforced concrete in the USSR will rise to 42-45 million cubic meters. Thus, in its volume of output of precast reinforced concrete structures the Soviet Union has greatly outdistanced all the technologically most advanced capitalist countries, and at present it occupies the leading place in the world.

However, the volume of the use of precast reinforced

concrete structures per million rubles worth of construction and installation operations involved in the erection of industrial buildings and structures amounts to only 75 m³, whereas in residential and communal construction it has already been increased to 200 cubic meters.....

4. Toward a New Upsurge of the Glass and Ceramics Industries

✓ This is a translation of an article in *Steklo i Keramika* (Glass and Ceramics), No 1, Moscow, January 1960, pages 1-3.7

Thus far, in 1959, the glass and ceramics industry has, like all other branches of the national economy, made yet another major stride forward in its development. Compared with 1958, its volume of output has substantially increased, its technological level of production has risen, and new output capacities have been set in operation.

These achievements constitute a solid foundation for fulfilling the plan-set targets for the second year of the Seven-Year Plan. In 1960 the gross output of the glass industry will increase by 8.9 percent compared with the preceding year, and the gross output of the structural ceramics and porcelain and faience industries -- by 12 percent.

Industrial and residential-communal construction in 1960 will be provided with 145 million square meters of window glass -- seven million more than in the preceding year. The output of polished glass will increase by 15 percent in comparison with 1959, reaching 3,825,000 square meters. To improve the architectural appearance of buildings on main roads of Moscow and other cities, the output of plate glass will be considerably expanded in the Saratov and Gomel' glassworks.

A high pace of growth is envisaged for the production of all types of structural and industrial ceramics. Compared with 1959, the output of structural porcelain will increase by 19.7 percent, facing tile -- by 20 percent, flooring tile -- by 16.4 percent, and acid-resistant articles -- by 40.7 percent.

...In the structural and industrial glass industry a major role should be played by an increase in the productivity of the existing glass founding furnaces. The most promising path toward that goal lies in raising the founding temperature of glass. In 1960 the high-temperature regime of glass founding should be introduced in the majority of the furnaces. A successful conduct of this measure will make it possible to increase the output of sheet glass by 10-15 percent.

A powerful factor in increasing the productivity of the existing enterprises of the glass and ceramics industry is the conversion of furnace installations to operation on natural gas and liquid fuel. In 1960 the conversion to

operation on these types of fuel is planned for a great number of enterprises, including the following glass works: Gomel', "Proletariy," Bytoshevskiy, Krasnousol'sk, "Avtosteklo," imeni October Revolution, and ceramics plants: Voronezh, Kudinovskiy, Kineshenskiy, Sverdlovsk, and others.

A prominent place in the plan for the second year of the Seven-Year Plan is given to the organization and development of the production of new and highly effective types of production and the introduction of new and pace-setting techniques and technology.

...The 1960 plan provides for large capital investments for the development of our industry; the execution of these investments will ensure the further growth of output capacities. The over-all yearly increment in the capacities for the output of structural porcelain will amount to 1,125,000 articles; facing tile -- 4,000,000 m², and flooring tile -- 1,500,000 m². New shops for the manufacture of these types of production will be activated at the Kuybyshev, Irkutsk, Sverdlovsk, Stalingrad, and Slavyansk ceramics plants.

At the Saratov Glass Works the construction of a technological line for producing eight million m² of window glass annually will be completed.

...In 1960 construction of three new large glass works will begin -- in Salavatskiy (Bashkirskaya ASSR), with an output capacity of nine million m² of window glass annually, in Pavlodar -- with an output capacity of 16 million m², and in Sumgait (Azerbaydzhan SSR) -- with an output capacity of nine million m².....

5. Housing Construction Through Use of Fully-Fabricated Components

✓This is a translation of an article written by S. Mayorov in *Arkhitektura i Stroitel'stvo Moskvy* (Architecture and Construction of Moscow), No 12, Moscow, December 1959, pages 6-7.✓

The year 1959 is ending. It is already possible to sum up certain results of the activities of the Moscow building materials and structures industry coordinated by the Glavmospromstroymaterialy, ✓Main Moscow Administrations of the Building Materials Industry✓. These results attest that, as before, the construction industry of the nation's capital is continually growing and developing. We need only mention that in the last 10 months the combined gross output of the enterprises of the Glavmospromstroymaterialy has increased by 16 percent compared with a like period in the preceding year. Sizable increases have occurred in the production of high-efficiency lightweight structures, and large parts for prefabricated housing. During these 10 months the following quantities have been produced in excess of the plan: 47,000 m³ of precast reinforced concrete, 15,000 m³ of large blocks, 144,000 m² of partitioning board, 6,000 m³ of keramzit ✓Keramzit = a porous concrete aggregate✓ gravel, 26,000,000 bricks, 155,000 m² of linoleum, and 127,000 m³ of joinery.

The collectives of the enterprises of the Glavmospromstroymaterialy are successfully fulfilling their pledge to implement the yearly plan ahead of schedule. At the same time, they are determinedly preparing to solve the still more complex and responsible tasks of 1960. The principal such task consists in the further development of the Moscow building materials and structures industry, so that it may become vigorous enough to ensure in every way that mass housing construction fully utilizes prefabricated elements and assembles buildings completely from large industrially manufactured parts distinguished by their maximal degree of prefabrication.

The assembling of buildings from prefabricated components is proceeding on an ever-increasing scale in Moscow. This year the share of the housing construction based on fully prefabricated components in the over-all volume of construction has exceeded 15 percent. Next year it will zoom to 50 percent, and in 1961 -- to 80-85 percent. In subsequent years it is expected that the construction of all residential buildings, as well as of administrative, cultural-communal, medical and industrial buildings, will be

completely based on the use of prefabricated components. This is why the industry is expected not only to grow quantitatively but also to change qualitatively to a major extent.

The present time is marked by advances in refurbishing, technological reequipping and modernization of the construction industry. The cardinal purpose of all these activities consists in establishing, on the basis of the existing enterprises and shops (which have hitherto been mainly producing individual precast reinforced concrete elements, wall blocks and minor wall material units), plants and combines that could manufacture complete sets of prefabs for the construction of completely assemblable buildings.

This is being accompanied by conducting measures for increasing steeply the output of the heat insulation materials needed for manufacturing high-efficiency, thin-walled panels and other articles complementing the prefabricated building.

In 1960 the enterprises of the Glavpromstroyaterialy face the task of producing a number of parts for the construction of completely assemblable buildings -- a number sufficient for constructing more than 1,600,000 m² of dwelling area and 163 cultural-communal buildings. Moreover, through the technological refurbishing of enterprises and their further specialization and broader inter-industry cooperation, we stand to increase the capacities for the output of high-efficiency prefabricated structures and parts to a level ensuring the construction of residential, educational, medical and other buildings with an area aggregating approximately four million m² annually.

The yearly plan for the activation of output capacities and production of prefabs for fully assemblable housing construction is presented in the following form (in thousands of m² of area):

Type of House	Output Capacity by 1 January 1961	Production in 1960
Large Wall Blocks for Residential Buildings, Schools, Dormitories of Boarding Schools, and Other Buildings	850,000	830,000
Large-Panel Keramzit-Concrete Buildings	750,000	400,000
Slot-Mold Type Buildings	650,000	300,000
Buildings from Rolled Parts	350,000	100,000
Vibrated Brick Buildings	1,100,000	300,000
Panels and Structures for Indus- trial Buildings	200,000	
Total	3,900,000	1,930,000

One of the high-efficiency types of fully prefabricated components is the interior and exterior panels produced by the slot-mold method. Their advantages consist in a high degree of prefabrication, low weight, and adaptability for mass production. Next year the Housing Construction Combine No 1, in cooperation with the Rostokinskiy Slot-Mold Products Plant, will prefabricate not less than 100 houses with a combined area of 200,000 m², and in 1961 it will produce daily enough parts for an entire five-story building. It is characteristic that that Combine exercises interproduction cooperation: one department forms interior wall panels in slot molds, while another department forms (on a conveyer) exterior wall panels.

Slot-mold production has also been developed at the Reinforced Concrete Products Plant No 12. In 1960 it will produce 40 buildings with a combined dwelling area of 100,000 m². But this is not the limit for that plant -- by 1 January 1961 its output capacity will be raised to 150,000 m² of dwelling area.

The enterprises of the Glavmostroyprommaterialy are producing prefabricated components on an ever larger scale by the method of continuous vibration rolling suggested by Engineer N. Kozlov. They have already installed 15 rolling mills for the production of reinforced concrete panels for exterior and interior walls, floors, and roofs.

In 1960 four rolling mills (at the Kuntsevsk Combine and at the Reinforced Concrete Structures Combine No 2)

will produce wall panels, four other rolling mills (at the Reinforced Concrete Products Plant No 6 and at the Vostryakovskiy Combine) will produce floor panels, and another five rolling mills (at the Reinforced Concrete Products Plant No 4, Moscow Housing Construction Combine No 1, and Kutsevsk Housing Construction Combine) will produce roof panels.

The output of these rolling mills will suffice for the construction of 47 complete five-story houses aggregating 100,000 m² of dwelling area, and for the roofing of buildings aggregating about three million m² in dwelling area. Moreover, the rolling mills will produce rolled floor slabs for complementing vibrated-brick buildings with a dwelling area aggregating 160,000 m².

The enterprises of the Glavmospromstroymaterialy have already decided to install an additional 12 rolling mills in the course of this year, but in all likelihood this figure is not the limit. At present, the possibility of installing yet another battery of rolling mills is being explored. This would make it possible to build houses from rolled elements with an aggregate dwelling area of hundreds of thousands of m² annually, to satisfy completely the demand of Moscow building sites for rolled roof slabs and, by the same token, to abandon the use of metal roofing, as well as to organize the production of rolled panels on a scale ensuring the complete provision of such panels to houses with vibrated-brick walls.

As is known, the construction of residential buildings from high-efficiency keramzit-concrete panels is widely practiced in Moscow. In the coming year, the Reinforced Concrete Structures Combine No 2 will, in cooperation with the Reinforced Concrete Products Plant No 5, produce complete sets of structural components for not less than 100 such buildings with a dwelling area aggregating 250,000 m², while the Plant No 10 will, in cooperation with the Plant No 4, produce such sets for not less than 40 such buildings with a dwelling area aggregating 150,000 m².

The production profile of the brick plants is changing drastically. The workers of this oldest branch of the construction industry are expected to develop broadly in their enterprises the already commenced production of large vibrated-brick panels, and to expand in 1960 the related output capacities to an extent which will make it possible to produce enough panels of this type for 550 buildings with a dwelling area aggregating 1,100,000 m². In particular, the Beskudnikovskiy Ceramics Plant should produce vibrated-brick panels for 200 buildings with a dwelling area aggregating 390,000 m²; the Lyubertsy and Korenevskiy silica brick

plants -- for 180 buildings with area aggregating 360,000 m²; the Ochakovskiy Brick Plant -- for 45 buildings with area aggregating 90,000 m²; and the Losinoostrovskiy Brick Plant -- for 45 buildings with area aggregating 90,000 m², etc.

Of great importance to developing the production of vibrated-brick panels and to an intensive utilization of capacities will be the intended specialization of the plants. Thus, the production of vibrated-brick exterior wall panels is expected to be concentrated at the Lyubertsy and Korenevskiy silica brick plants and at Shop No 9 of the Beskudnikovskiy Plant, while the production of interior wall panels will be concentrated at the Ochakovskiy Plant, in shops No 1 and 10 of the Beskudnikovskiy Plant, and in certain other enterprises.

In addition to the increase in the degree of prefabricability of buildings, the use of vibrated-brick panels in lieu of separate bricks will reduce by several times the consumption of brick per square meter of dwelling area, and it will ensure, as well, a drastic reduction in the weight of buildings, in labor expenditures, and in construction costs.

In connection with the further expansion of the annual volume of housing construction based on fully prefabricated components as planned in the future, the development of the production of keramzit-concrete, vibration-rolled, vibrated-brick and slot-mold panels will be accompanied by developing the production of other progressive structural components as well. Thus a large plant now under construction will commence producing asbestos-cement panels. As a result of the partial freeing of capacities for the production of silica brick, the manufacture of reinforced silica panels will commence in existing facilities of the Lyubertsy and Korenevskiy plants, thereby assuring a substantial reduction in the consumption of cement in housing construction.

In the production of large, fully prefabricated components for housing construction considerable attention is given to reducing the wall thickness. In particular, the enterprises are converting from the production of keramzit-concrete panels 40 centimeters thick to that of panels 32 centimeters thick. The thickness of large wall blocks is also being reduced -- from 50-55 to 40 centimeters.

The development of the construction of fully prefabricated houses and the expansion of the output of high-efficiency lightweight structures require a substantial rise in the capacities for the production of keramzit gravel and diverse heat insulation materials. In this connection, the plans for the new year envisage the production of 320,000

m³ of keramzit gravel compared with 200,000 m³ in 1959 -- the Lianozovskiy Plant alone will produce 275,000 m³. The second battery of the keramzit gravel shop is being activated at the Lianozovskiy Housing Construction Combine, where the first battery was activated in 1959 and 180,000 m³ of keramzit gravel were produced in 1959.

The combined capacity of enterprises for the production of keramzit gravel should rise to one million m³ in the next few years, for which purpose special shops are being built at the Reinforced Concrete Structures Combine No 2, Losinooostrovskiy Brick Plant and Beskudnikovskiy Ceramics Plant.

Thanks to the mastering of the production of keramzit gravel with a volume weight of 300 kg/m³, it became possible to organize the production of panels with a volume weight of not more than 900 kg/m³.

The production of heat insulation materials and products is proceeding at a fast pace. Steps are being made to mass-produce mineral wool and mineral-wool products, glass wool, cement fibrolite, gas-silica, "Stiropor," and a number of other materials.

In 1960 the Kuchinskiy Plant will furnish to builders 45,000 m³ of glass foam, the Lianozovskiy Plant -- 85,000 m³ of keralite foam, the Pavshinskiy Plant -- 50,000 m³ of fibrolite and 57,000 m³ of mineral wool in the form of board and mats, the Mytishchinskiy Plant -- tens of thousands of m² of "Stiropor." Moreover, the Mytishchinskiy Plant, now converted to the Combine of Synthetic Building Materials and Products, will supply the construction of prefabricated and other types of buildings with such plastic materials as linoleum, handrails, plinths, hardware, etc.

The lumber-processing enterprises of the Glavmostroyprommaterialy will supply the construction of prefabricated and other buildings with wood components. In particular, in the coming year they will have to produce 2,400,000 m² of window and door blocks compared with 2,050,000 m² in 1959. The production of compact-design doors is rapidly increasing.

At present the lumber-processing enterprises are undergoing a radical technological overhauling, expanding their production space and installing new technological lines. The DOK No 3 /Lumber Processing Combine No 37 is completing the construction of a five-story building for housing the new automatic continuous-flow lines for the production of door and window blocks. The same Combine is also building a shop for the production of wood-shavings board, which will find application as an insulating and facing material and as structural elements for furniture. By the end of the new

year the DOK No 4 will activate a shop for the production of five million m² of wood-fiber board annually. The DOK No 13 is building plywood and parquet shops. The DOK No 6 is installing a continuous-flow line for the production of 600,000 m² of paneled doors annually. The same DOK will also be provided with a semiautomatic continuous-flow line for the production of paired window blocks, having the capacity of 500,000 m² a year.

Altogether, in 1960 the lumber-processing enterprises will complement their existing 24 semiautomatic continuous-flow lines with another 15 such lines.

The structure of the production of precast reinforced concrete will change radically. While until lately reinforced concrete elements were produced by enterprises mainly for brick buildings (hollow floorings and floor slabs, foundation and basement-wall blocks, crossbars, etc.) -- about 90 percent of the entire output of precast reinforced concrete was used for this purpose -- at present the mass production of various panels (rolled, slot-molded, keramzit-concrete) for the construction of fully prefabricated houses is under way.

The broadening of the variety of structures for residential and cultural-communal construction is being accompanied by a rise in the output of precast reinforced concrete for industrial enterprises and engineering structures as well.

The output of girders and beams with spans of as much as 18-24 meters is being raised to a level sufficient to satisfy completely the needs of Moscow. Such girders and beams are needed in the construction of industrial buildings, ascending and other pipes, pilings, collectors, lampposts, poles of electric transmission lines, and other structures. By the same token, the sphere of applications of precast reinforced concrete will be still further expanded.

It should be noted that the organization of the production of nearly all of the above-mentioned types of reinforced concrete has required but small capital investments. It is being conducted by utilizing existing production space or by expanding the existing enterprises.

The plans for the new year envisage the output of over 800,000 m³ of prestressed reinforced concrete structures, which will save not less than 15,000 tons of steel. All the products for which this is expedient are currently being manufactured in the prestressed form.

The output of large slag-keramzit-concrete wall blocks is rising. In 1960 the plants No 20 and 21 will, in cooperation with the Krasnopresnenskiy Building Materials

Combine and the reinforced concrete products plants No 6, 11 and 15, manufacture parts for 270 residential buildings with a dwelling area aggregating 475,000 m², 136 buildings for schools and boarding homes, and 27 hospital and other buildings.

Subsequently, the large blocks plants are expected to convert to the production of keramzit-concrete panels, which will ensure an additional reduction in the consumption of materials and rise in the degree of prefabricability of buildings.

A great deal of work is being done on the modernization of the nonmetallic mineral raw materials industry, without whose further development the solving of the problem of producing effective reinforced concrete structures for prefabricated housing would be inconceivable.

Many processes in the enterprises of that industry are being mechanized and automated. The Rozhdestvenskaya Crushing-Sorting Plant has been opened on a semiautomated and mechanized basis. New large quarry administrations -- Drovinskoye and Vyazemskoye -- are being constructed, while the existing ones -- Terelesovskoye, Khomyakovskoye, and others -- are being overhauled. The extraction of special clays for keramzit gravel is being organized.

The production of fractionated materials is rising steeply. The total conversion of enterprises of the non-metallic mineral raw materials industry to the production of fractionated rubble and gravel alone is already under way and will be completed in 1962. In this connection the output of the finer fractions of rubble and gravel will increase 2.2 times compared with its 1958 level.

The transition to the construction of fully prefabricated housing in Moscow should ensure a drop in the costs per square meter of dwelling area to 1,000-1,200 rubles in the course of 1960-1961.

The reduction in construction costs is a common task of builders, workers of the building materials industry, and designers. The collectives of the enterprises of the Glavmospromstroymaterialy are making a significant contribution to the solving of this task. As a result of the reduction alone in the sales prices of brick, ceramics products and joinery and certain other types of production, decreed on 1 January 1960, the Moscow builders will gain real savings totaling over 100 million rubles. Moreover, the Glavmospromstroymaterialy is working on proposals for cutting the prices of a number of other products also, which would assure the builders of an additional 40 million rubles in annual savings. In the period that has elapsed since 1 July

1955 this will mark the fourth mass reduction of prices for the production of the enterprises of the Glavmospromstroy-materialy. The over-all savings yielded by the cuts of prices of the production of these enterprises in 1960 will approximate 400 million rubles. Such a sum suffices to finance the construction of 250,000-300,000 m² of dwelling area.

The implementation of the tasks posed to the Moscow building materials and structures industry requires a considerable intensification of efforts of all the enterprise collectives, of every worker, engineer and technician.

There is no doubt that the construction industry of the nation's capital shall successfully cope with the tasks facing it and implement its pledges. However, while expressing this belief, we consider it necessary at the same time to turn attention to a number of factors which restrict the development of industry and the successful unfolding of construction, and whose elimination is dependent on the other participants in Moscow construction.

First of all, this necessitates that we resolutely demand that the design organizations -- primarily the Architectural Planning Board, the "Mosproyekt" Moscow Design Institute and the SAKB /Special Architectural Design Bureau/ -- complete their work on the design and development of blueprints for standardized series of buildings. Otherwise the industry will have difficulty in organizing rapidly and in time the production of all the parts necessary for that series.

In 1960 approximately 400 million rubles will be assigned for the expansion of the building materials industry, mainly for the reconstruction and expansion of existing enterprises and shops, and for the establishment of an industrial base for the construction of prefabricated housing. It is necessary for the Glavmosstroy /Main Moscow Construction Administration/, whose organizations carry out the principal volume of construction and installation operations on the plants of the Glavmospromstroy-materialy, to regard these plants as urgent construction projects. The heads of the Glavmosstroy should keep in mind that only the fulfillment of the greater part of the work planned for 1960 in the first half of the year can create the conditions for a timely activation of the output capacities on which the fulfillment of the 1961 construction plan will hinge.

Lastly, it is necessary that the machine building plants of the Mosgorsovnarkhoz /Moscow City Sovnarkhoz/ and the Karacharovskiy Machine Plant of the Glavmosstroy aid more satisfactorily in the supplying of plants with up-to-

date equipment, and in the mechanization of labor-consuming processes and automation of production.

END

#1386

22