In the second half of the 1940s – early 1950s in the Soviet Union there was a formation of the system of closed settlements that were built to serve the enterprises for the production of nuclear weapons. For a long time, “atomic cities” had the status of secret objects, therefore many questions of their architectural and planning development have remained open. Despite the fact that closed cities were designed and built following the general trends of development of domestic architecture of the postwar period, however, the special conditions in which these settlements were found have been reflected in the solution of architectural space.

In the context of national urban development practices in the post-war period, stages of design and construction of the ensemble of the main square in Krasnoyarsk-26 – one of the closed cities of the USSR nuclear industry are considered. Solving the problem of the quality of architectural and spatial environment of a closed city, the architects have focused on the theme of the ensemble of Alexandrinskiy Theatre in St. Petersburg. The materials are supplemented by previously unpublished archival photographs.

Keywords: Zheleznogorsk, closed city, Krasnoyarsk-26, Soviet urban development, totalitarian architecture.

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Two ways for solving the problems of organization of urban space in the post-war period

In urban development of the post-war period (the second half of the 1940s – mid 1950s) architectural creativity was focused on the search for an artistic image of the city. Henceforth, an ideal Soviet city was conceived as a city-ensemble, where all the buildings subordinated to the united artistic conception that took place one day and had been staying in the perfect condition for a long time. Basis of the concept of the city-ensemble was laid in the 1930s, when the turning point to a new understanding of the city was the work on the general plan of Moscow, approved in 1935. The magic of the city integrity that was shown in the general plan of Moscow and expressed in the monocentric structure of the capital, focused on the “main building” of the country – the Palace of the Soviets, had a direct impact on solving functional and planning problems of restorable cities (Kosenkova, 2009). While working on the general plan of Moscow there was the formation of the view that the city is primarily the “image full of ideological content” and, therefore, this
image is quite indifferent to the properties of the city and its identity (Kosenkova, 2007).

During the post-war time, the aesthetics of the city was more closely related to ideology, when architectural means pictured monumental images of strength and power of the winning state. The artistic city image was created on the basis of the forms and methods of classical heritage, relying on the models of Russian classicism, the Italian Renaissance and antiquity. Later this period in the domestic architecture became known as “Stalin’s Empire style”. The formation of the post-war period of the Soviet neoclassicism in its mature and late stages laid in the way of the construction of large scale structures and urban ensembles (Zvagelskaya, 2011). In the big picture of urban ensembles special attention was paid to the design of the city center. Centre was considered as the main compositional core of the city. The artistic perfection of the central ensemble was the real guarantee for proper development and further generation of the whole structure and fabric of the city (Yakovleva, 1990). Culmination point of the city center was the main square that was focused on one or two main planning axis. The ensemble of the square was formed on the basis of the given scenario where the role of the emphasis has been played by the building of the House of Soviets – a symbol of state power.

The ideological space of the post-war city was designed not for the individual, but for the person who was inseparable from society. Hence, the hypertrophied size of urban areas, when not a human, but the mass is the measure of the scale. The Soviet city was considered as a powerful means of formation of public consciousness, when the concept of beauty was identified with ideological necessity. This trend became stronger in the post-war period, when there was a need to rebuild some cities from nothing, like Stalingrad that had lost its past, and therefore, there was the possibility to implement in its pure form theoretical concept of the Soviet city (Yanushkina, 2009, 195). Large-scale implementation of the united universal classic architecture and urban development model in the post-war Stalingrad predetermined patterns of behavior, ritual features of lifestyle of the population. Showy prospects and highways were intended for triumphal processions and demonstrations, squares – for meetings, embankments – for leisurely walks (Ptichnikova, 2010, 249).

There were several different approaches to the solution of urban space during the construction of new settlements that were established during the development of new industrial areas. In new cities there are a lot of examples of successful implementation of ideas of the complexly planned well-organized environment that is free from the heroic pathos of architectural fantasies. Attempts to humanize the urban space that is so-scaled to the real person became apparent here. Examples of such cities in the historiography of the Soviet architecture became Angarsk (1949), Volzhskiy (1951), Novaya Kakhovka (1950), and others. Urban development requirements for new settlements remained in the generally accepted framework of the “city-ensemble”, where the most important place was given to the city center. New cities were built for the small population with the advantage of pedestrian traffic. The desire to create full-fledged urban environment often prevailed over ideological requirements that were laid to the solution of the central ensemble.

In this way in the main square of Angarsk that is located at the crossing of Lenin and Stalin prospects there are two main volumes – the building of the city council and the Palace of Culture, with the latter focused on the closure of the vista of entrance into the city from the station. Asymmetric solution of the volume of the Palace of Culture (buildings of the club and the library are flanked to the main building) rather reduced
accentual role in the square space in relation to the administration building.

Volzhskiy was developed according to the general rules that are typical for all new cities. Radial planning system of Petersburg was accepted as the basis (Ivannikova, 2009). The main square of the city laid on the central beam – Lenin Street. The only accent of the square was the building of the Palace of Culture. The central position in the square and the monumental architecture of the palace distinguished it from surrounding buildings. House of Soviets was built in one line with the buildings forming the perimeter of the square.

Implementation of Volzhskiy planning is not the only example of appeal to the planning traditions of St. Petersburg. Classical St. Petersburg-Leningrad gave the obvious lesson about how installations that have been made in the urban development in the end of 1930–1940’s can be converted into architectural and spatial images (Kosenkova, 2007). Influence of the Petersburg urban development tradition can be traced in the architectural solution of the core of social city of Chelyabinsk Metallurgical Plant (later this social city became the part of Chelyabinsk). The compositional axis of the city of metallurgists – Khmelnitskiy Street is the most significant in this respect. It is solved with a wide boulevard in the center, a strip of lawn and flower beds and small architectural and sculptural forms. This axis is closed in the east with the monumental building of the Palace of Culture of Chelyabinsk Metallurgical Plant (Konysheva, 2010). The experience of St. Petersburg is identified here with Nevskiy Prospect and its transversal vista that is opened as its motion. In the project of Bezmyanskiy district (it was originally designed as an independent industrial community) of Kuibyshev there are two main arterial highways – Kirov Prospect and Pobedy Street, at the crossing of which there is the main square with the building of the Palace of Culture in the center (Stadnikov, 2011).

The influence of retrospective trends in the post-war urban development led to the subordination of the planning city structure to one of the traditional schemes: square, rectangular and diagonal, beam schemes. Such “correct” scheme corresponded to the idea of the compact city and emphasized its “perfection”. In its pure form one of the schemes could be applied to new cities that opened “great opportunities for the establishment of really socialist cities”. As a rule, the role of the composite core of the city center in the new cities was given to major public buildings of cultural and mass purpose: cinemas, houses and palaces of culture, theaters.

**Problems of organization of living environment in the closed cities of the nuclear industry**

In the new cities, most of them were single-industry cities, the integrity of the implementation of urban development ideas in many ways was ensured by the presence of a single customer. In the list of single-industry cities that appeared in the second half of the 1940s – the first half of the 1950s, it is possible to include the closed cities of the nuclear industry. The special control system of the military nuclear industry when the client, designer and builder belonged to the same department, helped to quickly solve any issues of design and construction. Full implementation of projects was promoted by favorable financing of closed construction projects. Design of nuclear cities was done in the walls of the Leningrad Institute “Lengiprostroy.”

Secrecy of the military nuclear industry has identified the closed position of the cities and complete isolation of its residents from the surrounding areas. Area closeness and routine conditions limited the opportunity to have the full stay, but at the same time most of the
population of closed cities were people with higher and secondary professional education, and engineering and technical workers who previously lived in the European part of Russia, including Moscow and Leningrad.

The main stimuli of the work interest for highly qualified professionals in the secret nuclear facilities became fully supply and the high level of welfare and cultural services with respect to the general population of the country. Well-organized architectural space also contributed to the organization of comfortable living environment in the closed area of the city. Despite the fact that the closed cities of the nuclear industry were developing according to the general development trends of domestic architecture of the post-war period, however, the special conditions of these settlements were reflected in the solution of architectural space.

With the beginning of construction of closed cities in 1946 the concept of the small and static settlement prevailed in it. It was assumed that in the settlements there will be only employees of enterprises, while their families had to stay outside the closed zone. This concept did not provide for advanced architectural space. Closed settlements seemed to be small, isolated and completed living formations with the simplest social and living infrastructure. Nevertheless, taken into account the high social status of nuclear industry workers, architects tried to find the proper form of residence for them. Comfortable cottages and one-two apartment single-storey houses with porches and plots of land were built for scientists and engineers. Workers were placed in low-rise apartment buildings or in the houses with plots. The solution of the architectural and spatial environment, where the advantage was given to the low-rise mansion building surrounded by natural greenery, included the ideas of “city-garden” that were popular in the domestic urban development in the 1920s – early 1930s. In the planning structure of the village it was possible to mark out one main street with the placement of the public object of cultural and mass purpose on it. The selection of the village type of settlement, when it was necessary to launch new production as quick as possible, was economically grounded and easily implemented.

The growth of nuclear weapons required the revision of the original concept of the existence of closed settlements. Since 1949, closed settlements have been considered as small cities with the limited opportunity for growth and development. Adopted regular planning structure and the average number of floors of residential buildings opened up the possibility of ensemble building of the cities. The concept of the city-ensemble was mostly fully implemented in the development of Tomsk-7 and Krasnoyarsk-26. For these cities it is typical to have regular planning and compositional dedication of the center as the main ensemble (the main square in Krasnoyarsk-26) or the system of ensembles (enfilade of squares in Tomsk-7) (Reut and Yamaletdinov, 2011).

The construction of Tomsk-7 started in 1949 on the bank of the Tom River. Closeness of the great river was used by Leningrad architects to reproduce the characteristic features of the city on the Neva River. The main compositional idea of the planning (architect A. S. Nikuschenko) was to identify the main longitudinal arterial city highway by the enfilade of squares where the building-emphasis was placed. With the help of transversal streets-boulevards, every square has the opening to the river. Originally it was provided for the presence just of the protected zone of the industrial project. The township should be built on the unprotected territory with the opportunity to have free access to the bank of Tom River (Reut, 2010). In the middle of the 1950s around the perimeter of the city a guarded fence was constructed and it cut off the living area from the embankment. Security demand to “close
the city” has left the main idea of city planning as not implemented.

Implementation of the concept of “city-ensemble” in Krasnoyarsk-26

Somewhat different situation is presented in Krasnoyarsk-26. For the city it was chosen the site on a flat terrain at the distance from the great river, inside the city there was an artificial lake with the park, the main plant was placed in the underground mines at the considerable distance from the city. Already in the first draft project of Krasnoyarsk-26, made in September 1950 (architects A. I. Vlasov and M. A. Beliy) there was the principal decision to build the main square at the crossing of the meridian (Lenina Street) and latitude (Stalina Street) highways in the city center. The central position of the square in the planning structure of the city was functionally grounded by the convenient pedestrian link between the township center and railway station, from which the working staff was delivered to the underground plant facilities. The perimeter of the square was limited by the buildings with public functions: administrative and economic organizations, the court and prosecutor’s office, the hotel and the library. In the square center, on the closure of the latitudinal axis, clubhouse was located.

In January 1951, the general plan of Krasnoyarsk-26 was designed (architects A. I. Vlasov, M. A. Beliy, F. I. Korytin) where there was a fully developed plan of central districts. The project maintained the location of the square at the crossing of the main highways (Fig. 1). Clubhouse building remained the focus of the square for the building of which there was an adaptation of the typical project, implemented earlier in Zlatoust (this project at various times was carried out in Arzamas-16, Sverdlovsk-45, Chelyabinsk-40, Tomsk-7).

The architectural design of the square at first was presented on conceptual drawings in 1952. Square space was limited by the residential buildings; the facades were emphasized by small gable pediments. The line of residential buildings was supplemented with two public buildings that were located symmetrically opposite each other. The main façade of public buildings stood out for the central projection in the facade with column portico of two stories high. These porticos were crowned with triangular pediments. The western

Fig. 1. Planning of the central part of Krasnoyarsk-26 in the 1950s.
side of the square, on the place of abutment with the latitudinal axis, was marked with the high-rise accents – two residential buildings, corner of which ended with the towers (Fig. 2).

It should be noted that in the original version of the solution of Stalin Street abutment to the square, it was suggested to place the group of large public buildings – hotel and school. The buildings were placed with a space from the main building line, forming the separate composition in the way to the square. Taken into account the short length of the street with its length limited by only two blocks, the proposed urban development decision excluded the integral perception of the building. Later this decision was revised in favor of the houses-towers, and the street was solved with due regard for the long-term perception of the main volume in the square center.

The adopted architectural and spatial composition of the square as a whole was typical for the urban development practice of the post-war period. An important and key moment of the further development of the architectural idea of the central ensemble was the suggestion of architects to place in the square center the building of a club-theater with individual solution of the volume. Already in the first sketch drawings, architectural character of the decoration of the theater building was close to the implemented version with the following typical architectural details: a six-column Corinthian portico with a pediment on the main facade, Corinthian porticos of large orders on the side facades and stucco frieze in the form of strip of garlands, placed below the antamblementa (Fig. 3).

In the late 1940s in architecture and construction department of Lengiprostroy the working group was formed that was engaged in the design of public buildings. Works on the design of the theater in Krasnoyarsk-26 were headed by the department senior architect of B. G. Mashin working in the Design Institute since 1947. Before the beginning of works in Lengiprostroy Mashin worked as an assistant artist at the Leningrad Bolshoi Drama Theater named after Gorkiy and knew very well the specifics of theater buildings. Moreover, an architect took part in the development of theater buildings for Chelyabinsk-40 and Sverdlovsk-44. By the beginning of the design works for Krasnoyarsk-26 department invited young architects – the graduates of architecture institutions in Leningrad.

The solution of the architectural image of the theaterbuilding for Krasnoyarsk-26 was influenced
by the graduation thesis of G. P. Stepanov, “Theatre for Young Audience in Leningrad” (scientific adviser was E. A. Levinson). The thesis was defended at the Institute of painting, sculpture and architecture named after I. E. Repin of the Academy of Arts of the USSR in 1952. The thesis of the young architect was highly appreciated by A. N. Komarovskiy – the Head of Glavpromstroi of People’s Commissariat for Internal Affairs of the USSR, who personally supervised the construction of the secret city-object and took part in the selection of young professionals for closed construction projects. After graduation, Stepanov was hired in Lengiprostroy, where he became one of the participants of the design of the large spectacular building in the main city square.

In the graduation thesis the theater building is treated with the solid monumental volume. The main facade is emphasized by the broad showy Corinthian portico with pediment that is cut by the semi-circular arch in the extension of the central intercolumniation. In the depth of the portico there are the main entrance door and two outdoor stairs that along the curve climb to the loggia on the second floor. The building consists of two volumes: central high volume and the outer volume of lower height that wraparounds it from all the sides. The side facades are emphasized from each side by two four-column Corinthian porticos with pediments that in turn are grouped together by the Corinthian colonnade. Blind parts of the walls are decorated with stucco frieze in the form of strip of garlands that are located at the level of capitals. The solution of the volume and the individual parts of the theater building motifs of Alexandrinskiy Theatre are recognizable – it is one of the most harmonious works of Carlo Rossi (Lisovskiy, 2009), and the architectural and spatial solution of the theater ensemble in general is the high achievement in the history of Russian and world theater architecture (Taranovskaya, 1988).

Rossi’s Alexandrinskiy Theatre is the dominant volume of the system of streets and squares that is built as an artistically whole ensemble. The theatre, facing the main facade of the Nevskiy Prospect, has the “island” position in the square. The appearance of the theatre has the showy solution of all the facades and is designed for viewing from all the sides. The entrance to the square from the Nevskiy Prospect from one side is decorated by the building of the Public Library and from the other side by the pavilions of the...
Anichkov Palace. Columns of the Ionic order on the long facade of the library conform to the Corinthian colonnade of the loggia of the theater (Fig. 5).

In the architectural and spatial composition of the main square ensemble in Krasnoyarsk-26 the theme of the St. Petersburg theater ensemble is read clearly, and first of all, it is represented in the laconic and simultaneously showy solution of the theater volume that is placed in the square center. Six-column Corinthian portico focuses on the main façade of the building, and two four-column porticos decorate the side facades. Two residential buildings with the colonnade of large order on the corner rounded part (architecture Ya. M. Zeleniy) form rather distinctive propylae at the entrance to the city square. Corinthian order on the facades of residential buildings, reflecting the colonnade of the theatre porticos, intensifies the magnificence of the architectural and spatial composition of the square. Rounded corners of the residential buildings facades repeat the lodge motif on the rounded corner of the building of the Public Library in St. Petersburg, built by architect E. T. Sokolov even before Rossi’s work.

It is interesting that the composition of the main facade of the library with an ionic colonnade, where there are figurative reliefs and
arched doorways behind the intercolumniations at the top of the columns in alternate order, has been used in the solution of the side walls in the interior of the auditorium of the theater building in Krasnoyarsk-26. This detail confirms once again that the architects of the theater square in the closed city turned to the theme of the Alexandrinsky Theater ensemble. In 1953, architect V. S. Pakhomov made the perspective drawing of the final version of the architectural decoration of the main square in Krasnoyarsk-26. All the details on the picture had been fully implemented in reality already in the late 1950s. (Fig. 6).

The idea of full symmetry and unity that is represented in the architecture of Zodchiy Rossi Street, was implemented in the organization of architectural space of Stalin Street. Building of this street has an equivalent solution of height and composition along its whole length. The role of accents is played by the decorative arched insertions (architect E. A. Kazakovtsev) that combine the facades of residential buildings in the continuous line. One side of the street reflects the other. This technique intensifies the perspective view and perception of the main facade of the theater in the end of the street (Fig. 7).

High-rise emphasis in the building of the square and main streets is the residential building crowned with rotunda with a spire. The theme of the tower with a spire was especially popular in the Soviet urban development after the construction of the famous Moscow skyscrapers. The architectural decoration of the pre-war USSR spire appears very rarely, however, it is widespread in the second half of the 1940s. During this time the Stalinist totalitarian culture achieved its height (Ivanov, 2001).

Originally it was planned to build two houses with the tower end in the square of Krasnoyarsk-26. For implementation it was decided to adopt standard design of the corner residential building with the high-rise crown in the form of an octagonal rotunda with a spire (architects I. B. Orlov and N. A. Komkova) that was previously used in other closed cities. In 1954, already at the construction site, the new project was executed (architects A. A. Rutkovskiy and E. A. Kazakovtsev) with the supplement to the standard solution. The new project provided
for the establishment of the additional portal with two stories height over the entrance to the corner volume of house. Architecture of these towers have also slightly changed, it was supposed to decorate one tower with the clock dial and another one – with the thermometer. After a well-known government decree «On elimination of architectural extravagances», the tower and clock dial on the second house were not installed. High-rise part of the house was completed with a balustrade with the round sculpture. This decision did not spoil the architecture of the residential building and the ensemble of the square as a whole, but on the contrary, allowed to avoid the annoying symmetry of the original plan.

The only one tower with a large clock dial on the main façade brings romance in the architectural space of the square, referring to the images of the town halls in the medieval cities. The decoration of the clock dial with the picture similar to the zodiacal circle even blurs the sense of belonging to the totalitarian culture. In the Soviet period, the way of façade decoration with the clock dial with the zodiac circle was found only in the architecture of station buildings. Solving the problem of the decoration of the residential building and its main decoration – clock, architects certainly appealed to the image of the train station in Sochi. The station building was constructed in 1952, while the project of the architectural design of the residential building in Krasnoyarsk-26 is dated to 1954. The house in Krasnoyarsk-26 and the train station in Sochi have similar methods of decoration of the clock dial and the rotunda at the end of the tower (Fig. 8).

**Resume**

Building of the central part in Krasnoyarsk-26 fully satisfies the concept of the city-ensemble that has been generally accepted concept in the post-war time. In the planning structure of the city there is the influence of retrospective trends that has been widespread in domestic urban development of the post-war period. Planning is developed on the basis of a rectangular scheme with the separation of two principal directions. The main compositional core of the city centre is the square that is located at the crossing of major streets.

Planning of the square has the traditional solution with the building on the perimeter...
and the emphasis on the main building in the center. The main focus of the square is not the administration building, as it was typical in most Soviet cities, but the theater building (architects B. G. Mashin, G. P. Stepanov, V. S. Pakhomov). Such unusual for that time urban development solution was influenced by the special conditions of the administration of the secret city-object, when all power was concentrated in the hands of the directorate of the plant. The constitutional authority in Krasnoyarsk-26 began to shape in 1954 (Reut and Savin, 2007). Until that time, it was not necessary to have architectural design of the administrative function in the form of the monumental building of the House of Soviets.

Thus, the role of the dominant of the city square was naturally given to the theater (Fig. 9). The building of company administration was solved together with other buildings in the end of Lenina Street at the entrance to the industrial area. Administrative building, where there was the local government, was built only in 1959 (architect V. G. Alekseev), when the main square ensemble had been almost completed.

The House of Soviets stood in one line with the residential buildings on the south side of the square. The architectural decoration of the administrative building is made in the style of Soviet neoclassicism, but it looks more modest in comparison with other public buildings in the square.

The domestic architecture of the post-war period was developed in the way of great borrowing of different techniques and forms of historical styles. The architecture of the central ensemble of Krasnoyarsk-26 is characterized by the appeal to the theme of Russian classicism. The composition of residential buildings has a three-part division of the facade: rusticated base, the main elements with the elements of the order, the crowning part with the frieze strip and cornice that was especially typical for the historic architecture of St. Petersburg. Color palette of the facades with the emphasis on the white details on the background of light tints in the wall also corresponds to the classic tradition. In the solution of the architectural and artistic image of the main building of the square it is easy
The ensemble of the main square in Krasnoyarsk-26 is a good example of humanization of urban space, when the aesthetics of many Soviet cities developed according to the given scenario that was prescribed by rigid ideological requirements. The successful implementation of the idea of complex planned well-organized environment has become possible in the conditions of the closed city – one of the specific and typical phenomena for the Soviet urban development.

Of course, there should not be talking about the full understanding of the humanization of the architectural environment in order to achieve physical, psychological and moral comfort of the person in the artificial environment (Oreshko, 2010). In this case there was implementation of the totalitarian regime requirement, when the high quality of architectural space was the key for the stable work of the most important objects of the military-industrial complex.

References


Ансамбль главной площади в Красноярске-26:
gуманизированное пространство
totalitarной архитектуры

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Во второй половине 1940-х – начале 1950-х в СССР формируется система закрытых поселений, которые строились для обслуживания предприятий по производству ядерного оружия. Долгое время «атомные города» имели статус секретных объектов, поэтому многие вопросы их архитектурно-планировочного развития остаются не раскрытыми. Несмотря на то, что закрытые города проектировались и строились, следуя общим тенденциям развития отечественной архитектуры послевоенного времени, тем не менее, особые условия, в которых находились эти поселения, нашли отражение в решении архитектурного пространства.

В контексте отечественной практики градостроительства послевоенного времени рассматриваются этапы проектирования и строительства ансамбля главной площади в Красноярске-26 – одного из закрытых городов атомной промышленности СССР. Решая проблему качества архитектурно-пространственной среды закрытого города, архитекторы обратились к теме ансамбля Александринского театра в Петербурге. Материалы дополнены ранее не публиковавшимися архивными фотографиями.

Ключевые слова: Железногорск, закрытый город, Красноярск-26, советское градостроительство, тоталитарная архитектура.