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# ПОСЕЛОК ЗАВОДА СИНТЕТИЧЕСКОГО КАУЧУКА В ЯРОСЛАВЛЕ – АВАНГАРДНЫЙ ТИП СОВЕТСКОГО ГРАДОСТРОИТЕЛЬНОГО ОБРАЗОВАНИЯ

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*В 1932–1934 гг. в г. Ярославле параллельно со строительством завода синтетического каучука возводится новый жилой комплекс («соцпоселок») для его рабочих и служащих. На его примере рассматривается специфика организации советского рабочего поселка сквозь призму основных принципов и установок государственной градостроительной политики второй половины 1920-х гг. В статье ставится задача доказать, что данное градостроительное образование – характерный типологический образец советского времени, иллюстрирующий доктрину советского рабочего поселка. Публикуются новые сведения по истории градостроительства советского периода г. Ярославля.*

**Ключевые слова:** градостроительство, архитектура, Ярославль, конструктивизм, проект, тип, советский, социалистический, рабочий поселок, квартал, образец

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# SETTLEMENT OF SYNTHETIC RUBBER PLANT IN YAROSLAVL – AVANT-GARDE TYPE OF SOVIET URBAN DEVELOPMENT

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*In 1932–1934, a new synthetic rubber plant and a new housing estate for its workers and staff had been constructing in Yaroslavl (Russia, Yaroslavl Oblast). Such a housing residence was called “sotposelok”, that literally means “social settlement”. Building on the example of this particular “social settlement” and taking into account the main principles of USSR urban planning, the paper establishes the idiosyncrasies of urban planning in the 1920s. The paper argues that a “social settlement” of Yaroslavl is a characteristic of the typological sample of the Soviet era illustrating the doctrine of the Soviet working village and provides new historic facts about urban planning of the city.*

**Key words:** urban planning, architecture, Yaroslavl, constructivism, project, type, Soviet, socialist, working settlement, quarter, sample

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The last decade has seen sites of architectural and urban heritage disappearing from city maps. Arguing for the "real facts" of history is strongly opposed by potential investors in "redevelopment areas" and "renovation projects", since the restoration and renovation of historic buildings requires significant cost with minimal (or even no) benefit, while new construction in the central part of the city is quite profitable. This problem is especially troubling for the Soviet architectural and urban planning legacy of the 1920s–1960s, as buildings and structures were often made of low-quality materials, the layout and architecture were (especially during constructivism) rather ascetic and economic, and therefore unattractive to a modern potential owner, often not the brightest person but with above-average demands. The more so since the "age" of a historical object is comparatively short, and its value is usually measured in our consciousness by the limitation period; that is why the fate of the Soviet heritage is so unenviable today.

It seems that such a fate awaits the Soviet workers settlement ("**sotsposelok**") of the Synthetic Rubber Plant. It was built in Yaroslavl, Russia in the first half of the 1930s and reflects the basic principles and objectives of urban development in the studied period (Fig. 1). In the evolutionary development of urban planning concepts of the Soviet era, this residential format became an intermediate stage between the theory of "garden settlements" of housing cooperatives (HCCP), influenced largely by Howard's garden cities (garden-city Diadkovo as an example in Yaroslavl), and social cities (e.g., Yaroslavl Rubber and Asbestos Plant (YarRAK) social city), which became the basis in the development of the USSR [1].



Fig. 1. Part of the communal space of the SK-1 plant townsite, 1932-1934

This residential format – a Soviet townsite – was first and foremost in line with the official urban planning policy of the time, which shifted priorities towards the governmental-industrial form of building settlements for industrial enterprises.

Construction of the world's first synthetic rubber plant (SK-1) started in June 1931. As the host city for the plant, Yaroslavl was chosen for several reasons:

- firstly, the proximity of the city to the scientific and technological centers and industrial centers of the country, including Moscow and Leningrad;
- secondly, a large rubber-asbestos plant had started the construction in the city, and it was the main consumer of SK-

1 products (thus, the plants were being constructed next to each other);

- thirdly, a significant number of raw resources (potatoes) for the alcohol production were produced in the Ivanovo region (which Yaroslavl was a part of in 1928–1936), which, in turn, is the main raw material used in the synthetic rubber manufacturing;

- fourthly, the transport network is quite convenient and robust: there are railways, highways, and waterways for transportation of products to different regions;

- fifthly, the number of human resources: in 1931, the population of Yaroslavl was 155.5 thousand people [2, p. 16].

High construction pace (the goal was to put the plant into operation as early as June 1932), lack of qualified staff and poor construction management, difficult working conditions (lack of labor mechanization), and poor living conditions especially led to a constant turnover of staff. At first, the workers were accommodated in uncomfortable, hastily erected barracks, some of which were located in the Pochinki village behind the Krasny Perekop industrial complex, others were put near the Vspolye station. Unsanitary conditions, overcrowding, remoteness from the construction site – all these problems had to be urgently resolved to retain staff and to increase productivity. On July, 25th, 1931, the bureau of the Yaroslavl City Committee of the All-Union Communist Party made a decision on housing construction for builders and workers of SK-1 which had to be conducted at the same time as the construction of the plant<sup>i</sup>. But it wasn't all that easy to put into action. The heavy overwork of the specialists of Yaroslavl construction office, lack of materials and manpower did not allow to tackle the problem at once. Only in 1932, the designers and builders could begin the construction of the complex housing, starting with the first stage of SK Social Settlement within the quarters No. 70-71, then the second stage within the quarters No. 61-69<sup>ii</sup>.

It was a vivid example of the implementation of Soviet urban policy in the 1920-1930's, when the industrial object began to act exclusively as a "city-forming" impulse for the area development and the key factor for the decision to expand the settlements or build a new workers village, often on an empty place.

In many early projects of Soviet worker settlements, the industrial facility was usually located in the center of the settlement, which, however, was not a strict legal rule for real design practice, since the distance of the industrial facility from the residential buildings was not specified numerically. Only a qualitative requirement was specified – the gap must "shield the residences from harmful effects". Therefore, the architects proposed layout options each time according to their own ideas.

When the production was too harmful and had to be put considerably far from the settlement (e.g., SK townsite), the "substitute object" began to play the dominant compositional role instead of industrial enterprise – a public building (community hall, club, party body building, guest house, or even a



bath, laundry, etc.). Another option was building a plant management office, which was the Yaroslavl tobacco factory at first (it hosted the SK management) and a club-canteen later.

September 27, 1926. The All-Russian Central Executive Committee and SNK RSFSR officially adopted the decree "On Worker Settlements", which established certain parameters and requirements for their organization<sup>iii</sup> [3].

In 1927, the architect G.Ya. Wolfensohn published a book "Planning Working Dwellings. Workhouse and Townsite Planning Guide". In this book, he collected and described in sufficient detail the basics for the organization and arrangement of townsites [4].

Let us consider the specifics of organization of a Soviet worker settlement – a residential complex ("sotposelok") of the SK factory built in the first half of the 1930s (1932–1934) in Yaroslavl through the prism of the basic principles and attitudes declared by the state urban policy of the second half of the 1920s. It helped form and implement the doctrine of the Soviet worker settlement, which was reflected in the well-known work of G.Ya. Wolfensohn to appreciate the significance of the example and its typological essence<sup>iv</sup>.

## DISTINCTIVE FEATURES OF THE SOVIET TOWNSITES, SPECIFIC HISTORIC URBAN FORMATION

1) According to the Workhouse and Townsite Planning Guide, all types of townsites were boiled down to three main designations: a) a settlement of "urban" or "semi-urban" type "with all the elements of urban amenities with more extensive, but sufficiently cost-effective in terms of urban land development" of 2–4 storey "open" type (usually located in the areas and neighborhoods of large cities); b) "semi-rural" settlement with predominantly built-up small apartment complexes with simplified sanitary equipment (appeared at some large factory-factory enterprises near industrial centres, considered as a temporary settlement when transitioning); c) a rural-type settlement with extensive development of small apartment buildings made of local materials and following local construction techniques, usually without centralized engineering networks.

*Obviously, the SK settlement belongs to the first type of worker settlement – "urban". The area was located within the city line in the late 1920s, closer to its northwestern boundary, on the street directly leading to the factory site. Development of residential buildings along ul. Grazhdanskaya – 3-storey, ul. Nekrasova corner – 4-storey, club-canteen – 4-storey, kindergarten – 2-storey. All centralized engineering networks were assumed to be installed.*

2) "Cheapening the cost of workers' housing should be achieved by reducing the cost of both construction itself and the cheapening of operating costs" – this was the basic idea in the design of worker settlements and dwellings [4, p. 4]. Therefore, all the Soviet worker settlements of the turn of 1920–1930s were formed on regular planning, focused on the

maximum saving of funds and material resources. This type of layout (as opposed to "free", picturesque structure of "garden-cities") allowed to reduce the total length of driveways, the number of driveways with one-directional construction and the length of engineering networks (water, sewage, heat pipelines). This and the priorities of maximum standardization of housing for mass construction led to a reduction in the cost of landscaping and engineering equipment in the area and generally reduced the cost of construction of the settlement, as it was the "economy" that laid the basis for the projects<sup>v</sup>.

*It follows from the above-mentioned installations that the "SK plant townsite" is a typical example of such a planning solution. The archive drawings for the heating of the SK-1 plant settlement (1935) and the master plan for the project of building a 40-apartment house for the SK-1 plant at ul. Lubimskaya (now ul. Tchajkovskiy), covering the entire area of the neighborhood, including the first phase of the SK-1 plant settlement, can clearly read all the basic solutions adopted in accordance with the requirements for the planning of a worker settlement of the turn of 1920s-1930s (Fig. 2).*



Fig. 2. Archival drawing from the heating project of SK-1 plants settlement (first and second stages of construction), 1935

Main positions formulated by G.Ya. Wolfensohn in his work [4, p. 118] lead to the following ideas:

1. Uniform development of the entire perimeter of the block. At the same time, a string of recurring residential buildings along ul. Grazhdanskaya allowed minimizing the length and volume of all networks, roads, and other elements of improvement, as well as to achieve a sufficiently high residential density.
2. Preservation of the quadrangular outline of the block.
3. Maximize the use of frontage at street intersections, which is accomplished by cutting land at block corners or reducing the size of corner lots. In the development project of the SK-1 plant settlement, this requirement is met by shifting buildings from the corner of the intersection and creating the green square on the corner.
4. Reducing gaps between houses.



5. Intersect streets and driveways at right angles whenever possible.

6. Topography of the settlement area is quite important in terms of upstream and runoff water drainage in relation to the overall choice of direction of streets and driveways.

3) Unlike the garden-city, the Soviet worker settlement eliminated private businesses and introduced state (public) service, which required a preliminary calculation of both the optimal composition of the living conditions and the minimum services offered, which continued later, when designing social cities (settlements ten times larger than the Soviet worker settlements).

As a mandatory component, the projects of worker settlements had to include collective service facilities [5]. In the mid-1920s, this system already had several spatial and territorial levels:

1. institutions to serve the needs within a small group of the primary group (within a residential building), e.g., replacing common rooms in apartments (living rooms) with common rooms for all tenants (common laundry rooms, workshops, spaces for reading, socializing, political, and cultural propaganda, etc.) or replacing individual kitchens with communal cooking facilities;
2. Facilities to serve several groups with attached community services, such as kitchen-canteens;
3. institutions for the needs of the whole settlement in separate buildings: library with a reading space, public meeting hall (community hall), kindergarten, school, bathhouse and laundromat, etc. [6, p. 92-93].

The structure of the settlement of 1500–2000 inhabitants had to provide for a certain list of public buildings of collective use<sup>vi</sup>.

*All levels of community service facilities from those listed above exist in the "SK worker settlement" with a small adjustment, which is putting the second and third levels of service together in the separately located social and cultural spaces, in particular, the club-canteen. The choice of a site for the worker settlement, despite of approximately 1000 people (about 400 people could be accommodated in the constructed houses of the first phase, which occupy half of the block), assumed good accessibility to the necessary elements of a social and cultural life that exist in other blocks: YARAK public bath and laundromat; the school on ul. Mologskaya (Pobedi); the city hospital on ul. Zagorodny Sad; the administration of the plant and settlement, located on the territory of the former Dunayev's tobacco factory diagonally from the intersection of Grazhdanskaya and Mologskaya streets (October prospekt and ul. Pobedi); shops<sup>vii</sup>.*

4) Compared to the garden-city, in Soviet worker settlements, the functions of residential areas expanded due to the inclusion of public service facilities, as well as the creation of common recreational, sports, children's playgrounds, and

intra-block public spaces within blocks of houses, mostly for economic and recreational purposes. The layout of the Soviet worker settlement also called for the creation of a special zone in which "institutions for the needs of the entire settlement" were located in green areas: school, children's institutions, hospital, settlement-wide sports facility. A network of small sports facilities (sports grounds at houses, schools, and clubs) was also formed in the social settlements, and the regulations provided for a green area for occasional recreation of the settlement inhabitants on the edge of the settlement.

*All these "arrangement specifics" were envisaged in the structure of the "SK-1 social settlement". The central part of the area deep into the block was allotted for a kindergarten, surrounded by a lot of greenery with a central alley leading to the main entrance from ul. Grazhdanskaya. Located at the intersection of two compositional axes of the block, with equal accessibility from all built and designed residential buildings of the block, it became the main compositional node of a new type of residential formation and a place of concentration of different types of community spaces and areas for purchases and recreation (Fig. 3).*

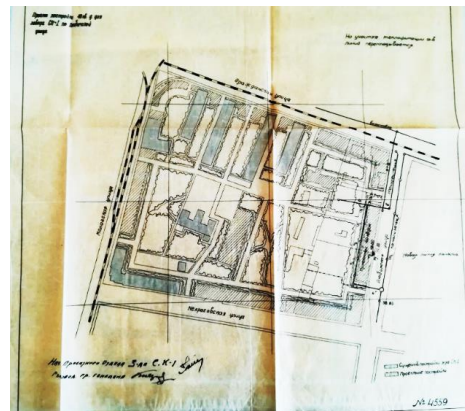


Fig. 3. Archive drawing of the general plan of the territory of the 1st stage of SK-1 social settlement, 1935.

I.I. Knyazev, Head of the General Plan Group

Judging by its present condition and the found archive drawings, many of the solutions for the settlement landscaping, the formation of street plantings corresponded to the requirements described in the Planning Working Dwellings. Workhouse and Townsite Planning Guide<sup>viii</sup>.

And although G.Y. Wolfensohn pointed out that "the issue of arrangement of green spaces in the settlements often demonstrates completely opposite approaches and complete variability," however, compliance with the basic principles of gardening can be traced in the SK-1 worker village<sup>ix</sup> [4, p. 96]:

- deep penetration of greenery from the borders of the settlement to its center;

- proximity of public landscaping areas (parks and squares) to residential areas and their convenient transportation (the central alley of the SK social settlement is connected directly to the square on the opposite side of ul. Grazhdanskaya (October prospekt, where the monument to Dimitrov was erected later) and further straight to the YARAK park in the Volga



River floodplain and in the opposite direction – to the park of the "Butusov's settlement");

- use of green areas for recreation and creation of sports and children's playgrounds within their boundaries.

5) The settlement area had to be formed by a special type of housing – communal, family-to-room settlements by groups of workers of the city-forming enterprise and service institutions. That was stipulated in the project of the SK-1 plant settlement.

And although according to all requirements and temporary building norms in the 1920's and 1930's, the small-family house was the "preferred type" of township housing, yet even then it was recognized that multi-storey apartment buildings were more appropriate for urban areas<sup>x</sup>.

For the construction of the first stage of the settlement, a typical two-family section was chosen. It became the basis for the design of four three-storey residential buildings placed at the ends of the street. The building was constructed in the ul. Grazhdanskaya (two three-section and two four-section, 18- and 24-apartments, respectively). This choice was very typical then. It was an attempt to get closer to creating 'standardized urban housing designed for the mass working consumer'. In doing so, the condition of creating the most economical in all solutions and indicators buildings was met: from the used improvised materials – silicate or ceramic bricks (which were available including from demolition of famous constructions), insulation with fiberboard slabs, the simplest volume solution of buildings as parallelepipeds, no balconies, limited number of types of windows and doors – the main elements of facades to obtain the maximum number of living space apartments in room-by-room settlement (Fig. 4).



Fig. 4. Fragments of facades of 18- and 24-apartment buildings of the first stage of SK-1 plant settlement, the drawings were signed on April 10, 1932

Another residential building of a worker settlement – a four-storey building, on the corner of intersection of Mologskaya and Nekrasovskaya streets (Pobedy and Nekrasova). Its first phase was built along ul. Nekrasovskaya and featured the same characteristics as the three-storey houses, but its corner section and the sections along ul. Mologskaya (the second phase) are decorated with small "excesses" – balconies on the long facade on the side of ul. Mologskaya (from the second

to the fourth floor). It was apparently dictated by the orientation to one of the main city streets, as well as changes in time building requirements (Fig. 5).



Fig. 5. Residential 4-storey apartment building at ul. Mologskaya (Pobedy) (second stage of house construction) Thus, "SK social settlement" is a typical example of a standardized solution of the architecture of residential buildings, as evidenced by the layout of the sections and equal living conditions (quality of housing) of rank and file and management employees of the enterprise. One can see the same tendencies (in the same sequence) in the residential buildings of the worker settlement as elsewhere in the USSR, and it achieved the main goal at the time formulated by G.Ya. Wolfensohn<sup>xi</sup>.

6) Soviet worker settlements were built when constructivism dominated the architecture of buildings and facilities, and their styles traditionally reflected the most typical techniques and principles of this avant-garde movement. These include:

- functional and constructive appropriateness, rationality of forms;
- geometric clarity and conciseness of volumes,
- long strips of glazing,
- contrast of blank surfaces with large areas of glazing,
- identifying the social specificity of the building in its appearance,
- the presence of imagery and monumentality, the preferred dynamism in many compositional solutions of buildings and structures, reflecting the spirit of the time, the new era and the constant progressive development of the country.

All these principles are reflected in the architecture of residential and public buildings of the SK-1 plant worker settlement. Residential buildings, for all their economic and geometric expediency, minimalism in the use of techniques and details, are nevertheless distinguished by a bright memorable appearance. It is the end location of the four residential buildings, supported by the asymmetrical arrangement of the balconies on them and the stepped parapet, which forms an active dynamic rhythm of development along ul. Grazhdanskaya (October prospekt), makes the architecture memorable and bright. The contrast of plaster horizontal stripes with the rhythm of the vertical stairwells and canopies of entrances, emphasized by minimally protruding risalits (created by the same fiberboard overlays and surface plaster) is the main theme of simple in its composition extended flat facades, which would not look so advantageous in the case of perimeter development of the block. The author of the project very





accurately chooses the layout of the building, on the one hand, playing with the strengths and weaknesses of the standard projects of houses, on the other hand, satisfying the regulatory requirements of that time for the artistic design of working-class housing, particularly cooperative housing<sup>xii</sup> (Fig. 6).



Fig. 6. Computer model of the residential development of the working village of the SK-1 plant.  
Computer graphics – S. Shawman

The brick building of the **club-canteen** also looks original [7]. Designed to serve a single company, it was a compact box (7,500 m<sup>3</sup>). The enlarged scale of the building as compared to the residential buildings singled it out from the environment as a composite urban accent of the worker settlement. The site at the intersection of ul. Mologskaya (ul. Pobedy) and ul. Grazhdanskaya (October prospekt), was chosen as the construction site, with a significant indentation from the latter, where a green square was laid out in the formed triangular area. The composition of the building is not actively angled due to the chosen position. At the same time, the facade of the building on the side of ul. Grazhdanskaya (lateral) has a



Fig. 7. Club-canteen of the SK plant social settlement, 29 ul. Pobedy, 1934. Side and main facades

The solution of the kindergarten is as much unique. It organically fit into the context of the worker settlement with its shape and volume. In 2019, it was promptly demolished without any approvals (Fig. 8).

Based on this analysis, we can safely say that the "SK social settlement" is a typical example of avant-garde stylistic direction, as evidenced by the architecture of all residential and public buildings. The stylistic properties and the organized environment create that necessary "psychological comfort" (already at that time such concept was thought of!), which resulted not only from utilitarian

pronounced dynamics and is the fifth (final) component of the frontal rhythm of the development along ul. Grazhdanskaya (together with the facing houses). From ul. Mologskaya (ul. Pobedy), key priority was the static symmetrical solution of the main extended facade, which logically fit into the block's layout with a large corner four-storey building, forming its "compositional counterbalance". The frontal composition of the main facade is geometrically simple, with a clear rhythm of windows, the "movement" of which stops at the edges and ends with the vertical blank sections of the wall, accented by two symmetrical entrances with rectangular canopies and a simple cornice. And although the volume of the building is not divided into parts, the internal content is clearly readable through its basic details – windows of different sizes of square and rectangular shapes. The largest windows on the first floor emphasize the location of the main clubroom, slightly smaller windows on the first floor – the canteen, the third largest windows on floors 3-4 are the cell-like club rooms, the smallest windows on the side facades – the rooms of economic and auxiliary purposes. Two symmetrical staircases, enclosed by blank wall sections on the main facade, are marked at the ends of the volume by a vertical row of windows, constituting the main compositional axis of the lateral facades. Strict rectangular outline of the building, underlined by a simple rhythm of windows, ascetic detailing, reflects the official nature of the institution and simultaneously the difficult economic conditions in which the plant was built and the social infrastructure for its workers. Absolute logic and naturalness of the organization of social processes, for which the building was intended, as well as the artistic image are the indisputable merits of this construction, a striking embodiment of the spirit of its time (Fig. 7).



residence conveniences, but also from the perception of environment, the general cultural level of people, their lifestyle, health, economic level, and professional specifics of the consumer.

A great influence on the development of a new type of urban housing (SK-1 plant worker settlement) and architecture of its residential and public buildings was coming from the competitions and numerous residential complexes built by that time, primarily in Moscow, Leningrad, Ivanovo, Sverdlovsk, and others, including Yaroslavl, as well as professional skill and experience of the project author I.I. Knyazev<sup>xiii</sup>.



**Conclusion.** Summarizing the conducted analysis of the organization specifics of the Soviet worker settlement such as "SK social settlement" in Yaroslavl, we can safely say that it *fully complies with all the principles of socialist urban planning of the second half of the 1920s – first half of the 1930s and is a typical example of such urban development.*

Today, the SK plant settlement still exists, despite the dismal appearance of its buildings and the state of improvement, and the demolition of the kindergarten. It can and should still be restored and preserved. It is necessary to thoroughly restore the village, returning everything that was lost during

irresponsible exploitation and various reconstructions, to find a new functional filling of the ensemble. It will make it not only profitable and viable, but also attractive for a new theme for tourism in the city – the theme of Soviet urban planning and architecture. After all, this is a detailed version of the urban planning concept as it was interpreted and presented by supporters of the Soviet avant-garde and the Soviet authorities in the 1920s and 1930s. Our professional duty is to preserve for posterity **a unique type of such urban formation in Yaroslavl**, in which the dream of a society of social justice is reflected.

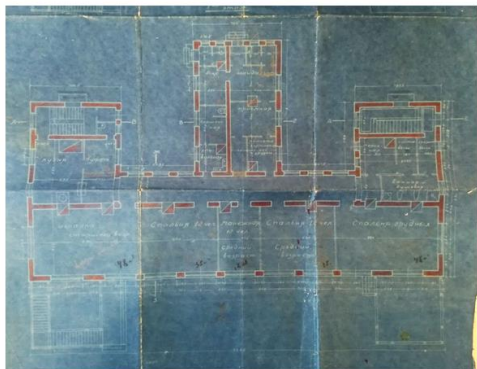


Fig. 8. Archival drawings of the plan and facade of the kindergarten building showing the date of approval of the project on July 4, 1932

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### Notes:

<sup>i</sup> Every year more and more funds were allocated for improving the living conditions of the SK-1 workers. For example, in 1935, up to 70% of the funds received from the excessive production cost reduction were used for residential construction. By 1937, the townsite had expanded with a complex of residential buildings with a total area of 7260 square meters, a kindergarten, a club house, and even a one-day rest house for 80 persons in Norskoe; apartment buildings for the plant's specialists in different central streets of the town had also been laid [2, p. 62].

<sup>ii</sup> The choice of the site for the construction of the settlement was not accidental. The construction management of the SK-1 plant was located on the territory of the tobacco factory (mothballed at that time) since May, 1931. Therefore, the nearby territory (diagonally from and opposite the factory) was the best option for that period – always under control, convenient location within the city, close to the YarRAK social town with the already functioning infrastructure (bathhouse, laundry, sound cinema within the social town and many other facilities). In the immediate vicinity there also was a technical school at the SK-1 plant.

<sup>iii</sup> Thus, the first paragraph of the decree of the All-Russian Central Executive Committee and SNK RSFSR stated that "settlements ... may be recognized as worker settlements, provided that the number of adults in them is not less than four hundred people, and for the majority of the population (not less than sixty-five percent), the main source of subsistence is wages".

<sup>iv</sup> Georgii Yakovlevich Wolfensohn (1893-1948), architect (civil engineer). Graduated from PIGI in 1918.

<sup>v</sup> At the same time, according to the "...Guide" by G.Ya. Wolfensohn, "the principles of economy, carried out in the planning of a particular settlement, must be linked to the individual character of the settlement..." [4, p. 118].

<sup>vi</sup> According to the "...Guide" by G.Ya. Wolfensohn, a normal townsite designed for 1500-2000 people, shall provide for the following facilities: cooperative shop; the township administration building (near the main street or square); post office, public canteen ("under it, usually a club with reading room"), which "are located in the central and sufficiently advantageous architecturally settlement space; a fire station near the administration; kindergarten and nursery school (designed "according to the number of children, based on 3-4% of the total population of the village"), first grade school (on a fairly large plot); an outpatient clinic with a pharmacy and a laundry [4, p. 97-98].

<sup>vii</sup> According to the provisional building rules and regulations for the construction of houses in townsites dated July 28, 1926 (para. 16), when determining the size of an apartment

according to the number of future occupants, 9-10 m<sup>2</sup> of living space per person shall be assumed; when determining the area of rooms intended only for sleeping (bedrooms) and being part of an apartment that meets the above norms, 6-7 m<sup>2</sup> of floor space and 20 m<sup>3</sup> per person shall be assumed.

<sup>viii</sup> "Street plantings constitute one of the essential elements of a working village, communicating to it, besides its coziness and attractiveness..., coolness and fresh air. In addition, they serve as protection of residential buildings from street dust.

For this purpose, the pedestrian part of the sidewalks is arranged in the form of an alley planted with trees on one or both sides. For double-sided planting, it is advisable to stagger the trees; this results in a more uniform shade, and the alley itself benefits aesthetically.

The most suitable tree species for street planting in the middle and northern part of the USSR are linden, poplar, maple, birch, willow...

... boulevards, squares and parks ... should constitute a system of continuous network of greenery...." [4, p. 95].

<sup>ix</sup> Construction project of a 40-apartment building for SK-1 in ul. Lyubimskaya (ul. Tchaikovsky) (tentatively 1935) and the project of "Heating of the residential construction of SK-1" dated 12.06.1935 (from archival materials of SK-1).

<sup>x</sup> "Development of valuable urban land requires intensive use in terms of both the number of stories of structures erected and the density of development. Due to this, the settlement requires sufficiently profitable residential buildings in comfortable urban areas and to take into account the costs of communal amenities besides the construction costs. In this respect, low-family and low-rise houses, despite all their economic and sanitary-hygienic advantages, in conditions of urban and large suburban construction, should often give way to high-rise buildings..." [4, p. 43].

<sup>xi</sup> "The standardization of whole houses or parts of houses (sections) may be considered appropriate in the context of township construction or simultaneous development of large urban complexes. Repetition of a few standard types is the surest way to improve and cheapen them..." [4, p. 11].

<sup>xii</sup> "No ornamentation such as moulding, elaborate cornices, etc., should be allowed in facades; it is necessary to strive to the external beauty and coziness by applying successful proportions and using elements of the house, which can have at the same time a utilitarian purpose, such as windows, doors, balconies, bay windows, parapets, etc." [4, p. 14].

<sup>xiii</sup> It was established that the author of the complex was the architect I.I. Knyazev, a fairly well-known creative figure of the 1920s era in Yaroslavl. He designed such famous structures in the city as the Gigant cinema (club) (1931-1934), the Soviet Bank building in ul. Komsomolskaya (1928-1929, together with G.P. Goltz), and other buildings.