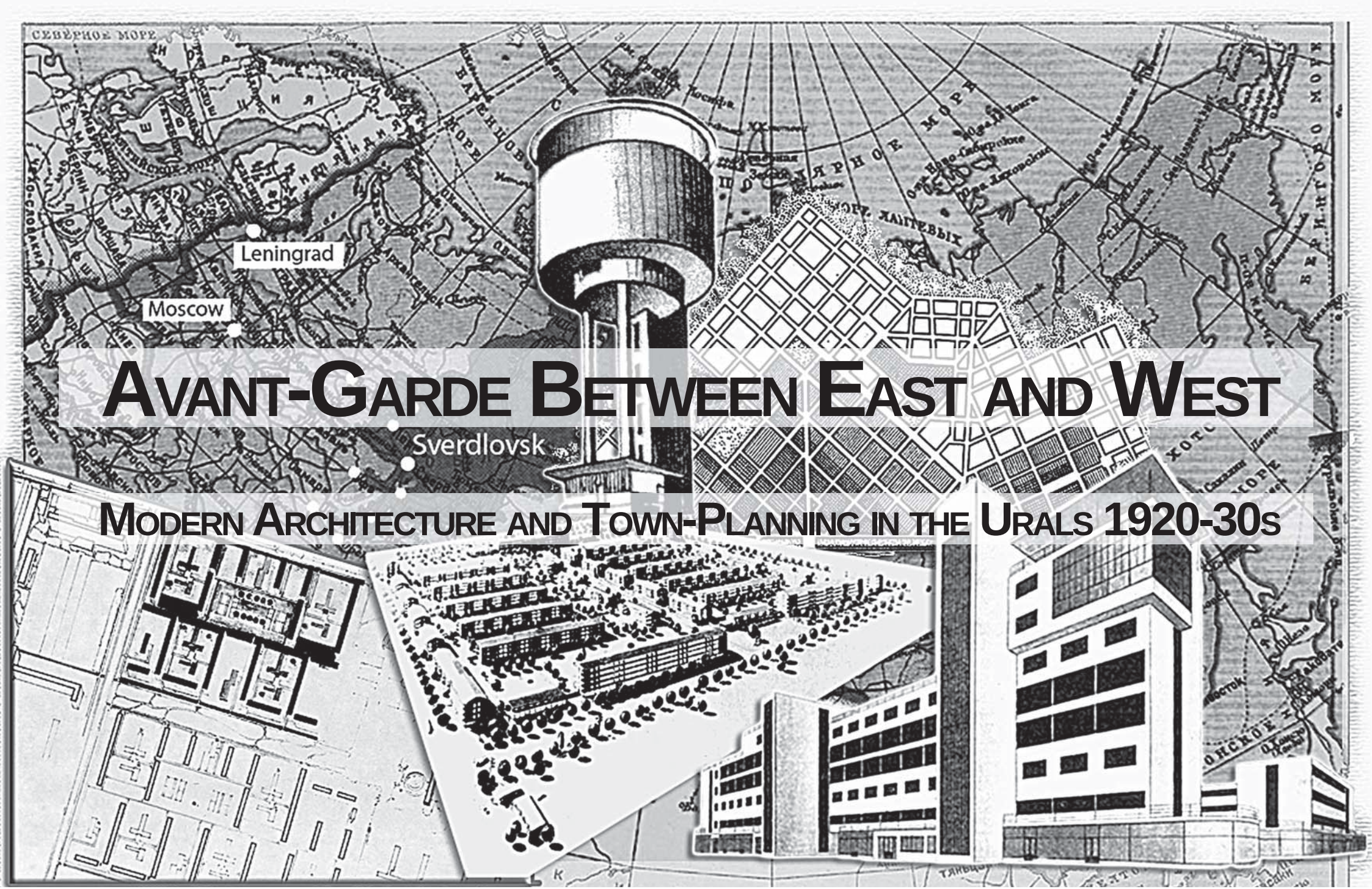

AVANT-GARDE BETWEEN EAST AND WEST

MODERN ARCHITECTURE AND TOWN-PLANNING IN THE URALS 1920-30S

TATYANA BUDANTSEVA

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Modern Architecture and Town-Planning in the Urals 1920-30s

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INTRODUCTION

It looks as if the phenomenon of modernism in architecture is well explored these days. There are plenty of publications worldwide, telling pictorial stories about Soviet constructivism and Western functionalism. In one case we learn about the Soviet vanguard-architects that took on the task of reorganizing life with the courage that broadcast the shockwaves across the borders. In another case we hear the story of some of their Western European colleagues for whom the future seemed to have moved east and who arrived in USSR by the late twenties and early thirties, eager to take part in the construction of the new society. Thereby, some people might be puzzled whether anything new can ever be told about avant-garde.

It is, however, remarkable that the study of Soviet modernism has tended to focus on the central part of USSR – Moscow and Leningrad. These two cities have been so many times brought to light before audience by both Russian and foreign architectural historians that presently may compete with each other for the title of constructivist paradigm.

Meanwhile little attention has been paid to the remote areas. These areas, though, were of a great importance for the Soviet state during the campaign of industrialization and, therefore, were intensively developed. The Ural region became one of such places. This area played an outstanding and in many respects a key role in the history of the first and the second Five-Year Plan periods. And without having a good picture of the developments in the Urals, the picture of the Soviet avant-garde will not be complete.

In 1923 the Urals area was united into one big administrative unit, the Ural region, to stimulate the recovery of the Urals industry. Shortly after, during the First Five-Year Plan, Soviet government advanced a programme of creating the Ural-and-Kuznetsk industrial complex, where the Urals steel and the coals of Siberian Kuzbass formed the second industrial base in the east of the country. In order to strengthen the young state economy, Stalin decided to build his stronghold in the centre of the country, unreachable for any invaders and even their aviation. For Urals landscape that had been scarcely disturbed by human this meant transformation into one massive construction site. The old towns were to be reconstructed into giants of the Soviet industry, and new socialist cities were to rise.

The establishing of the Urals Region coincided in time with the period when avant-garde ideas in Soviet architecture were supported by the government and even had the status of the “state style.” The prospect of a large-scale construction offered modern architects an excellent opportunity to test their theoretical works in practice, which resulted in the appearance of the avant-garde architecture and town-planning in the Urals.

Influenced by innovative concepts of the late XIX-early XX centuries, such as “garden city,” “linear city,” “industrial city,” “dynamic city,” “socialist town,” Soviet architects developed a new strategy for the state program of socialist settlement – the decentralization of big cities.

The town-planning projects in the Urals of the 1920-1930s feature the names of such renowned architects of Russian avant-garde as M. Ginzburg, I. Leonidov, A. Burov, N. Milyutin, V. Semionov. But the big Urals construction site attracted not only Russian architects. Alongside luminaries of Soviet architecture, their foreign colleagues sharing their views took part in the assignment. Among them the architectural celebrities of Western modernism: E. May, M. Stam, H. Meyer, and H. Schmidt, had followed suit.

Within the framework of the state program, Soviet and Western modernists in the Urals implemented a number of innovative town-planning theories that were all united into a concept called the “Greater City.” This concept introduced new reconstruction principles for the old cities like Perm, Sverdlovsk, Ufa, Chelyabinsk, Nizhny Tagil. The principles

implied decentralization of these cities by building satellite towns. Some cities were developed as "dispersed groups," where the city centre was linked with several "sotsgorods" – socialist towns that formed an autonomous industrial and residential entity, compact in shape. Other cities were developed as "linear groups," according to the concept of "parallel-functional zoning." This last principle was also mostly applied by development of the entirely new Urals cities: Magnitogorsk, Mednogorsk, Berezniki.
Development of cities, industrial sites and settling systems was carried out with consideration of geographical, climatic, economical and other characteristic features of the location. The Urals cities, therefore, represent a unique complex, which fully demonstrates conceptual regularities of modernist town-planning, placed into regional context.

Ekaterinburg, a city on the border between Europe and Asia which in 1924 was renamed Sverdlovsk, became the capital of the Urals region and developed into one of the largest administrative and political centres of the country. Sverdlovsk required entirely new town-planning projects that could transform it from the principal town of a province into a "progressive" capital. Thus, in the years of the First Five-Year Plan, the works on creating the general plan of "Greater Sverdlovsk" were carried out. Representatives of architectural associations of Moscow and Leningrad worked together with local architects on a new system of urban construction according to the general plan. Sverdlovsk provided a wide sphere of activity for the OSA constructivists. Their "functional method" based on new technologies, standardization and internationalization was repeatedly used there. The model of sotsgorod has found a consequent implementation by the building of the Uralmash plant residential district.
Sverdlovsk served also as a proving ground for experimental building technologies and new materials. The first example of large-block construction for dwellings and the first example of precast concrete construction with the use of expansion joint for industry were implemented there. As well as the using of "tepliak" – temporary covered and heated enclosure on building site, a clever invention for construction in winter conditions. The development of "cementfree block" offered a solution of the cement shortage. These are only few examples.

Construction under the plan of the "Greater Sverdlovsk" was stopped in 1934. At that time, the Ural Region, having failed to hold on to its territory, disintegrated into a number of smaller regions. Therefore Ekaterinburg lost the privileges of an administrative and economic centre of a gigantic region.
Talking about the lack of knowledge about the Urals modern architecture we must not forget about one exception in this picture – the city of Magnitogorsk, which is well known in both Europe and America. The Soviet Union's most breathtaking project of the early thirties was raised out of the ground with participation of many foreigners, and that is how it is famous abroad. Magnitogorsk is also known as the stumbling-stone of the raging theoretical polemics between "urbanists" and "desurbanists" – the two groupings who would not agree on the approach for designing of new settlements, until being stopped by the Soviet authorities. Still the contribution of the Ural architects in the planning and building of Magnitogorsk has never been mentioned.

For several reasons and one of them is that until the early nineties the industrial regions of Russia had status of forbidden areas, the publicity on the modernism in the regions is retarded compared to the publicity on the modernism in the centre. Thus, except for a couple of projects, there is still a vast Terra Incognita behind Moscow and St.-Pe-

tersburg (Leningrad). The aim of this survey is to take one particular region, the Ural region, away from this Terra Incognita and to attach it to the well-explored grounds of the modernism in West and East Europe.

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Description of plan, structure and method

The subject of the thesis is the avant-garde architecture and town-planning in the years 1920-30 in the Ural region in the context of the Modern Movement in Soviet Union and further in the West. This opens a new view on modern architecture and gives an opportunity to examine the connection between the design methods of Russian and Western modernism.

A special attention is paid to developments in Sverdlovsk that plays role of a focal point for both central and regional initiatives of modernism and later the Socialistic Realism. Consequently, Sverdlovsk takes a part in the history of architecture of the Modern Movement as an example of realizing a regional model of modernism.

The fact that local professionals were closely connected with the avant-garde “headquarter” in Moscow leads the author to a hypothesis that in the provincial Ural region the modernist concepts were carried out wider, and concerning the town-planning, earlier than in the cities Moscow and Leningrad, that until the postwar period remained theoretical centra more than practical.

The examination of the modernist impact on the architecture and town-planning in the Urals suggests a gradual approach: from global scale to specific case studies with emphasis on scarcely explored material. Therefore the structure comes out as follows:

- Survey of the theories and principal design methods of Constructivists. Town-planning and typology concepts and the hidden aesthetic agenda behind the program declarations of the progressive architecture in Russia, in the first place of the group OSA. A parallel survey of the highlights of the CIAM-program and how this program was interpreted by Western architects, especially the architects from the Netherlands and Germany who came to the Soviet Union to work;
- Inventory, description and analysis of modernist architecture and town-planning in the Ural region. There Magnitogorsk renders a wide scale of town-planning activities in theory and practice; and Sverdlovsk, while having own peculiar manifestations in town-planning, opens a view on the aesthetic and typologies of constructivist architecture. Simultaneously, the economical, financial, technological, climatic, and social aspects are taken into consideration;
- Analysis of the transition from modernism to classicism in the Ural region. Comparison with the same processes in the central part of USSR;
- Evaluation of the results of the undertaken analysis. Questions of preservation, restoration and re-use of the Modern monuments.

In terms of method the research is carried out in two phases:

In the preparatory, analytic phase, the theoretic town-planning concepts and the typologies of collective dwellings of the group OSA in Moscow have been analyzed with special attention to the “urbanists” and “desurbanists” streams within the group. Concerning the location Ural and Sverdlovsk, it has been examined in how far the ideas of OSA were applied in both town-planning and building process and how much they have been changed due to climatic, economic and other circumstances. Further the actual architectural and town-planning data have been surveyed and analyzed according to the typological features.

During the synthetical phase of the research, the results from the centre and the Urals have been confronted with each other. This comparison aims to confirm the accuracy of the hypothesis, therefore to give a detailed picture of professional activities in the years 1920-30. The results than have been compared with the approaches in the Central and Western Europe. The survey of the architectural and urban heritage from the years 1920-30 serves as a departure point for discussion on preservation and re-use of modernist monuments.

Selection of the cities

Moscow and Leningrad are selected to open the survey with. They were, as it was said in the beginning, the intellectual centres of modernism not only in Russia, but also outside. As for the selection in the Ural region, the cities are taken for survey because the modernist architecture is represented there in the first place, but the premises of its development are different and divide those cities in three categories:

- Cities that originated as industrial objects in the XVIII century after the reform of Peter the Great, and than after the October revolution continued being industrial centres (Ekaterinburg-Sverdlovsk, Nyzhny Tagil);
- Cities that originated for other than industrial purpose, but after the October revolution were appointed as new important centra (Ufa, Chelyabinsk);
- Cities that were built after the October revolution as a part of the new industrial plan of the Soviet state (Magnitogorsk, Mednogorsk);

These three categories show the difference in the grade of impact that modernist period had on the city structure in each case. There is also an interconnection between the set of responsibilities of a city and the scale of development.

The selected Ural cities are parts of giant industrial and strategic complexes of the USSR: the Ural-and-Kuznetsk industrial complex (Sverdlovsk, Chelyabinsk, Nizhny Tagil); Orsk-and Khalilovsky region; Perm industrial complex etcetera. Therefore, the cities where the construction of large industrial objects was planned underwent the reconstruction in avant-garde style.

There was no selection of the Western cities as such. The names are mentioned by the references to examples and in connection with definite projects from the West.

Definition of the term “constructivism”

In order to avoid confusions and misunderstanding among the readers it is necessary to clarify the definition of constructivism as it is implied in the research.

There were different groups that used the word constructivism for their name. For example El Lissitsky together with Theo van Doesburg and Hans Richter introduced one of their concepts as constructivism name on a congress in Dusseldorf in 1922. Alternatively, in Moscow in 1920 there was a group of the young artists from INKhUK (Institute for Arts Culture) that was against the idea of “pure arts” and for “communistic forms of life,” they called themselves constructivists.

In our case constructivism describes the innovative concepts of the group OSA-Ob’edinienie Sovremennykh Architectorov (Assotiation of Contemporary Architects) in the fields of architecture and urban planning which was established in 1925 by Alexander Vesnin. In programmatic terms constructivist architects focused on the two primary aims. In the first place they attempted to invent the ideal socialist town. In the second place they tried to postulate the new “social condensers” of the society at both an architectural and institutional level. Given the priorities of the Soviet Union constructivists came to be devoted in the infra-structural needs of society.

Thus the creations of the other groups and archi-

tects that were not OSA-members will be called “avant-garde,” “modernism,” “new architecture” that are generally synonyms and together with “constructivism” fall under the Modern Movement.

For the same reason I deliberately avoided the term “Sverdlovsk constructivism” which is frequently used. Because there are buildings after the projects of OSA – constructivist buildings, and there are other modernist buildings in Sverdlovsk.

Literature Review

An overview of the whole phenomenon of the modernism and its specific manifestations in Western Europe and the Soviet Union would be a mission impossible for such work as a doctoral thesis. Also it would not be necessary to compete with the many great names in the field of architectural history that have already produced various works. In the same way, reviewing and analyzing the entire bibliography of Functionalist and Constructivist architecture would require a separate volume. And this would lead away from the primary goals of my research.

This review has two objectives. First, it aims to examine what literature is relevant for studying the modernism in the Urals. Second, inspects to what extent the Ural case is researched in the current publications, and what parts are missing. For that, I have selected a number of items, representing different kinds of sources (archive documents, old publications, new publications), which helped to get a good insight. After sorting the sources into categories, I went over the main points of every category in order to determine the main stages of approach to the subject. As a result, the literature investigation has fallen in three parts.

In the first part, the published materials giving a general overview of avant-garde in architecture were observed. Then, I selected the parts that refer to the developments in the Urals, which contributes to the better understanding of the premises of the Ural case, and connect the phenomenon in question with the general information on Soviet avant-garde.

In the second part, I investigated the primary and secondary sources, such as drawings, photos and memoirs, from the local archives and museums in the Urals. Subsequently, publications on the Ural architecture that came out during and shortly after World War II were studied. The latter were useful for comparison of the sources and the later issues, so I could figure out to what extent information in the books differs from the originals.

The third part comprises the present state of scholarly discourse on the subject. Furthermore, it was interesting to take a look at the studies of similar kind to mine. As Stalin's program of industrialization struck not only the Ural region, but also the regions of Volga and Siberia, there are more specialists who have been trying to introduce the regional avant-garde to the world. The question here was: what is today's research state on the topic that was first prohibited, then neglected, and only recently rediscovered?

General information on the Modernism and Socialist Realism

Russian sources

There is hardly anything better for studying a subject than "back to the source" literature – the documents coming from the studied period. It is true that all of those documents are affected by the spirit of epoch and the authors often speak out in an extreme way, but there you can extract a pure essence of their concepts and draw your own conclusions from. For studying constructivism under this category falls: M. Ginzburg, *Zhilistche* (Dwelling), Moscow 1934. This book is about theoretical and practical proceedings the group OSA performed on the fields of new socialist settlement and new forms of dwelling, also contributes to the research in the Urals. In the chapter about the transition type houses, Ginsburg gives as an example the Uraloblsovnarkhoz House in Sverdlovsk. And in the chapter on the problems of socialist settlement we can find the project "Magnitogoriie" as a variant of application of the desurbanist concept. The same chapter also revealed a secret: another settlement example, marked as "Settlement strip layout. Arbitrary geographical site", I recognized as based on the layout of the central part of Sverdlovsk.[1]

Among the books representing the category of Soviet modernism are: M. Ginzburg, *Stil i Epokha* (Style and Epoch), 1924; N.A. Milyutin, *Sotsgorod. Problema Stroitelstva Sotsialisticheskih Gorodov* (Sotsgorod. Problem of Development of Socialist Cities), London 1974 (origin. 1930); R. Khiger, *Puti Architecturnoi Mysli* (The Ways of Architectural Thought), Moscow 1933. That latter is an example of an early attempt to overview and analyze the main ideas of Soviet architecture. There is also an interesting series of bundles: V. Khazanova (author of reviews and comments), *Iz Istorii Sovetskoi Architectury* (From the History of Soviet Architecture) *1917-1925, 1926-1932*, Moscow 1963, 1970. The authors selected and gathered together the programs, letters, manifestations and projects of the most notorious groups from those years in order to provide historians with the archive materials that are normally not easily accessible and to republish the materials that once stood in the periodicals. Among the abundant material, the bundles contain some illustrations of the new developments in the Urals and Sverdlovsk.

Other essential sources of information are original periodicals of the pre-war years: *Sovremennaya Architektura* (Contemporary Architecture), *Sovetskaya Architektura* (Soviet Architecture), *Architektura SSSR* (Architecture of USSR), *Stroitelstvo Moskvy* (Construction of Moscow), *Pravda* (Truth), *Izvestia* (News), *Architekturnaya Gazeta* (Architectural Newspaper). In those newspapers and magazines, the projects for the Ural region and Sverdlovsk as well as professional discussions on the topic had been regularly published. Particularly in *Sovremennaya Architektura*, we can find architectural designs of the OSA members for the buildings within the city reconstruction plan "Bolshoy Sverdlovsk" (Greater Sverdlovsk). As well as a letter from a group of young architects and engineers from Sverdlovsk to the OSA leadership with a request for permission to organize Urals Section of OSA.[2] In 1930es *Sovetskaya Architektura* regularly presented Ural building progresses to the readers. There you come across the contributions written by both Russian and foreign architects, such as: a complete overview of the competition projects for the Big Synthetic Theatre in Sverdlovsk; development plan for *Bolshaya Ufa* (Greater Ufa); the projects for Magnitogorsk by the ARU members and by Ernst May; project for *Proftekhcombinat of Tractorstroy* (Technical school of the tractor building plant) in Chelyabinsk by M. Ginsburg; general plan for Makeevka by Ernst May and Mart Stam.

Russian studies

Concerning the resent editions about Soviet avant-garde, Khan-Magomedov's books should be mentioned in the first place. His most significant work is the monograph *Pioneers of Soviet Architecture: The Search for New Solutions in the 1920s and 1930s,* where Khan-Magomedov reviewed the innovative searches of Soviet architects during the first third of the XX century. Apparently, everyone interested in the subject has secured a copy of this book for personal library. The first version of the book was edited in Germany under the title: *Pioniere der Sovetischen Architektur*, Wien 1983, followed by the English versions, published in London and New York in 1987. It took almost two decades until the Russian version came out. But it was worth waiting: the monograph *Architektura Sovetskogo Avangarda* (Architecture of Soviet Avant-Garde) was larger, presented in two volumes. The first volume *Problemy Formoobrazovania: Mastera i Techenia* (Problems of Form Generation. Masters and Trends), Moscow 1996, examines the main stages of the Soviet architectural Avant-garde development and its place in world architecture of the XX century. The second volume *Sotsialnye Problemy* (Social Problems), Moscow 2001, considers issues connected with the pursuit of new: social questions, human set-

tlements, new typologies. With the help of a couple of thousand illustrations, including projects, sketches, models, photos etc., Khan-Magomedov gives the most efficient general overview. A few times through the book the narrative comes to the Ural region and Sverdlovsk, but the mentioned projects are off course not a hundredth part of what deserves attention. Another moment is that the Urals developments are mostly represented by the activities of the masters from Moscow and Leningrad, as in the case of the competitions for the Big Synthetic Theatre and the House of Industry in Sverdlovsk. Otherwise they are mentioned in the chapter about the architects from abroad, planning the new cities, and among them Magnitigorsk, on the basis of competition. The projects created by Ural architects are scarcely mentioned.

The list of studies of modern architecture in USSR can be extended with the names of: A. Ikonnikov, *Russian Architecture in of the Soviet Period*, Moscow, 1988; and V. Khazanova, *Sovetskaya Architectura Pervoy Pyatiletki* (Soviet Architecture of the First Five-Year Plan), Moscow, 1980; these are qualitative alternatives.

More information is in the numerous monographs with works of the most significant Soviet vanguard architects, such as: S. Khan-Magomedov, *Ilya Golosov*, Moscow, 1988; S. Khan-Magomedov, *M.Ya. Ginzburg*, Moscow, 1996; A. Tchinyakov, *Bratya Vesniny* (Brothers Vesnin), Moscow, 1970.

Western studies

The list of books about the modernism in general is quite extensive. And this category is only of relative importance for the study, so a couple of books inform sufficiently. In particular, the books of R. Banham, *Theory and Design in the First Machine Age*, London, 1960; *A Personal View of Modern Architecture: Age of Masters*. New York 1975, summarize the more than semi centennial experience of Modern architecture in a critical way. Furthermore there are editions giving a historical overview of modernism worldwide: K. Frampton, *Modern Architecture: a Critical History*, London/New York, 1992; F. Dal Co, M. Tafuri, *Modern Architecture 1*, Milano, 1987; W. Curtis, *Modern Architecture Since 1900*, Oxford, 1996. It appears that in all this issues the chapters about the constructivist period in USSR can be considered as a weak place. Perhaps it is a natural consequence of writing a book with such a wide scope, but the works mentioned above suffer from numerous little mistakes and inaccurate definitions. As a little illustration, we can see that each author gives the definition of El Lissitzky's *Proun* differently: Banham assumes that "Proun is just a Russian word for 'object'"; Frampton writes that Proun is from "Pro-Unovis", "for the school of the new art"; Curtis presents a picture of Lissitzky's Proun paintings and architectural proposals in the context of Russian avantgardists discussion. None of the three hit the target. Dal Co and Tafuri make an exception here. Their explanation of Proun as "the artist's duty to proclaim that the age-old spell had been broken once and for all by a new world" corresponds to what Lissitzky himself wrote about the aims of Proun, which was the acronym for the Russian "Project Utverzhdeniya Novogo" (Project for the Affirmation of the New).

The urbanistic works of Le Corbusier deserve special attention. His projects in the early 1930s were strongly influenced by Russian designs; see for example J.-L. Cohen, *Le Corbusier and the Mystique of the USSR: Theories and Projects for Moscow, 1928-1936*, New Jersey, 1992.

Last but not least, the book of B. Kreis *Moskau 1917-35. Vom Wohnungsbau zum Stadtebau*, Düsseldorf, 1985. This comprehensive account on architecture and town-planning in post-revolutionary Moscow is one of the earliest foreign studies of Soviet avant-garde. In 1984 it was submitted as a doctoral dissertation in Hamburg.

For years since Soviet avant-garde was rediscovered, its successor, socialist realism was associated with "regress" and "ideological kitsch." This resulted in the lack of an objective scholarly discussion on the topic, and therefore, the period of transition from modern to classical forms in Soviet architecture was underresearched.[3] In the seventies this situation started to change, but with varied success. Apparently, some studies about the architecture of Stalinism were emotionally charged, concentrated on its political, rather than its aesthetic value. Hudson, Jr's, *Blueprints and Blood*, New Jersey, 1994, displays all the above mentioned features, although it is a relatively recent edition. The story is focused on the polemics and struggle for authority among different professional groups, while their designs are left outside the scope. Though the title promises a balanced overview "blood" prevails over the "blueprints", and modernism is seen as absolute good while classicism symbolized evil. However, this book was useful for my study as a background story, in which context I could put the analogous events in the Ural region in order to see the correlation between the center and the region. To study "Stalinism through architecture" a different approach is necessary. Such an alternative is the article, "Zur Theorie des sozialistischen Realismus in der Architektur"[4] by O. Máčel. The narrative sets an outline of origin and development of Socialist realism in architecture as well as other arts in Soviet Union. The historical review of the Russian classical tradition provides a basis for the evaluation of streams in architecture after the October revolution. Máčel's contribution suggests that the answer to the question "why modern architecture had to make way for traditionalism" finds itself not only in political, but also in cultural sphere.

Russian studies in English: A. Tarkhanov and S, Kavtaradze, *Architecture of the Stalin Era*, New York, 1992

Information on Modern architecture in Sverdlovsk and the Ural region in the 1920-30s

Sources

Besides the nationwide periodicals mentioned above, the local magazines and newspapers, such as *Opyt Stroyki* (Building Experience), *Uralskiy Rabochiy* (Ural Worker) *Vecherniy Sverdlovsk* (Sverdlovsk by Evening), *Stalinets* (Stalinist), *Za Uralskiy Bluming* (For Ural's Blooming) in the period 1926-40 reported on the most significant developments in the region.

But the major sources of information are the archives and museums of the Ural cities. In particular Ekaterinburg (Sverdlovsk) has plenty of archive materials about the whole region at its disposal. The sources are stored in GASO (the State Archive of the Sverdlovsk Region), the archive of the R&D Center of Preservation and Re-use of the Monuments of the Sverdlovsk Region, the museum of Architecture and Industry of the Urals, the museum of UGTU-UPI (Ural State Polytechnic University), the museum of Uralmash.

It is not only drawings, photos and official papers that create a picture of the big changes time in the Urals. It is also reminiscences of that time written by eyewitnesses, people who actually participated in the building process, and later told the story from their point of view. An example of this are the memoirs of S.V. Dianov, *O Stroitelstve i Striotelyah Sverdlovska: Nachinaya s 20-kh Godov* (About Building and Builders of Sverdlovsk: Beginning from 20s), found in the museum of Architecture and Industry of the Urals. Dianov made his career from a trainee to the director of the Sverdlovsk branch of Giprotorg (State Institute for Design of Trading Objects) and in the years 1920-30s he worked on most of the building sites in Sverdlovsk and even some in the region. He managed to tell about this big experience in exact details, dates and names. Dianov recalled very well the meetings with the head architects and other specialists up to the officials from Sverdlovsk government, and even remembered the names of most bricklayers and painters who worked with him and later under his supervision. The memoirs of Dianov give a lot of useful facts while his sense of humour makes the reading enjoyable. Here and there, the author makes ironical remarks about himself or even the official policy: "Even now I still don't get it: why in those years when the country, Ekaterinburg, lay completely in ruins, they built nothing else but a granite embankment?" (about a student excursion to the first building sites of socialistic Ekaterinburg in 1923).

Another collection of memories comes from the Museum of Uralmash: *Sotsgorod Uralskogo Zavoda Tyazhologo Mashinostroenia. 1929-1975* (Sotsgorod of Urals Heavy-Machine Building Plant), written by V.N. Anfimov. It is a complete story of creation and especially implementation of the famous residential district of the Uralmash plant Anfimov's story starts where he becomes an employee of the project department of Uralmashstroy and together with his colleague architects and engineers they take the challenge of turning a piece of Taiga into a new progressive settlement, that had never been built before. Step by step we follow the progress that are given in encyclopedic details, in all aspects: architecture, town-planning, building technology, public transportation, public green and botany, inventions of engineers for workers training, struggling with the lack of building tools and devices and the severe Ural winters. We can learn a lot about life of the builders while Anfimov gives an entire overview of what was built (and occasionally destroyed), when, where and why it was built and by whom, so we get information on every building on every street, including the history of that street from the beginning on. Anfimov sounds lyrical and sometimes sentimental, but he is obviously sincerely dedicated to the work of his life, the creating the

sotsgorod of Uralmash, where he worked as a head engineer from 1937 till his retirement in 1973.

Russian studies

The publications about the architecture in the Urals that appeared after World War II are interesting to read as a sequence. The topic remains unchanged, but you can see how the tone and vocabulary of the narratives transform through the years. This phenomenon is getting even clearer when observed within one instance, as I did studying the case of Sverdlovsk. After all, the capital of the Ural region requires an extensive study.

In the early post-war years a study on avant-garde in architecture was unthinkable. Even the word "constructivism" was hardly pronounced. The Soviet architecture in that period was divided in two sorts: the beautiful classicism and the terrible "matchbox style" that was mostly a result of a great irresponsibility of architects. This way it was presented by P. Volodin in his articles "Sverdlovsk" and "Chelyabinsk" from the book: *Architectura Gorodov SSSR* (Architecture of the Cities in USSR), Moscow, 1948, which the editors were V. Vesnin, D. Arkin and I. Leonidov – the old leaders of OSA. Volodin who in his earlier works also had shown himself as a follower of Functional Method, in those articles rejected everything connected with the Constructivist past and reported about the improvements that had already been done on the city architecture. The book *Sverdlovsk v Nastoyaschem i Buduschem* (Sverdlovsk in the Present and in the Future), Sverdlovsk, 1958, by P. Panov introduces the new image of the city in the nearest future, as it was seen in that time. Citizens would be impressed with changing of all buildings by giving them new porches with added weight of columns and entablature; streets formed by a continuous front of decorated facades; bombastic ensembles, planed on the basis of geometric figures, shaping squares. Modernismism was to be buried under stucco molding.

A reasonable view on modernism as a worthy part of architectural history comes in 1970s. A. Shelushinin has written this way: *K Istorii Architectury Sverdlovska. Constructivism 1920-1930 Godov* (To the History of Architecture in Sverdlovsk. Constructivism 1920-1930es), from the book dedicated to the 250th anniversary of Ekaterinburg-Sverdlovsk, edited in 1974. In a short article of 10 pages Shelushinin analyses and structuralises the period of avant-garde in Sverdlovsk, evaluating the grade of perception and adaptation of the modernist concepts by local architects. He mentions the most significant avant-garde projects, tells about the coexistence of new and traditional architecture and sometimes their interlacement within one building. When it comes to criticizing the last phenomenon, Shelushinin chose the dwelling complex *Dom Starogo Chekista* (Old Chekist's House), built in 1930 after the project of I. Antonov and V. Sokolov. The same complex happened to be mentioned in the review of Volodin, but just as a good example of how the modern boldness can be dealt with by the traditional aesthetics. Consequently, what, according to Volodin, "expresses the force and significance of our time",[5] Shelushinin sees as "unacceptable for the image of a dwelling imperial pathos, making a depressive impression."[6] Remarkable coincidence of choice. Or was it?

The book *Sverdlovsk: Stroitelstvo i Architectura* (Construction and Architecture), Moscow, 1980, by N. Alferov et al, contains a detailed chapter about the Constructivist period in the city. And there are more editions about architecture of Ekaterinburg-Sverdlovsk, where modernism is treated as a part of a bigger story. Like in the analytical study of the town-planners V. Bukin, V. Piskunov, *Sverdlovsk. Perspectives of development to the year 2000*, Sverdlovsk 1982, which is composed in three languages: Russian, English and German. Or in the historical contribution of A. Starikov et

al., *Ekaterinburg: Istoriya Goroda v Architekture* (Ekaterinburg: History of the City in Architecture), Ekaterinburg 1998. The latter is dedicated to the 275th anniversary of the city, and is completed with a catalogue of the architectural monuments of Ekaterinburg. Although the chronological layout of the book does not imply a general chapter about modernism, some architectural examples from this period are spread over the sections about the separate districts. In the opening essay "the history of the town-planning" the period is considered consistently. However, this edition exhibits several weaknesses, formal as well as regarding the contents. It is written by several authors and therefore facts get repeated and terminology is inconsistent (some projects are mentioned several times, but with different names). Concerning the content mistakes, there is errata attached, but it does not cover all the errors. Checking only information relating to my research, I have discovered some more misspelled names and wrongly defined projects. For instance on page 220 a picture of a project in the avant-garde forms, is described as the student hostel of the Technical University that gained a "flamboyant plastic décor" during the development. On the contrary, this is the professor's apartment house and everybody can find this building in the downtown of Ekaterinburg and see that it still retains its bare modernity.

Modernism as a historical stage is as well observed in contributions of less architectural, more historical and cultural nature, such as N. Berdnikov, *Gorod v dvukh izmereniyakh* (City in two dimensions) Sverdlovsk 1976; V. Lukyanin, M. Nikulina, *Progulki po Ekaterinburgu* (Walking tours of Ekaterinburg), Ekaterinburg 1998.

Western studies

The changes brought by the industrialization program into Ural cities are not widely known outside the Urals, least of all abroad. A limited evidence of those changes is the projects of venerable Western architects that came to work in USSR. The monographs, reviewing works of Mart Stam, Ernst May, Hannes Meyer and Hans Schmidt contain some Ural projects. To be more detailed, plans for Magnitogorsk and Makeevka of E. May; plans Nizhny-Kuriinsk, Na Gorkah and Perm industrial *rayon* of H. Meyer, plans for Orsk and Rakityanka of H. Schmidt. However, this is not everything that was done, as there was, for example, no May's plan for Nizhny Tagil in the books. C. Borngräber in his study "Ausländische Architecten in der UdSSR: Bruno Taut, die Brigaden Ernst May, Hannes Meyer und Hans Schmidt", *Wem Gehört die Welt: Kunst und Gesselschaft in der Weimarer Republik*, Katalogus Staatliche Kunsthalle, Berlin, 1977, p. 109-133, united the stories of the famous Germans that went (with exception for Taut) from Moscow to the Urals and Siberia.

Yet, Magnitogorsk is an exclusive case. It is probably the most famous industrial city of Russia, worldwide known as "the first industrial city" of the USSR. Unlike other city, this one was built on the bare steppe. As it was the first attempt of building the new industry, foreign professional experience was necessary. And while American engineers supervised the plant construction, the general plan of the settlement was committed, in the end, to German and Dutch architects. This is the reason why we know the story of Magnitogorsk not only from numerous Russian books, but also from the eyewitness accounts of foreigners. They described the city from different sides and positions, because ex-pat specialists worked there not only behind the drawing-board, but also on the scaffolds of the construction site. To the latter category belonged J. Scott, the author of *Behind the Urals: An American Worker in Russian City of Steel*, Bloomington & Indianapolis, 1989, the book first released in 1942, when he returned back to America after six years living and work-

ing in the Soviet Union in the 1930s. Scott's story illustrates in the first place the work life in Magnitogorsk. But, being evidently communicative and inquiring person, he got access to the places like the city's archive and financial administration, which resulted in a detailed report on the growth and productive efficiency of the enterprise and also different life aspects of the city. Furthermore, Scott was on the good terms with the foreign specialists that lived outside the city on a separate location with better living conditions. In the anecdotes about the foreign village he also mentions Ernst May and his town-planning achievements. So, the fact of building the settlement on the right bank of the industrial lake, right under the smoke from the plant, he merely explains as a "blunder" of May.

In his turn Ernst May also left some memories of Magnitogorsk. In "Cities of the Future", *Survey*, 1961, May recalls his visit to the USSR for the planning of the new towns that started in 1929 with enthusiasm and ended in 1933 in disappointment. The first assignment May's group got was a master-plan for the town of Magnitogorsk. Together with this assignment, they heard that the project deadline had already expired, but neither the lack of time nor working materials could take them aback. It was the bureaucratic machine that obstructed the progress: "From the very beginning there had been lively discussion whether the town should be built on the right or the left bank. But since I had deadlines to meet for the construction of the town, and since no decision was forthcoming, I had no choice but to proceed according to our plans."[7] Apparently, Scott was too fast with his conclusion. May decided to leave the USSR, embittered by the indecision which characterized the official style of communication.

The stories of May and Scott contradict each other on this point. More details came later, in the years of *Perestroyka*, when an American historian S. Kotkin visited Magnitogorsk to complete Scott's study. After forty five years, Kotkin was the first American who entered Magnitogorsk. His book *Magnetic Mountain: Stalinism as a Civilization*, Berkeley/Los Angeles/London, 1995, is an analysis of Soviet society in the time of Stalin's five-year plan. Kotkin believes that "a study of Magnitogorsk offers a microcosm of the USSR," and therefore explores it in many dimensions. In this way, the case of May's assignment to design the city also was investigated. Kotkin revised the circumstances, May had to deal with when commencing his job, that May himself did not mention, and probably was not fully aware of: "Even more surprising, when he arrived at the site May found that the city he had been asked to design was already under construction. On 5 July 1930, three month ahead of the German architect's arrival but just in time for the opening of the Sixteenth Party Congress, the local authorities in Magnitogorsk organized a ceremonial laying of the foundation stone for the first apartment building on what was named Pioneer Street."[8] According to this, the building of the settlement on the right bank under the harmful emissions of the factory had nothing to do with Ernst May, who just had to adapt his design to the existing situation.

To finish with Magnitogorsk I must mention another book, which is recently released. *Städtebau im Schatten Stalins:Die internationale Suche nach der sozialistischen Stadt in der Sowjetunion 1929-1935,* Berlin, 2003, by H. Bodenschatz and C. Post is a study of the early Soviet town-planning, which the authors divide in two main types: reconstructed old cities and newly built cities. For that reason the attention in the book is mostly concentrated on Moscow and Magnotogorsk. The study does not bring much of discoveries, but is so complete that hardly anything can be added to it, at list in terms of town-planning.

The present state of publicity around Avant-Garde in the Urals and other regions

Despite the fact, that modernist architecture in the Ural Region has gained public interest since the Perestroyka period, there is still a dearth of international publications that describe and analyze this phenomenon properly. The Ural modernism is mostly reviewed in the Russian publications by means of articles in the periodicals, dissertations or contributions for thematical seminars and conferences.

The interest of Russian scholars to the regional modernism has substantially grown over the last ten years. However the accounts on the topic vary in quality. The Dutch-Russian architectural magazine *Project Russia* published a series about avant-garde in the province. Among others, the cities of Kazan, Novosibirsk and Sverdlovsk were brought to light. The article "Architectural landmarks of the Soviet period in Yekaterinburg" by L. Tokmeninova, published in *Project Russia* 2000/3, is a review with a brief catalogue of the most known modern monuments of Ekaterinburg. There are various mistakes discovered in both review and catalogue. Especially the review that opens the article suffers from inaccuracies. A characteristic quote gives a clue: "The first plan for the reconstruction of the city was realized by the architect N. Boyno-Rodzevich in 1924. Then from 1925 to 1932 the general plan was elaborated by architect S. Dombrovsky in the form of a group city, since the planning possibilities of the historical centre had been exhausted and it was necessary to create new formations, the so-called socialist city, beyond its perimeter. To the end of the 60s the city developed according to the first general plan, called "Big Sverdlovsk."[9] An explanatory note to the general plan mentions "The creation of the Big Sverdlovsk being resolved as an organized city-factory", where industrial enterprises function as urban form-generators while public, residential and cultural buildings are concentrated around them. Individual buildings give way to massive residential combines, which are functionally linked to one another and freely placed in city blocks."[10] In this fragment the facts, dates and names are given incorrectly. The information from the primary sources looks as follows.
First, the full title of N. Boyno-Rodzevich - "engineer-architect" was shortened to "architect" presumably as a redundant detail. But Tokmeninova is also not aware of the fact that Natalia Arkadievna Boyno-Rodzevich is a female. In fact the first plan was developed by the team of specialists from the Urals region design-and planning bureau under her supervision. Second, the phrase about "the exhausted planning possibilities of the historical centre and the necessity of creating new formations beyond its perimeter" is a bit of riddle. The historical centre underwent big changes according to the plans of that time and there is no witness of the lack of its planning potential. Third, that to the end of the 60s Sverdlovsk developed according to the first plan of "Greater Sverdlovsk" – is not correct. The "Greater Sverdlovsk" plan in all its versions was never authorized even during the period when Sverdlovsk was considered as the Ural's industrial capital. After the Urals administrative region was abolished in 1934 the planning efforts were concentrated on the reunification of the unattached parts of the city into a compact scheme. Concerning the dates in the given quote, the years are so mixed up that it makes no sense to try and correct them in the text. The attached catalogue carries on with mistakes, caused by the inaccuracy in the names and dates. It is a shame that such erroneous texts are also published. The danger of it is that an inexperienced person might take this information as a starting point for his own study.

The end of nineties was fruitful for dissertations

on the Ural architecture and town-planning. The Candidate dissertation *Architecturno-Planirovochnoe Nasledie 20-50-kh Godov XX Veka v Gradostroitelstve Urala* (Architectural and Planning Heritage of the Years 20-50s XX Century in the Town-Planning of the Ural), Novosibirsk, 1997, by N. Lokhova, is a perfect reference and a supplement to my research. O. Martynovich defended her dissertation *Architecturnoe Nasledie 1920-30-kh Godov v Formirovanii Oblika Ekaterinburga* (Architectural Heritage of 1920-30th in the Image Forming of Ekaterinburg), Ekaterinburg, 2004. In this survey the attempt was made to evaluate architectonic and town-planning data of 1920-30th heritage in contemporary architectural environment of Ekaterinburg.

Another dissertation, *Architectura Samary v 1920-1930-e gody* (Architecture of Samara in the 1920-1930s), Samara, 2000, by V. Stadnikov, studies avant-garde in the Volga Region, which makes it an interesting background information.

The contributions, such as S. Semenova, *Istoricheskoe Razvitie Planirovki i Zastroiki Ufy: Konets XVI v. – Nachalo XX v*. (Historical Process of Planning and Development of Ufa: End of XVI Century – Beginning of XX Century), Moscow, 1998; E. Ponomarenko, *Evolutsiia Planirovochnykh Struktur Gorodov Yuzhnogo Urala* (Evolution of the Planning Structures of Southern-Ural Cities), Moscow, 1997, take us back to the origins of Ural cities, and therefore are also helpful to gain a broader view of the Ural history.

It is significant that the research on regional Soviet modernism is active outside Russia. Mostly it happens within the framework of researches on the professional activities of foreign architects in the Soviet Union.

A. Volpert, a German journalist and art-historian from the museum of Bauhaus, has followed the traces of the Bauhaus students who together with Hannes Mayer went to work in the Soviet Union as *der Roten Bauhaus-Brigade*. This way she found out that one of them, Béla Scheffler, after two years working in Moscow was in 1932 commissioned to Uralmash in Sverdlovsk. In collaboration with N. Obukhova an art-historian from the museum of Uralmash (Ekaterinburg) Volpert inverstigated Scheffler's Uralmash period and discovered that he had worked there for ten years, then was accused as a German spy and executed. The forgotten name was rehabilitated. In 2002 Volpert and Obukhova turned on an exhibition in Ekaterinburg, dedicated to the hundredth anniversary of Scheffler and issued a catalogue *Neizvestny Architektor Bauhausa na Urale* (an Unknown Architect of Bauhaus in the Urals), Ekaterinburg, 2002.

The faculty of Architecture TU Delft is a place where interest to the subject is relatively high. There are contributions about Dutch architects in the USSR, such as U. Barbieri, H. Tilman, "Westerse Architecten in the USSR (1917-37)", *Plan*, 1979, nr. 4, p. 25-44. G. Oorthuis, another researcher of the faculty, studied the works of Mart Stam and traveled to Magnitogorsk. Many contributions belong to his hand and among them "Portrait of an Architect", *Rassegna*, 1991, nr. 47, p. 6-15; "Op Zoek naar een Woonwijk in Magnitogorsk", *Trouw*, 29 November, 1990.

Taking a PhD thesis also contributes to the study. *J.B. van Loghem: Architect van een Optimistische Generatie*, Delft, 1998 by R. Eggink contains a chapter about van Loghem's projects for Kemerovo, Siberia.

In 2004 I. Nevzgodin completed a PhD dissertation *Het Nieuwe Bouwen in Siberië: Architectuur en Stedenbouw in de Jaren 1920-1940*. This work is a part of a bigger research on the Soviet architecture at the IHAAU, as well as mine. In terms of concept Nevzgodin's and my studies are related, in tersms of examination of the same phenomenon. The Ural and Siberian regions are also related by the Industrialization program; hence, their

stories have facts in common. In this way Nevzgodin has already indicated some details that are also involved in my research: the formation of the Ural-Kuznetsk combine; the arrival of the foreign specialists (the brigade of Ernst May and others) for designing new settlements, and so on. For the rest, Nevzgodin's research is strictly specialized in Siberian matters and does not contribute to the study of the Ural phenomenon.

As we can see, much is published presently on the general topic of modernism, while little is done on the field of the regional studies of it. This dissertation is going to be the first introduction of avant-garde architecture and town-planning in the Ural region to the Western reader.

1 Ginzburg, M., *Zhilistche* (Dwelling), Moscow 1934, p. 148-169.
2 *Sovremennaya Architectura*, 1928, No. 1, p. 38-39; No. 4, p. 120-122.
3 To get a better insight into recent publications on Socialist realism see for example: Castillo, G., "Classicism for the Masses: Books on Stalinist Architecture," *Design Book Review* 35/36, 1995, p. 78-88; Gerrits, A.W.M., "In Stalins Kampen en Steden," *NRC Handelsblad*, 24 June 1995; etc.
4 *Archithese*, 1976, nr.19, p.43-48
5 Volodin, P., "Sverdlovsk", *Architectura Gorodov SSSR*, Moscow, 1948, p. 20
6 Shelushinin, A., "K Istorii Architectury Sverdlovska. Constructivism 1920-1930 Godov", *Iz Istorii Khudozhestvennoy Kultury Ekaterinburga-Sverdlovska. K 250-letiyu Goroda*, Sverdlovsk 1974, p. 82
7 May, E., "Cities of the Future", *(The Soviet) Survey*, 28 October 1961.
8 Kotkin, S., *Magnetic Mountain: Stalinism as a Civilization*, Berkeley-Los Angeles-London, 1995, p. 110.
9 This means the same as "Greater Sverdlovsk", but given as it was published in the magazine.
10 Tokmeninova, L. "Architectural landmarks of the Soviet period in Yekaterinburg", *Project Russia* 2000/3, p. 82.

CHAPTER I

Modern Movement in the USSR

Was modernism a product of the development of West-European culture that reached Russia in the end or, on the contrary, did it result from exporting Russian avant-garde ideas to the West – ideas that were further developed there?

This is an introductory chapter. Before we begin to speak about the Ural Region, we should familiarise ourselves with the underlying cause of events that took place in architecture and town-planning there. That is why; we shall first dwell upon the situation in the 1920s-1930s in the centre of the Soviet country and abroad, in Western Europe and America. The events described do not represent a complete historical picture of that period. The facts and persons that are described in this chapter have been selected in accordance with one criterion: they have defined the development of architecture and town-planning in the Urals.

The Early 1920s: Formation of the "New Style"

"Revolution in architecture began, as everywhere else, with overthrowing the old. […] Radically minded artistic and technical intelligentsia, the majority of whom observed the proletarian revolution in a detached way, while sympathising with it, was swept along by the revolutionary "gust" and excited by the dazzling slogans of the October (revolution) and was persistently looking for the "new means of architectural expression" worthy of its times, of its "blazing epoch."

R. Khiger[1]

The First Steps of Soviet Architecture

Post-revolutionary Russia was busy with liquidating the disorder and collapsed economy, but theory outstripped practice. The attempts to formulate the new creative credo gave rise to a great many of ideas and opinions. In the first half of the 1920s, architects enthusiastically held discussions and published various declarations, manifestoes and charters. Competitions gave every creative association excellent possibilities to make its position public and to prove that it had realistic advantages. The largest architectural association of Moscow – *MAO* (the Moscow Architectural Association) represented a wide range of trends: from the restorationists and traditionalists to the new architects who occupied all kinds of positions. In their views of creative architectural work, the leaders of MAO and its most active members were not always consistent. For example, in 1923, the first issue of the magazine *Architectura* (Architecture) was published. Its opening editorial "Estetika Sovremennosti" (The Aesthetics of the Present Times) was written by M. Ginzburg. He praised the machine as a source of inspiration for architects. He rejected the existence of absolute beauty and any absolute idea in architecture. In his opinion, in all times, ideas in art were just products of their times. When discussing a pluralism of opinions within one organisation, we should point out that the above-mentioned article by Ginzburg by no means stated principles shared by the whole Association. For example, its chairman, A. Shchusev, was of a different opinion about the role that achievements of technical progress played in architecture. He gave a positive appraisal of the exchange of experience and search for the new ways "together with the architects of the whole world", he hoped that Soviet architects would take the best and reject "deliberate, inten-

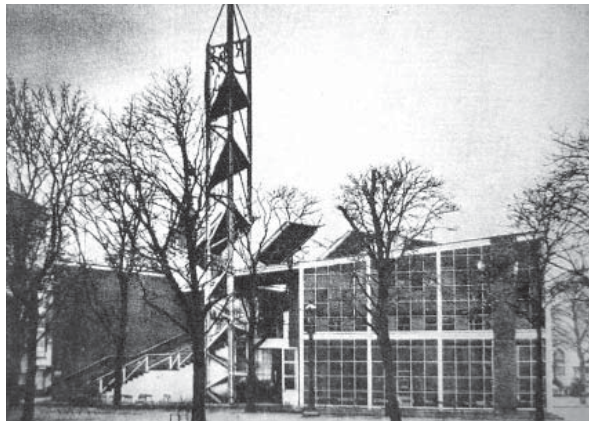
tional adjuncts, appendages that accompany every growing trend." Later, in his article "Architectura i Gradostroitelstvo" Shchusev talked about an important role that not only technical specialists, but also art workers play in the construction process.

"Architecture, in its essence, is closely linked to technology and at the same time, it should introduce an element of artistic composition and creative fantasy that are so much needed when creating city centres, into technical and production prerequisites. Unfortunately, this truth has not been fully realised yet."[2]

The leadership of MAO published in the pages of their magazine the article by Ginzburg, which described a constructivist programme, and, moreover, informed of the methods of functional design. At the same time, during the selection process for the Palace of Labor project in Moscow, the leadership gave the first prize to an ostentatious project by N. Trotsky. The brilliant project by the Vesnin brothers that fully met the theses of the editorial in the magazine of MAO was awarded only the third prize. It was I. Zholtovsky who insisted on the award. The jury took into consideration his argument that the recognition of the constructivist project by the Vesnins would contribute to the creation of the left-wing image of the entire Moscow architectural enclave. In 1923 the casting vote in Soviet architecture still belonged to the traditionalists.

Soon, however, the situation would change. In 1923, the style of the new architecture had already been clearly established in many projects; and it was the new materials and constructions that played the key role in it. The project selection process for the Soviet Pavilion at the International Exhibition in Paris, 1925 that was held by the Government in 1924, demonstrated that new architecture had firmly established its position. Moreover, the competition testified to the fact that the adherents of the new architecture had been divided into conceptual-and-stylistic factions. The main requirement was that the Pavilion had to be original, to stand out from common European building, that its image had to embody the new power and that its construction had not to be expensive. Among others, the following architects were invited to compete: the Vesnins, Ladovsky, Melnikov, I. Golosov, Fomin and Shchuko. It is of interest to note that only Fomin and Shchuko were invited from among the masters representing the traditional school, and neither the entry by Fomin based on the Doric order system, nor the

fig. 1.1



project by Shchuko were awarded any prizes. The projects by Ladovsky (2nd place) and Ginzburg (3rd place) marked two newly crystallised trends in the modern architecture of Russia: formalism (rationalism) and constructivism. In Ginzburg's project, constructivism is represented by the elements of industrial construction: one could view constructions and staircases inside the glazed tower.
Ladovsky concentrated his attention on proportioning mass and tectonics in his facade composition. The project by Melnikov took the first place; it was a personal interpretation of the new architectural concepts emerging in the USSR (fig. 1.1). His famous project with a rectangular plan that was diagonally cut by a staircase, criss-crossed shields of the ceiling, optimistically pointing upwards, and a well-proportioned glazed tower at one of the entrances, exemplified Melnikov's method of creating an expressive and tense architectural composition.

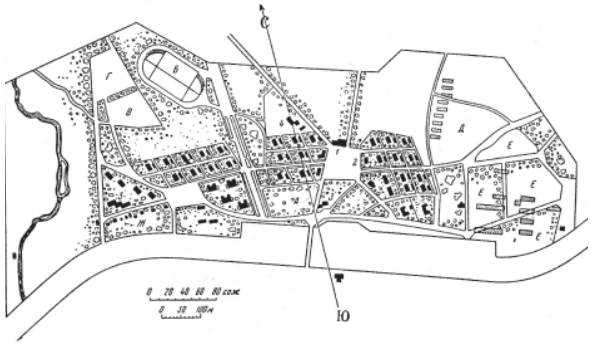


fig. 1.2

Meanwhile, Leningrad, another cultural capital, was also rich in architectural activity. At the beginning of the 1920s, two organisations shaped architectural life there: *LOA* (the Leningrad Association of Architects) and *OAH* (the Association of Artist-Architects). Similar to MAO, those were associations that did not have any definite creative programme. The range of their activities included holding exhibitions, workshops and competitions, protection of the monuments of art and antiquity, consultative assistance to construction organisations and the revealing of the new architectural style.

The New Tasks

The change of social system resulted in unprecedented architectural tasks; architects were expected to solve problems that had never been raised before. Town-planning, housing construction, and new types of public, administrative and industrial buildings – such were the three main sectors that

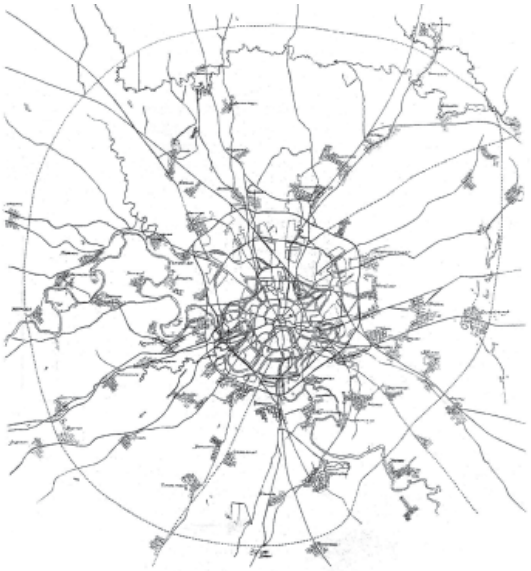


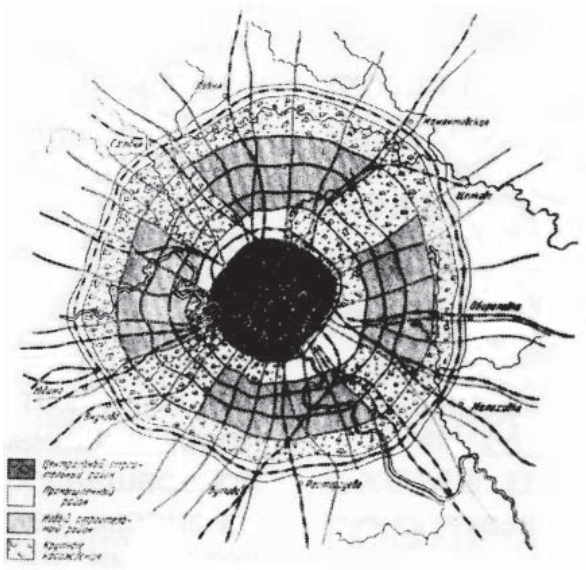
fig. 1.3

the Soviet architects had to investigate and develop.

The introduction of the new planned economy and the abolition of private ownership of land opened up new paths for Soviet town building. In the early 1920s, the First Town-planning Discussion was held; it considered the prospect of development in accordance with the *GOELRO Plan* (the Plan of a State Commission for the Electrification of Russia) under *NEP* (New Economic Policy) conditions. The main tasks of that period were the reconstruction of the existing cities and the construction of workers' settlements at industrial enterprises. For the first time, the concepts of the functional zoning of the city, the network of communal utilities and consumer services and public centres were defined. The development of the new types of settlement and searches for a flexible planning structure began.

Howard's idea of the *"garden city"* was especially popular as an initial starting point for designing. *Obschestvo Gorodov-Sadov* (Association of Garden Cities) headed by the architect V. Semionov had been advocating their introduction in Russia from pre-revolutionary times. At that time, electric-and-oil stations (or similar, medium-sized, enterprises) represented the main newly erected industrial buildings, around which small settlements were formed (fig. 1.2). Construction of such settlements in accordance with the model of the "garden city" seemed to be the most logical solution. The popularity of "garden city" influenced the reconstruction of cities, too. Architectural researchers were mainly interested in Moscow and Leningrad; many projects were developed for them. There were proposals to plant more trees and shrubs in the city, and to "unload" the city when restoring its destroyed parts. In fact, it was implied that cities had to be broken into smaller parts. For the first time, the issue of eliminating the "border" between city and village was on the agenda. Many architects saw the "garden city" as the key to the solution to that problem (fig. 1.3). Moreover, the model of the "garden city" cor-

fig. 1.4



responded to the economic and demographical changes that had taken place at that time mo st of all.

Those who were against the realisation of the concept of the "garden city" stressed such disadvantages as disintegration of the city organism into separate parts and the lack of communication with the suburbs, and the fact that it implied a refusal to envisage future development, which was its main disadvantage. To counterbalance the above mentioned, the idea of an agglomerate-city, *"greater city"* was suggested. A well-known example here is the plan of Greater Moscow by S. Shestakov that envisaged four million inhabitants (fig. 1.4). In this project (1921-25), which symbolised the transfer of the country to NEP, all the suburbs had to connect with Moscow, which allowed for the possibility of developing the city territorially in the future. Around the territory of Moscow that had to be increased ten fold and rationally zoned, the system of satellite cities bordering on Moscow was planned. The Kremlin, as a museum complex, was supposed to be opened for the public, and a new political centre had to be located in the Northwest of the capital.

The project was based on the ideas of the social-democratic parties of Europe. The solution of the housing problem had to be reached without the interference of the state; the state provided only the town infrastructure. It was recommended that family houses be build, which were to be financed by the public, banking credit and elements of mortgage. The projects implied the development of cooperatives, lease of land, etc. All this was to help Moscow to acquire the qualities of a centre of "gravity" not only theoretically, but also practically. On the whole, architects attempted to solve all town-planning and resulting architectural issues as a whole, according to the aims of the system of *socialist settlement*.

A social order for a new type of housing that reflected the new way of life of the Soviet working people resulted from the above-mentioned ideas. The options were to give every family its own house with an individual plot of land, as it was proposed in the garden cities, or to stop viewing the institution of family as a "nucleus" of the society, to give everyone minimum conditions of living and collectivise *byt,* or everyday life. Development in accordance with the first option was not quite acceptable due to well-known economic reasons. The second option looked much more promising. In the course of time, the originally temporal barrack-like structures were transformed into the most well known housing of the new type – *communal houses*.

Communal houses represented a form of communal living that promoted collectivist principles and, consequently, communist consciousness among the dwellers. Communal services, such as establishments for children, communal canteens, laundries and bathhouses played an important role there. As far back as the end of the XIX century, a residential block was in the main typologically uniform. In 1923-24 the architects L. Vesnin, S. Cheryshev and N. Kolli built the block with public buildings for the first time. Introduction of this form of service envisaged relieving women of housework, particularly cooking; the thus saved time could be used more efficiently in production of goods and civic activities. The next step was the proposal of a *kitchen factory* in 1924. As dis-

tinct from factory canteens, kitchen factories were meant to serve as public catering establishments for residential communities. They also cooked for public canteens; food was placed in special thermal containers and carried to workplaces. The kitchen factory building was equipped with an automated food processing line, lifts, a refrigerating chamber, etc. Public bathhouses, in addition to their direct application, also fulfilled an additional civic function as social centres.

Ideological work was another constituent of the new byt. Workers' clubs became disseminators of socialist culture. Clubs began to emerge immediately after the revolution and were quite different: from the *red corners*, or rooms for recreation and education at communal houses, to Houses and Palaces of Culture – district and city clubs. At the beginning, they were housed in the existing buildings, but soon architects undertook the development of individual types of workers' clubs.

From the first years of the Soviet power, promotion of a healthy way of life among the working population became one of the main aspects of the health care and cultural policy of the state. That is why, a great demand for the new types of sports and health-improving structures emerged. Architects developed projects of stadiums, *parks of culture and rest* (parks with organised entertainment), and sanatorium and hospital complexes.

It is also hard to overestimate the role of public-and-administrative centres that fulfilled the representational and propagandist functions to the greatest extent. The system of public organisations was being formed and new types of buildings, the design of which reflected specific activities of those organisations, were needed. That was how Palaces of Peoples, Palaces of Workers, and Palaces of Labour emerged; at the beginning they combined in themselves various public and cultural functions and communal services. The buildings that housed administrative and business organisations, new types of places of entertainment, such as a *synthetic theatre*, and educational institutions became important constituents of the new centres.

Professional Contacts, International Cooperation

The world was informed that after a forced "quiet" period that resulted from economic depression, Russia embarked on the path of quickly developing practical construction. That was how Soviet Russia found itself the focus of attention. It gained new practical and educational experience and wanted to share it with its foreign "comrades-in-arms." The initiative was met with enthusiasm. Projects of the Soviet architects were published in foreign magazines, such as *G* (*Zeischrift für Elementare Gestaltung*), *Wasmuths Monats Hefte für Baukunst* in Germany and *L'Architecture Vivante* in France. In their turn, such periodicals as the German *Stadtebau*, *Deutse Bauzeitung*, *Baugilde*, *Das Neubau*; English *The Architectural Review*, *The Architect*, *The Studio*; French *La Construction Moderne*, *L'Architecture*, American *American Architect*, *Engineering News-Record* and many others became popular in Soviet Russia.

If there were any disparity between the Soviet and Western architects at that time, it could be due to the vast territory of Russia. Otherwise, there was no difficulty in the exchange of news, and the issue of social distinctions was limited to professional terminology.

Contacts with Germany were organised especially well. When the news of constructing *VkHUTEMAS* (The Higher State Art-Technical Studios) reached Germany, Walter Gropius formed and headed a group of advanced progressive art workers and established the Bauhaus School in Weimar in 1919.

In March 1922, in Moscow a non-governmental association of Soviet intelligentsia was estab-

lished – the *Association of Russian and German Cooperation*. The main aims of the Association were to foster a friendly relationship between the public circles of Russia and Germany, to disseminate objective information on the economic and cultural development of both countries; to create favourable conditions for joint work in the scientific and technical, cultural, trading and industrial areas. After that, in June 1923, *Die Gesellschaft der Freunde des Neuen Russlands* was established – the first foreign organisation promoting cultural cooperation (later, they became widely spread), was established in Berlin. Outstanding workers of culture and science that later became Nobel Prize winners, such as the writer Thomas Mann, the scientist Albert Einstein, and many other prominent representatives of German intelligentsia were at the head of that Association. Bruno Taut, Peter Behrens, Hans Poelzig, Ernst May and others came to *Die Gesellschaft* from architectural circles.

The architect El Lissitzky acted as a cultural "envoy" between Soviet Russia and Western Europe. In the first half of the 1920s the Soviet Government sent him to travel across Europe for four years, both to promote the ideas of the Russian avant-garde and to act as its striking representative. He created links between Russian and Western artists, between Bauhaus, De Stijl and Constructivism. Lissitzky arrived in Berlin in 1921 and set up exhibitions of art created by the post-revolutionary avant-garde. He also worked as a writer and designer for international magazines. In 1923, the artist visited Hannover, where his work was exhibited under the sponsorship of the Kestner-Gesellschaft. In 1923, Lissitzky also created his Proun Environment for the *Grosse Berliner Kunstausstellung* and executed his lithographic suites *Proun* and *Victory over the Sun*. He had many contacts in the Netherlands at that time. Among others, he met Theo van Doesburg; he was also interested in the work by Gerrit Rietveld under the project of Schröder Huis; at one time he expected to collaborate with J.J.P. Oud. However, as a result, he preferred to collaborate with Mart Stam. In 1924, he worked with Kurt Schwitters the issue of the periodical *Merz* called "Nasci," and with Arp on the book *Die Kunstismen*.

The Second Half of the 1920s: From Theory to Practice

"The latter[3] keeps abreast of the progressive architecture of the West, – and the work of the Soviet architects have a ring of the strivings of Gropius, Mendelsohn, Corbusier, Maller-Stevens and other progressive architects of Germany, France and Holland. Modern construction materials and methods of erecting buildings break off with the previous methods of decorating buildings."
D. Arkin[4]

The Establishment of Creative Platforms

By 1926 the period of restoration of national economy was over. Soviet Russia headed for industrialisation. For architects, it was the time to regulate the spontaneous creative activity of the first post-revolutionary years.

By the mid-1920s, "militant" voices became more often heard in the professional polemics; discussions tended to turn into heated arguments. Considerable disagreements emerged in the ranks of the Russian supporters of new architecture. The emphasis in architectural debates was transferred from purely professional sphere to the sphere of politics and ideology. A long-awaited time of defining the principles of new architecture unexpectedly brought about a conceptual "schism." A. Shchusev, as the leader of MAO, approached that problem as a peacemaker.

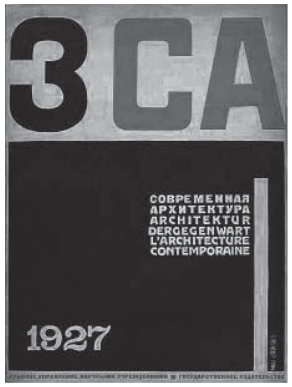


fig. 1.5

"Consideration of the free creative work of various groups of architects that are united by one or other ideological principles, shall by no means be "squeezed" into the narrow framework of doctrines; on the contrary, the collective solution of one or other tasks that are dictated by life, should be welcomed and open to scientific criticism."[5]

However, his response was somewhat belated. Discussions that Shchusev was calling for did take place, but no longer within the framework of one architectural association. By that time, the architectural enclave that had been first separated inside MAO, had already formed three clear creative platforms: MAO, *ASNOVA*, and *OSA*.

In 1925, OSA (All-Russia Association of Modern Architects) was established as a creative association of the constructivists. The group failed to gain official recognition at once. It took them one year to overcome bureaucratic resistance, to prove their right for independency alongside with already existing architectural associations, especially, MAO and ASNOVA. Before the association was formally registered, the constructivists had established their periodical, the magazine *Sovremennaya Architectura* (Modern Architecture), abbreviated as *SA* (fig. 1.5). Out of all the architectural organisations, only OSA managed to establish its organ of the press that, distinct from others, did not cease its existence after the first or second issue, and was regularly published for five years. *SA* familiarised the public with theoretical investigations of the constructivists, such as their functional method, and informed them of the examples of applying theory to practical solutions of issues concerning housing and public and industrial construction.

OSA ideas and the popularity of the magazine *SA* were responded to in different areas of the country. Simultaneously with the establishment of OSA in Moscow, a branch was formed in Leningrad, under the auspices of the Institute of Civil Engineers. In Leningrad, A. Nikolsky, a practicing architect and teacher, headed it. Later, local branches of the constructivists emerged in the cities of Sverdlovsk, Kazan, Tomsk, Novosibirsk and others.

Establishing their creative credo, members of OSA at the same time criticised their opponents, who not long ago were their comrades-in-arms. All their argumentation for the establishment of the new ideological principles was, in fact, based on that criticism. "The theoretical, scientific-research and production work that is proposed by the Association may be successfully realised, and may begin working for the benefit of the state, only if there is a group of people, united by the same ideology, which is impossible in other associations that represent a mechanical mixture of people united only by their profession."[6]

MAO was criticised by the constructivists for their tolerance towards the traditionalists and restorationists. "The Moscow Architectural Association unites a great number of architects who have different ideologies, that is why the ideology of modern architecture that is necessary at the moment for the solution of creative tasks cannot be formed there with a sufficient clarity."[7] The restorationists were particularly offended, and one may give credit to the steadfastness of those people who, in an atmosphere of massed appeals for the destruction of the heritage of bourgeoisie in the name of new life, were constantly called "the gravediggers of the past" or the "spokesmen of atavistic ideas" and, in spite of that, remained true to their principles - fortunately for the constructivists themselves, who did not realise at that time what was in store for themselves and new architecture in the very near future.

ASNOVA (Association of the New Architects) became the main object of critical attacks on the part of OSA in their fight for independence. ASNOVA was organised in 1923 under the auspices of VkHUTEMAS by professors N. Ladovsky and N. Dokuchayev. This was already enough to provoke feelings of jealousy on the part of the members of the group, the expedience of the existence of which had still to be proved. ASNOVA considered that its main task was to achieve the synthesis of architecture and other kinds of art to create the new art. In connection with this, the supporters of OSA criticised the Association for the abstractionism and the primitivism of many of their concepts; the idea of expressiveness that was out of touch with the realistic needs, was subjected to the greatest denouncement. "ASNOVA is an association with a small group of architects that have definite ideology, the essence of which is reduced to the search for purely aesthetic abstract form." Whereas OSA "collectively solves and practically brings to life new architectural form that functionally results from the purpose of the given structure, its material, constructions and other production conditions, meeting the specific tasks set by the socialist construction of the country."

In its turn, ASNOVA could not but express its suspicions with regard to exceptionally strong and friendly relationships with foreign colleagues. That conflict deepened. The accusations of Westernism, capitalist orientation and lack of dialectic approach were repeatedly brought forward against OSA constructivists by rationalists of ASNOVA. Making projects was not of great importance for ASNOVA members, especially in the early stages. They dedicated themselves to the study of architecture, in particular, architectural form, from the scientific point of view and in that way they have made an invaluable contribution to the establishment of the basis for the new type of architectural education.

OSA – the Absolute Leader of International Contacts

Counting on modern materials and technologies as well as developing new concepts in the area of town building, OSA members presented the greatest interest for Western architects. M. Ginzburg defines 1924-25 as the time when the achievements of Western architects began to influence the everyday work of the Soviet architects

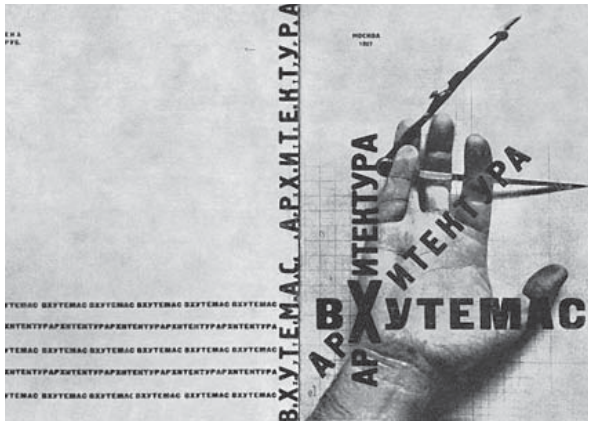


fig. 1.6

through a number of magazines. The period preceding it, in his opinion, was the "time when the Soviet architects worked in complete isolation from the West and America, and the similarity of certain solutions of our and foreign comrades was explained by natural conclusions made from similar constructive prerequisites." Was it by chance that one of the OSA leaders associated the date of the official establishment of his group with that statement? One way or another, the first five years of the history of OSA are rich in facts and events which confirm this. Thus, for example, in 1927 OSA initiated an "Exhibition of Modern Architecture" in VkHUTEMAS (fig. 1.6). For the first time, the works in such topical areas as town-planning, new housing, public and industrial architecture were presented for the public. A "foreign sector" of the exhibition represented an alternative to what Soviet architects offered, as adherents of functionalism were not numerous among foreign architects.

Foreign participation had to symbolise strengthening ties between architects of different countries, not only in the area of art, but also in the cultural and political arena. Professional periodicals that informed of the exhibition had appeals to "be equivalent" to Western achievements, for example, in using standard houses in the projects of settlements, where the works by Le Corbusier and Bruno Taut had considerable advantages, representing examples of the new architectural ideology. The same referred to the propositions concerning workers' housing by the Dutch J.J.P. Oud, Gerrit Rietveld and Cornelis van der Vlugt, and the projects of buildings housing educational establishments that had been developed by the representatives of the Bauhaus. Other reviewers criticised the one-sidedness of the exposition that, to their minds, represented only the works of those who shared the views of the OSA.

From the very beginning, in the pages of *Sovremennaya Architectura*, members of OSA supported the idea of foreign cooperation in the establishment of new architecture and believed it to be of considerable importance. They familiarised the reader with the latest architectural trends and their representatives by outlining the differences in the principles of Soviet architecture and those of the architecture of Western Europe and America. Of importance was the exchange of practical experience. International inquiries that were published in the issues of *SA* had to contribute to that exchange. For example, Behrens, Oud и Le Corbusier were asked about the technological possibilities and advantages of flat roofs. Among the questions of inquiries were those that concerned communal houses as the type of housing for the society of the future.

Welcome to Foreigners

In the mid-1920s, a number of Western architects visited Russia for the first time. The aim of their visits varied from short-term familiarising excursions to long-term business visits. The Soviet Government accorded a hearty, friendly welcome and offered unreserved support to them. It is of interest to note that the ideological preferences of foreigners did not yet play a decisive role at that time.

In October 1925, Karel Teige, one of the leaders of the Czech avant-garde, a member of the Communist Party and an admirer of OSA, visited Moscow and Leningrad with a group of the left-wing intellectuals. The trip made a great impression on Teige – not only because of the acquaintance with

the works of avant-garde architects and artists, but also because of the revolutionary enthusiasm that was still felt in the Soviet Union. On his return, Teige published his impressions in the magazine *Stavba* (he was its editor-in-chief), in the article "Konstruktivismus a nová architektura v SSSR."[8] He interpreted the works by Tatlin, Malevich and Lissitzky in a new context, and told about ZhIVSCULPTARCH, VkHUTEMAS and the protagonists of the new architecture – Ginzburg, Melnikov, the Vesnin brothers and others. For the Europe of 1926, that was very valuable information that had few analogues.

Unlike Teige, Erich Mendelssohn did not experience slightest sympathies to the Bolsheviks. In 1925 Mendelsohn received an order to construct the textile factory "Krasnoye Znamya" (the Red Banner) in Leningrad. The project was realised, but only partially. Two trips to the USSR in 1925-26 and the work with Soviet clients only strengthened his dislike of the Soviet dictatorship. However, during his trips, Mendelsohn made contacts with the leading Soviet architects of that time. It is of interest to note that among all his Soviet acquaintances, Mendelsohn seemed to produce the greatest impression on academician Aleksey Shchusev, the author of Lenin's Mausoleum and the classic to be of Stalinist architecture. The building of the Narkomat (People's Commissariate) of Agriculture in Moscow strongly resembles Schocken Department Store that was built by Mendelsohn in Stuttgart in 1928 (fig. 1.7).

fig. 1.7

J.B. van Loghem was invited in 1926 by Sebald Rutgers. That was how he became the first Dutch architect to work in post-revolutionary Russia.[9] He was offered the opportunity of taking part in the project for an autonomous industrial colony – AIK KUZBASS in the city of Kemerovo. Two civil engineers, the Dutchman Sebald Rutgers and the American Herbert Calvert, in 1921 initiated the project within the framework of the programme of the industrialisation of coal mining in Kuzbass which was supported by Lenin himself.
Van Loghem sympathised with socialist ideals. and went to the city of Kemerovo immediately after receiving the invitation. He was in charge of the architectural and construction part of the project which was the system of communication between the coal mine and the adjoining residential area with the essential network of services. On his arrival in Russia in March, van Loghem faced the problems of lack of various resources such as time and construction materials. This served to stimulate his enthusiasm and inventiveness.

Planning layout was carried out directly on site; to manufacture bricks, the needed ingredients were found and brick kilns were built. It is significant that Van Loghem had complete freedom of action and used technical innovations both in the engineering preparation of the site and in the technology used in its construction. In less than two years in Kemerovo, and in spite of technical difficulties, Van Loghem achieved a lot; he carried out the main bulk of the work. It was obstacles of a non-technical kind that brought his work to a standstill.
By 1927 changes in the political climate of the country, such as the strengthening of the bureacracy and an ideological hatred of foreigners (xenophobia), had occurred. Van Loghem was forced to return home.

The Turn of the 1920s: the First Five-Year Plan for Industrialisation

"Wenn für irgend ein Gebiet in der U.d.S.S.R. zutrifft, daß die Revolution noch in vollem Gange ist, so für das des Städtebaues und Wohnungbaues. Das ist nicht weiter verwunderlich, denn die Ersetzung einer jahrtausendealten Gesellschaftsordnung durch eine neue ist ein Prozeß, dessen Abslußoder auch nur dessen eindeutig klare Richtungsfestlegung unmöglich nach der kurzen Zeitspanne von einem Dußend Jahren abgeschlossen sein kann."
E. May[10]

The Tasks of the Transition Period

In 1927 Stalin finally concluded that the Second World War was inevitable. 1927 was actually the beginning of industrialisation in the USSR. The industrialisation was to be achieved by a series of five-year plans. The first five-year plan was carried in 1929. During that period, the main focus was not on the manufacture of armaments, but instead on the establishment of an industrial base that would later be used to produce armaments. The Soviet state planned the construction of a whole series of new industrial cities.

fig. 1.8
The cover of Sabsovich's book *Sotsialisticheskie Goroda*, 1930

In 1929, in accordance with the acceleration of the rate of industrialisation of the country, the town-planning debate was re-opened. Apart from the fact that the tasks of architects had to be carried out within a shorter period of time, the priorities changed and had become more complicated. Together with the problem of reconstructing cities, the need to construct new industrial centres had become urgent. An optimal strategy of planning new communities and a service network was required.
The rejection of the "capitalist way of concentrating the population" and the transition to more "equable socialist settlement based on a lessening of the contradictions between city and village" was the key note of the discussion that continued for almost three years.

Two main approaches to the solution of the contradiction between city and village came out of the discussion. The *desurbanists*, mostly followers of Howard's concept, promoting the idea of de-centralization of large cities, opposed the *urbanists*, who saw the future of Soviet cities in increasing the city-planning scale and increasing the economic power of the country through industrialisation. However, both extremes had been rejected by the end of the discussion. Instead of the ways proposed by the urbanists and desurbanists, an intermediate concept was adopted: it was decided to limit the further development of big cities and stimulate the development of small and medium-sized cities, retaining individual households for the people in the cities, which made the differences between city and village less considerable. Thus, the concept of *sotsgorod* (socialist town) was adopted.
Many architects worked on the development of the sotsgorod. L. Sabsovich was its most active proponent (fig. 1.8). He spoke out against large cities as a typical product of capitalism and offered to limit the size of the population in residential areas from 40-50 to 80-100 thousand people. The principle of a sotsgorod was based on the building of homes around large industrial and agricultural enterprises. This formation made it easy to control and manage all social processes and provided to every inhabitant equal living conditions and equal cultural and communal facilities.

Sotsgorods were compact and regular in plan. The main structural unit of a sotsgorod was *zhilkombinat* (housing combine), a block for 4-3 thousand inhabitants, representing a multifunctional complex, in which public and residential buildings were linked together with galleries creating a single servicing system within a block (fig. 1.9). Comb, perimeter and carpet-structured housing estates alternated with patches of greenery, implementing the idea of a "garden city." A sotsgorod was considered to be the optimal way of overcoming conflicts in the matters of socialist settlement. Sabsovich's idea found support in a series of government ordinances of the early 30s, such as: "Ob Ustroistve Naselennykh Mest" (On Residential Areas Arrangement), "O Perestroike Byta " (On Living Conditions Restructuring), "O Moskovskom Communalnom Khozyaistve" (On Moscow city communal facilities).

In 1930 the economist S. Strumilin suggested an interesting way of constructing the new socialist cities. To raise the quality of living standards of the working people, he proposed uniting a few residential blocks with the help of common cultural and communal facilities. That was how the new type of residential area – an enlarged block, or *mikroraion* (a self-contained sub-district in

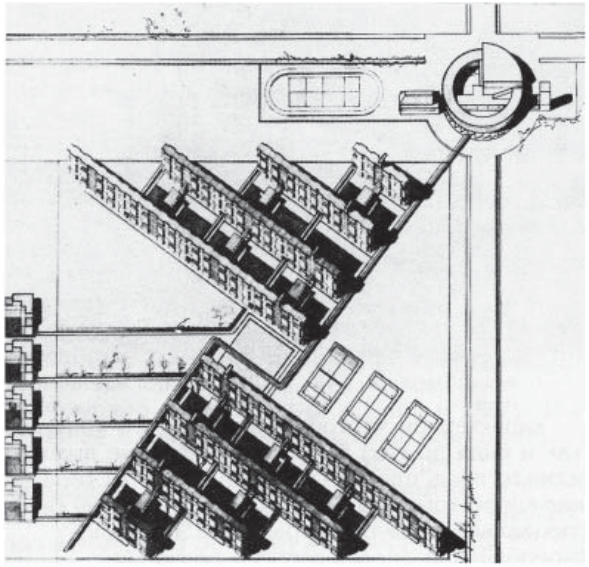


fig. 1.9

terms of shopping facilities, schools and other services*)* emerged. *W*hen developing his idea, Strumilin evidently borrowed from the formula of a *Neighbourhood Unit* by the American Clarence Perry, which had been published one year earlier – the formula that had been developed specifically to suit the conditions of New York and was an attempt to make the organisation of a residential district optimum. This was to be done in two ways. Firstly, by dividing the transport and pedestrian flows within its boundaries; and secondly, by devising a formula to decide the location and capacity of schools based on the number of residents in the given territory (fig. 1.10).

The constructivists of OSA made a considerable contribution to the development of the needed

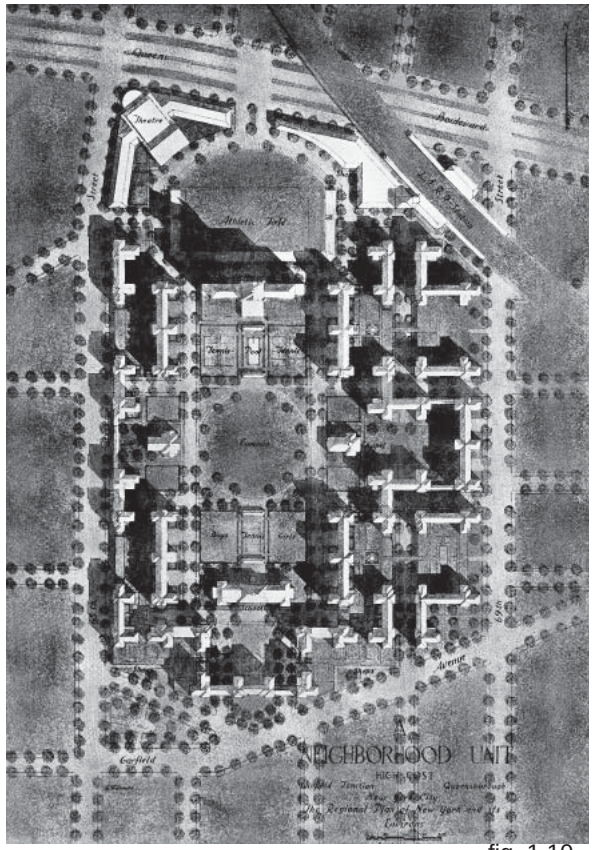


fig. 1.10

strategies required. For this reason, their investigations deserve a closer look.

OSA and Socialist Settlement

Constructivists took a scientific approach to the problem of establishing new living standards in the USSR. In the period from 1928 to 1932, they investigated various ways of solving the housing problem and achieving the development of new

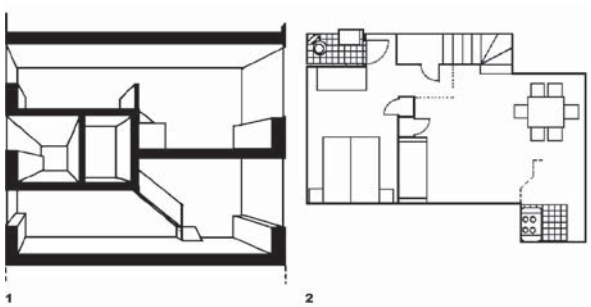


fig. 1.11

settlements. The work may be divided into three time periods. All three phases of investigation were carried out under the auspices of different organizations. Each phase had its priority tasks, and strategies for their solution.

In 1928-1929, during the period of housing construction within existing cities, the main efforts were directed towards solving economic problems: reducing construction costs, technical modernization, style designs, and standardization. In large housing complexes the idea of a new social type of dwelling was based on programmed collectivisation of households (economic units). For the first time, the capabilities of network system of services were taken into account in district planning. The work of designing new types of dwelling was carried out in the *Standardization section* of *Stroikom RSFSR*. Headed by M. Ginzburg, the group of designers included P. Pasternak, M. Barshch, and V. Vladimirov. The objective was to develop a dwelling unit for each family. The Stroikom section concentrated primarily on an analysis of the dwelling unit layouts in rented accommodation, then common in architectural practice, from the point of view of efficient use of space. As a result of such analysis, a series of new layout types was proposed.

These types, denoted from A to F, varied from type A- traditional multi-room flats, to type F, a radical innovation: miniature individual units destined to eliminate the family as an institution and complete collectivisation of all life aspects, except for night sleep (type E). Like the available dwelling types, the new designs also underwent comparative analysis for efficiency. As a result of the analytical study of all practical capabilities, members of the section came to a conclusion that the key to the problem lay in designing standard, small cubical-content (primarily, one-room) dwelling units.

At the same time, ways to bring down dwelling cost were being investigated. In the process of planning rationalization, special attention was given to reducing the auxiliary areas of the dwellings. Thus a range of rational planning designs (apartment types) was worked out and recommended for use in construction. A distinguishing feature of the dwelling units was their spatial organization: designers reduced the height of service rooms in apartments thus increasing the height of living rooms. The effect was achieved at the expense of apartments being arranged one over the other with mirror-symmetry in apartments orientation in each floor.

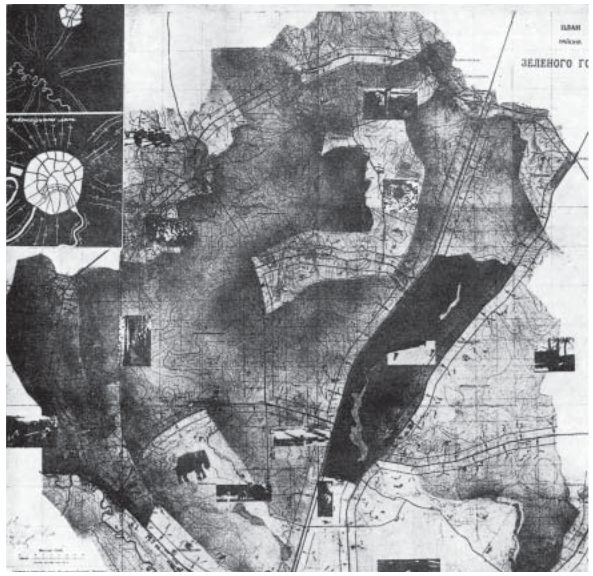
The standardization section proposed different variants on four main methods of arranging dwelling units, placed along a naturally lit and aired corridor serving one floor in the case of type C units; two floors in case of type D and F units; or three floors in case of type E units. The principles of economic efficiency of dwellings singled out type F as the most efficient way of placing individual families in compact apartments (fig. 1.11).

Three more variants of type F were proposed: 27 sq.m, 30 sq.m and 31 sq.m floor area. In each of these cases, unit F presented a one-room flat with a small entrance hall, with six steps leading either up or down to a living room 3.2 or 3.5 m high with a “kitchen element” with standard equipment hidden behind a curtain. Lower rooms (2.25 or 2.15 m high) served as an alcove for bed and had an adjoining sanitary facility, which included toilet and bathroom.

In 1929-1930, in connection with active industry development and the building of new cities, architects’ efforts were concentrated on theoretical research. Architects proposed settlement programs resulting from the necessity to design big industrial areas. Actually, the problem of district

planning was posed for the first time.
This period is noted for radical conclusions and schematic solutions. In 1929 the uniformity of the conceptual line of OSA underwent serious testing. Whereas the Vesnin brothers were developing and improving the idea of sotsgorod and zhilkombinat, Ginzburg and his group, the Standardization section, suddenly focused their attention on desurbanisation. Everything started with the sociologist M. Okhitovich, who appeared once on the doorstep of the design workshop, introduced them to his concept of *new settlement*. Okhitovich advocated an even distribution of industry and settlement all over the country as the way to eliminate the border between city and village, with a simultaneous "sanitation" of "capitalist city." A developed service network, individual dwellings and individual transport were important to his concept.
Okhitovich's argument seemed so convincing that Ginzburg's group managed to overcome doubts, even such controversial consequences of the programme as stimulating the development of residents' individual qualities instead of bringing up individuals in the spirit of collectivism, which was official political line.
As a result, two "camps" formed in OSA. Another issue of *SA* clearly reflected the situation in existence at that time. The editorial of the issue entitled "The Discussion on Socialist Settlement" spoke about the divergence of opinions in the ranks of the constructivists: "The editorial board does not share the view of the authors of the material published in the issue on a number of points, due to which the issue is published in the form of a discussion"[11]
M. Ginzburg and M. Barshch presented the theory of new settlement and illustrated it with their projects for the city of Magnitogorsk and for the reconstruction of Moscow (within the framework of the project selection process for a "Green City").
In spite of the fact that the task of the above-mentioned competition was to develop a recreational zone in Moscow, the desurbanists diverged from the programme, having covered not just one zone, but instead a whole city. Their project proposed "unloading" Moscow by withdrawing enterprises and organisations that were not directly related to it and, as a consequence, reducing the population of the city.
Within the territory of the city, the project proposed only the planting of trees and shrubs, gradually replacing dilapidated buildings (with the exception of historical structures, such as the Kremlin), thus turning Moscow into a "central park of culture and rest, where the "ribbons" of socialist settlement of Moscow come together."[12] The socialist

fig. 1.12



organisation of the city was based on the complete collectivization of all economic, production and servicing processes (fig. 1.12).
A disagreement in creative work had its stimulating effect as well. Ivan Leonidov made attempts to take the positive aspects of both concepts and combine them into a new scheme. His version of the city of Magnitogorsk which was published in the following issue of *SA* had a linear structure that was taken from new settlement, blocks of zhilkombinats from sotsgorod and, in addition, included high-rise buildings.[13]

In 1930, the desurbanists carried on with working out methods of new settlement based on the Gosplan RSFSR section of socialist settlement. The group included M. Ginzburg, G. Zunblat, I.

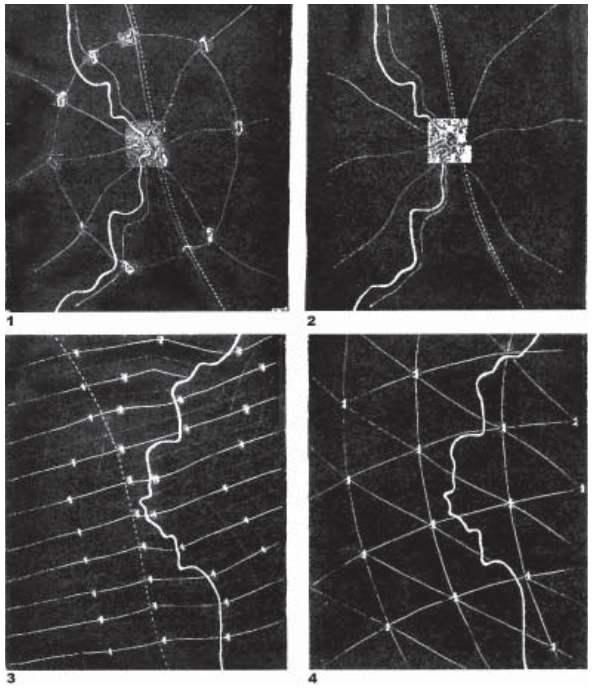


fig. 1.13

Milinis, M. Okhitovich, N. Sokolov and others. The main result of their work represented four principles of socialist planning (fig. 1.13). Stage by stage, they led to the development of a single system for the settlement of an economic region "under conditions of a transition from capitalism (with its "polar" division into city and village) to socialism (with its even distribution of production facilities throughout the country)." The first three were transition principles; the fourth one was defined as completely socialist:

desurbanist, for a region, the centre of which is a large city; it is opposed to the urbanist form of settlement and lays the foundation for uniting city and village, industry and agriculture, on the basis of new methods of production and communication;

decentric, for a region, the centre of which is a large industrial enterprise; it contrasts with a concentric planning that took shape in the period when economic concentration brought about spatial concentration of the population of regions, by establishing a network of enterprises and electric stations;

acentric, for the regions of agriculture or manufacturing industry; it differs from the concentration of manufacturing enterprises that are located far from mines and quarries, by combining extracting and manufacturing enterprises;

dispercive, for a region that combines agriculture and industry; it represents a single system of settlement of an economic region as such, a new socialist planning that substitutes industrial-residential areas of the past times.[14]

In 1931-1932, attention was again focused on practical tasks connected with the construction of new settlements mainly of simplified precast structures, with simultaneous attempts to predict the upcoming social problems. M. Ginzburg, G Zunblat, I. Milinis, V. Vladimirov, I. Leonidov, S. Lisagor and others worked within the group of prefab concrete construction in *Giprogor*. In 1932, work continued in the *Bashkir works sector of Giprom*.[15]

The concept of new settlement served as a kind of catalyst in the process of the town-planning discussion of that time; it changed its course and strengthened its intensity. Responses to it though were negative on the whole. N. Milyutin, a prominent economist and the chairman of the governmental commission on the construction of new cities, became one of the few who attempted to extract a rational grain from the theory of Okhitovich. He had chosen, to his mind, positive points from the theories of new settlement and sotsgorod and from their synthesis in the project by Leonidov, having discarded their extremes. In 1930 the book by Milyutin "Sotsgorod: Problema Stroitelstva Sotsialisticheskikh Gorodov" (Sotsgorod: the Problem of Building of Socialist Cities) was published, in which he presented his idea of a parallel development of industrial and residential city zones (fig. 1.14). He called it *potochno-functsionalnaya skhema* (functional-assembly line). It represented a linearly developing industrial region that was separated from a parallel residential line by a transport highway and a line of greenery, preferably with a reservoir. It was proposed

fig. 1.14

that communal facilities and cultural services be collectivised; the masses of the working people moved transversely to their production enterprises and back; on the way, they went to canteens and children's institutions. One of the strong points of Milyutin's scheme was its ability to develop in both directions.

In spite of the conviction and enthusiasm of the theorists behind new settlement, their activity came to end in one year, it failed to stand up to pressure and increasing criticism from all sides. None of the projects was realised, and their ideological leader Okhitovich was "repressed" as a result.

The Large-Scale Arrival of Foreign Specialists

The situation that took shape between the 1920s and 1930s was favourable for the large-scale arrival of foreigners who had different specialisations and different levels of professional training, to the USSR. The two quotations given below show that there was a mutual interest. On the one hand, the Soviet state experienced an acute shortage of specialists and skilled workers:

"Influenced by a well-known speech by Stalin, the campaign for the establishment of teams of skilled workers in every Soviet enterprise was begun. Lack of "spetsy" (specialists) is particularly acute. Only those factories and plants that have more or less considerable number of foreign technologists and workers work successfully. Because of that, the work at the tractor plant "Krasny Putilovets" is carried out successfully, but at Traktorstroi, in Stalingrad, where they have a considerably lower number of foreigners, nothing goes right in the work. Production is reduced, and the tractors manufactured are of such low quality that many kolkhozes refuse to take them."[16]

On the other hand, the situation in the West where there were few prospects, forced people to look into the possibility of earning money in the USSR:

"The New-York correspondent of "Berliner "Tageblatt" speaks of a huge influx of American workers and technologists who are trying to get their entry permits for the USSR through "Amtorg." The correspondent confirms the reports in American newspapers about the fact that "Amtorg" receives 125 applications on average each day. The majority of those who try to leave for the USSR are railway men, technologists as well as students of Harvard University."[17]

A similar situation existed in the area of socialist construction. There was an urgent demand for experienced industrialists and town-builders. As the old, pre-revolutionary generation of masters did not enjoy the confidence of the Soviet government, and the new generation had not acquired the necessary practical experience, the government turned to the West for help, promising generous remuneration in hard currency.

Thus, in 1929, an American firm Albert Kahn, Inc. – one of the biggest names in the industrial architecture of XX century – received an order from the Soviet government to design the Stalingrad Tractor Plant (that later became a tank plant) at a cost of forty million dollars, and later on – an order for other enterprises with a total cost of about two billion dollars. Kahn, one of the major architects of the automobile industry, who, out of respect, was called the «Architect of Ford», possessed a unique technology that allowed projecting and building a large plant in a period just a few months. He was a pioneer in the use of reinforced concrete and steel.

fig. 1.15

From 1929 to 1932 Kahn was in charge of the industrial building program in the USSR. The Detroit office executed about ten projects, the rest were developed in his Moscow branch headed by Albert's brother Moritz, where more than fifteen hundred Soviet designers worked and gained experience under the leadership of about thirty American specialists. Within three years, Kahn's firm had produced 521 to 571 projects of enterprises of different specialisation. Those were, mainly, machine-building and tractor plants, but also machine-tool enterprises, aluminium-working factories and many others. The terms of collaboration also implied a visit of Soviet specialists to America "to familiarize themselves with the largest structures and the latest methods of construction technology."[18]

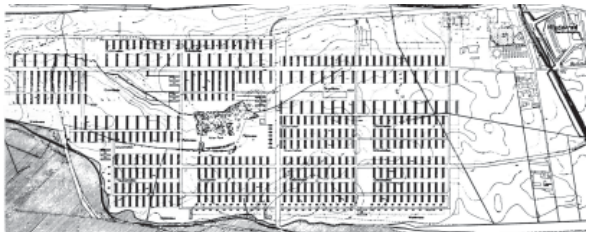
In 1932 cooperation with Kahn, Inc. stopped. Kahn was offered the option of prolonging his contract on condition that his later payment would be in roubles, and he was compelled to refuse the offer. At that time, the Soviet system of designing had already been reorganised into a "conveyer belt" production of projects, as had been practiced by Kahn's firm. In addition, European firms that had also learned from the American master offered Russia cooperation on more favourable terms and occupied a leading position in receiving orders.[19]

Many European architects left their offices in their native countries and went to the Soviet Union. The possibility of earning money and realising their projects on a large scale left nobody unmoved. However, not only the prospect of earnings attracted Westerners. Those who were convinced socialists, supporters of new architecture, stayed to work in the USSR irrespective of the instability of the economic situation there, as they saw that, in the whole of the world, the Soviet state was the place where avant-gardism could manifest itself to its fullest extent. It was impossible to imagine that at that time, in any other country, artists and architects had the possibility of realising radical changes in the outlook of a whole nation using aesthetic methods. We may suggest that the most progressive French, German, Dutch and American architects had a growing feeling of dissatisfaction with how new architecture developed in their own countries in comparison with the situation in the Soviet state. In the capitalist West nobody welcomed their innovative ideas, or if they did, then not to the desired extent.

The realisation of new town-planning concepts was especially difficult. There were interesting investigations in that area. The critical situation that took shape in capitalist cities stimulated the development of town-planning theories. The concepts of a "garden city" E. Howard (1898), "linear city" A. Soria y Mata (1882), "cité industrielle" T. Garnier (1905) had a considerable influence on the development of town-planning in the XX century. In the Doncaster Regional planning scheme (1922) P. Abercrombie considered economic and engineering-and-technical aspects of communication between an industrial centre-city and settlements of the mining industry for the first time. That project laid the foundations of regional planning and became a prototype for planning industrial centres (fig. 1.15).

However, in reality, it was exclusively the preferences of landowners that defined the way of de-

fig. 1.16



velopment of the capitalist city. Cities were built as separate parts; planned approach was not even mentioned. Under conditions of intensively growing cities, private ownership of land gave rise to an excessive density of building and large-scale speculation in plots of land. It aggravated the unplanned development and led to a chaotic location of plants, factories, railway lines and structures, ports, and warehouses that polluted the environment, in the city. The promulgation of a number of regulatory and municipal acts that regulated development and certain town-planning works, could not change the general chaotic nature of development in capitalist cities.

The situation was aggravated by an economic crisis, which resulted in the fact that initiatives directed to the change of the above-mentioned situation perished "in the bud." The work of Ernst May on the project of Goldstein-Siedlung in the southern suburb of Frankfurt-am-Main, was a well-known example of dissatisfaction with the West-European town-planning practice. The settlement was planned as the first satellite-town, as an example of a new structuring of city space (fig. 1.16). Residential buildings in the blocks were situated according to the principle of a *comb*, which was an innovation in the practice of housing construction. In accordance with the results of the latest research, meridianally-orientated buildings had optimal conditions for sun-light. May and his team worked on the project from 1925 to 1928, but construction work stopped in 1929 due to an economic crisis in the country.

Material was another stumbling block. For new architects, the words "reinforced concrete" sounded like music, but it was not possible to use it as much as needed. In the Europe of the early 1920s, only French architects had the possibility of using concrete, for all that, the style and type of the majority of structures made in concrete at that time cannot be referred to modern architecture. In England and Germany, construction legislation did not welcome the use of reinforced concrete constructions in view of their seeming lack of safety. In the Netherlands, to create an illusion of reinforced concrete, the walls of modernist buildings were often made of cinder blocks and bricks and then, stuccoed and painted. There were not enough funds to experiment with new materials and technologies. In the Soviet Union, industrialisation was taking place, which promised to eliminate the problem of obtaining construction materials. Ginzburg had formulated that thought as follows:

"Capitalism had prepared the ground for industrial construction, but internal contradictions that are so characteristic of capitalism in general, do not allow to complete this process under its conditions. Only socialist conditions give the possibility of mastering the industrialisation of construction in practice, of giving it proper architectural form. It also allows mastering other, the most progressive forms of construction."[20]

In 1929 Le Corbusier came to Moscow, where he even became a member of OSA. His visit was related to the construction of the Tsentrosoyuz building after his project. It should be mentioned that on the part of Le Corbusier, it was a kind of "revenge": when designing Tsentrosoyuz, he used the principles of his competition entry for the Palace for the League of Nations in Geneva (1927-1928), which had not taken the first prize at the time.

In 1931 Bruno Taut, known as a "friend of New Russia," was invited for participation in a closed competition for the "Inturist" hotel in Moscow. In 1932 he arrived in Moscow and became the head of an architectural office in Gosproject with 30 employees.[21]

Social prerequisites, new typologies and new technologies were the three "pillars" of progressive architecture. How far could dedicated socialists advance their social programmes within the capitalist system? Under the conditions of almost complete dependence from the client, it was impossible to contemplate constructing housing, public and administrative buildings of a new type. While in the Soviet Union the government supported the realisation of social experiments, the West had no reasons to promote "palaces for the working people."

The story about the Dutch architect Mart Stam pictorially shows the personal and professional circumstances that led the Western specialist to the country of the Soviets.[22]

Both the ideological and the creative convictions of Stam were quite radical. He discoursed on a permanent struggle between nature and mankind, defining architecture and town planning as the peak of the manifestation of that struggle. In such a Darwinist struggle for survival, the one who is better organised will win. He believed in the emergence of a new, "ideal type" – in architecture, too – by way of crystallisation, in the process of which all that is of secondary importance will no longer be needed, including the name of a creator. Likewise, in the opinion of Stam, the new socialist society had to be formed. The more progressive, from the point of expediency, it became, the more international it had to be.

His first exposure to the "Soviet" took place in 1922, during his work in the workshop of Max Taut in Berlin. Mart, who was 23 at that time, was acquainted to El Lissitzky. They began their joint activities, developed methods of internationalisation, standardisation, and studied the latest American technologies. At that period, Lissitzky began to develop his famous series of "horizontal skyscrapers for Moscow."

In 1923 Lissitzky was diagnosed with TB and had to leave for Switzerland; Stam followed him. In 1924 Stam and Lissitzky, with the participation of Hans Schmidt and Emil Roth, established the magazine *ABC* in Basel, a periodical that, together with *Modern Architecture,* had many subscribers in the Netherlands. In 1926, Lissitzky, who was the editor-in-chief of *Izvestia* ASNOVA, referred to Stam as a Dutch representative in the only issue of the organ of the press of that group.

Mart Stam worked actively not exclusively together with Lissitzky. In 1928, in Germany again, Stam took part in the project of Weißenhof-Siedlung in Stuttgart, an exhibition of new housing, which was a very important event. In 1929 he also became a member of the group that organised the second congress of *CIAM* in Frankfurt-am-Main.

Stam believed that the arrival of the socialist system to Western Europe had to begin in Germany. The Weimar Republic was a promising beginning, but by 1924 the socialists of Germany began to experience problems. After the reaction of the right in Thüringen, Bauhaus was accused of communist propaganda, and the following year the school had to move from Weimar to Dessau. In 1928 Walter Gropius left the post of its director, and chose the Swiss architect Hannes Meyer to take his place. In the past, Meyer had also been a member of the ABC group, where he had made friends with Mart Stam. The new director paid special attention to the training programme at the architectural faculty. To widen that programme, he invited some specialists to teach it. Stam was among those invited, and began to work with enthusiasm. Unfortunately, just a year later, the situation changed for the worse. The leftist convictions of Meyer led to attacks on Bauhaus by the right who were gaining force at that time. In spite of Meyer's attempts to prevent the involvement of Bauhaus in political debates - he even had to stop the attempt of students to organise a cell of the Communist Party at school, in 1929 he had to leave Bauhaus under

pressure from the reactionary authorities. Mart Stam left together with him.
In 1930, Hannes Meyer together with a group of former students left for the Soviet Union under the invitation of Glavpromkadr, a section of VSNKh (the Soviet Supreme Economic Council). They began their work in Giprovtuz under the name of «Roten Bauhausbrigade."
By that time, Stam also had a number of personal reasons that made him consider a trip to the Soviet Union. In 1925 Stam came back from Switzerland to Holland, his work at one of his most famous projects for the factory "Van Nelle" in Rotterdam ended in a conflict with his co-authors, Brinkman and Van der Vlugt; as a result Stam had to leave the team. For certain, that circumstance influenced his decision, too.
In 1930, Mart Stam joined the group of Ernst May that went to the USSR. The international "Brigada Maya" (May's team) included German, Dutch, Swiss and Austrian specialists in architecture, urban design, public green, and transport. Among others, the modern architects Hans Schmidt and Magarethe Schutte-Lihotzky participated. May's group was invited to work for the Standartgo-project, a trust for standardised industrial cities. Similar to Le Corbusier when he worked for Centrosoyuz, Ernst May wanted to use his visit to Russia to utilise the ideas that he had formulated in 1928 when designing a workers' settlement near Frankfurt-am-Main.
Why shouldn't a Dutch socialist try his luck in the construction of the Soviet state?

Town-planning Discussion or a Political Debate?

Foreign specialists who had come to the USSR, immediately joined in the town-planning discussion and always played an active role in the course of it. As has already been mentioned above, the desurbanists rendered a strong influence on it. At the same time, one more important event took place; it made the discussion – and together with it, the course of town-planning in the whole country – turn in a different direction. In 1930 a competition for the scheme of reconstruction of Moscow was announced. The capital again turned out to be a model for testing all kinds of concepts. The competition entries were actively discussed in the press. In 1930 the results of a survey were published in the magazine *Kommunal'noye Khozyaistvo* (Municipal Economy). Specialists gave their ideas on the reconstruction of the old and the construction of the new capital.[23] Representatives of such organisations as Gosplan of the RSFSR, ASNOVA, OSA, MAO and newly formed groups – an Association of Urbanist-Architects ARU headed by N. Ladovsky, and the All-Russian Association of Proletarian Architects *VOPRA* headed by I. Matsa that separated themselves from ASNOVA, took part in the survey. Abroad, Le Corbusier and E.May answered the questions of the enquiry.
Soon, research into the new planning system showed that the system of sotsgorod that fitted the design of new industrial centres well, did not give good results when it was applied to a large city with adjoining agglomerations. Consequently, an alternative solution had to be developed.

The OSA-desurbanists had advanced their famous proposition on that project even before the beginning of the competition. Their colleagues met the idea mostly with criticism; moreover, the criticism touched upon all other directions of OSA developments. In the choir of critics, the voice of Bruno Taut sounded somewhat lonely; he was full of enthusiasm with regard to the theory of Okhitovich, as ten years ago, Taut had come to a similar conclusion which he based his theoretical work *Auflösung der Stadte* on.[24]
In contrast with "Green City", N. Ladovsky advanced his urban concept of *dynamic city* (fig. 1.17). Ladovsky's scheme envisaged the devel-

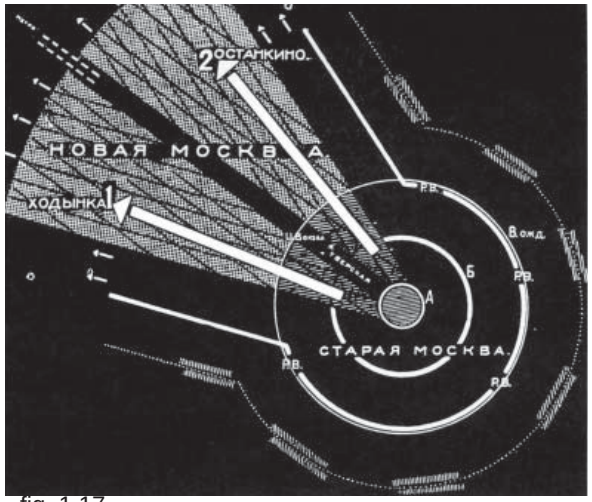


fig. 1.17

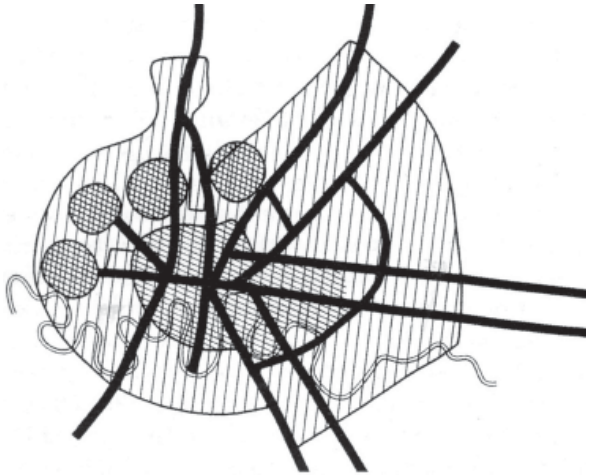


fig. 1.1 8

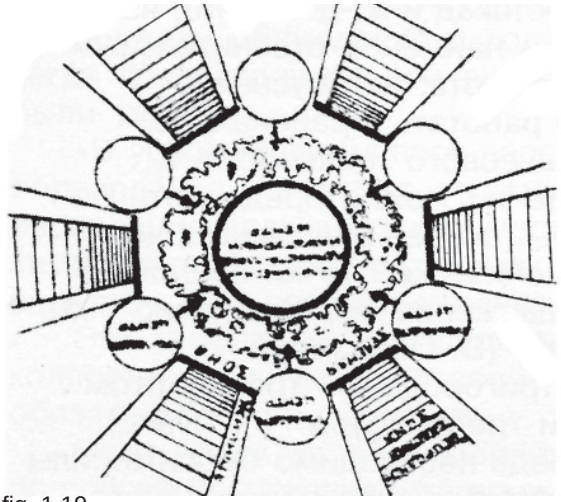


fig. 1.19

opment of new functions with a simultaneous possibility of retaining the historical core. Development went along parabola that broke up the transportation circuit of Moscow from the centre to North-West in order to lay out new functions of the centre that were infinitely "strung" on the axis of the parabola.

V. Semionov and his group advanced a new version of Moscow as garden city. In accordance with their project, the existing Moscow "patch" had to be divided into a system of complex-cities. Those cities, isolated by public greenery and united by a transportation system, were located around the historical core, but possessed a considerable degree of autonomy, with each of them having its own industrial and administrative centre (fig. 1.18).

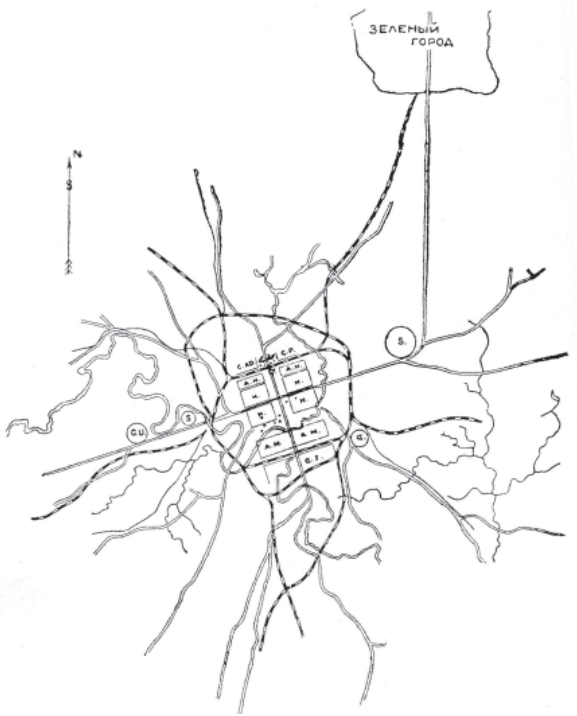
The majority of the participants were unanimous in their choice of radial-and-circular layout of the city, which mainly solved the problem of discrete planning and transportation centres. The above mentioned plan constituted the basis of the "Moscow Agricultural Ring" by S. Strumilin, "Radial-and-Linear" scheme by G. Puzis (both represented GOSPLAN of the RSFSR) and the "Radial-and-Tongue-Like" scheme by P. Golosov (OSA). It could also be traced in the proposal of Ernst May of attaching *Trabantenstädte,* satellite-territories, to Moscow that would be located 10 to 15 km from the centre (fig. 1.19).

Le Corbusier submitted a superurbanist model with increased density and reduced area. Rejecting the radial-and circular planning scheme, he left the centre untouched and divided the rest of the city into five zones that were inscribed into a rectangular network of highways. He cut each rectangular thus formed by diagonal routes. The reduction of the area of the city was achieved by raising the number of floors of the new houses that were to substitute the existing ones; the space among structures was proposed to be densely planted with trees and shrubs (fig. 1.20).

Inspired by the ideas of collectivism and a new class persona, the architects of OSA developed new town-planning concepts and types of housing that came to contradict not only the point of view of their professional opponents, but also the idea of state planning. The result was not unexpected: in 1930 the Party severely criticized all their developments:

"The projects of re-planning of the existing cities and constructing new ones using exclusively the finance of state, that have emerged lately in the press and envisage immediate and complete collectivisation of all aspects of the everyday life

fig. 1.20



of the working people, such as meals, housing, bringing up children with their separation from their parents, with elimination of the everyday links between family members and the administrative prohibition of individual cooking and so on, refer to the attempts of certain workers who hide their opportunist essence behind the "leftist phrase." Carrying out those harmful, Utopian undertakings that do not take into consideration the material resources of the country and the extent to which its population is prepared to accept them could led to a great squandering of funds and to the discredit of the very idea of the socialist reconstruction of living conditions."[25]

The position of OSA was already very shaky when it acquired a new adversary in the form of VOPRA. Initially, that group supported the positions of modern architecture and surpassed all other groups in the power of their political rhetoric, attacking them and making them defend themselves. In the Declaration of VOPRA, the activities of MAO, ASNOVA and OSA were ranked among bourgeois art. New "dramatis personae" came to the architectural stage: A. Mordvinov and K. Alabyan. Members of VOPRA did not take the trouble of formulating their creative credo; in their declaration, they had just combined the programme aims of creative associations with whom they held their polemics.[26] "Classless architecture does not exist" was their main argument that also implied that it is exclusively VOPRA that represents class architecture. They initiated the emergence of a disparaging term "leonidovshchina" (a la Leonidov).[27]

Project elaborations of the desurbanists looked too bold even for Le Corbusier. Before his departure from Moscow he wrote a letter to Ginzburg, his most respectful colleague, in which he confided his fears with regard to social experiments that go too far and their possible consequences:

"My conclusions are not full of that (temporary) enthusiasm that here and now accompanies a simple word: desurbanisation. It contains a clear contradiction that destroys everything. […] Dispersion weakens minds and loosens all the reins of discipline – material and intellectual. […] I was the first to propagate the idea that a city should represent a huge park. However, to allow myself that luxury I had to increase the density of population from 800 to 3200! […] One of the projects of desurbanisation of Moscow proposed thatched cabins in the forest. It would be marvellous! […] but only to spend one day of rest on a weekend there."[28]

In response to that warning, Le Corbusier received an edifying rebuke:

"In spite of all the brilliance of your talent, you are aware of your feebleness in overcoming objective contradictions that modern capitalism has. […] You, the first-rate surgeon of the modern city, want to cure it at any cost. […] However, you do it because you want to treat a city, and are trying to retain it in fact in the form previously created by capitalism. Here, in the USSR, we have more favourable conditions: we are not bound by the

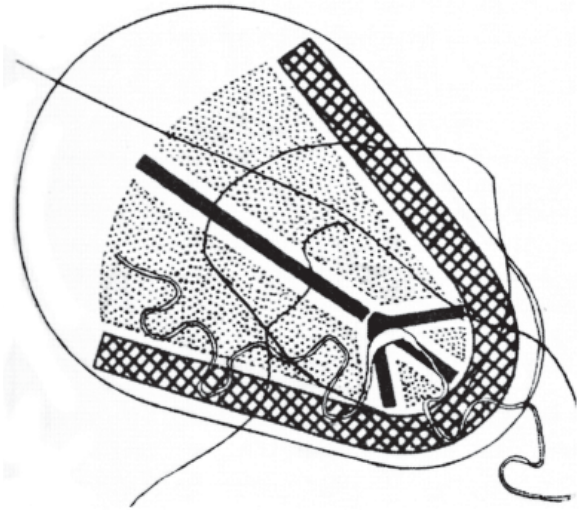


fig. 1.21

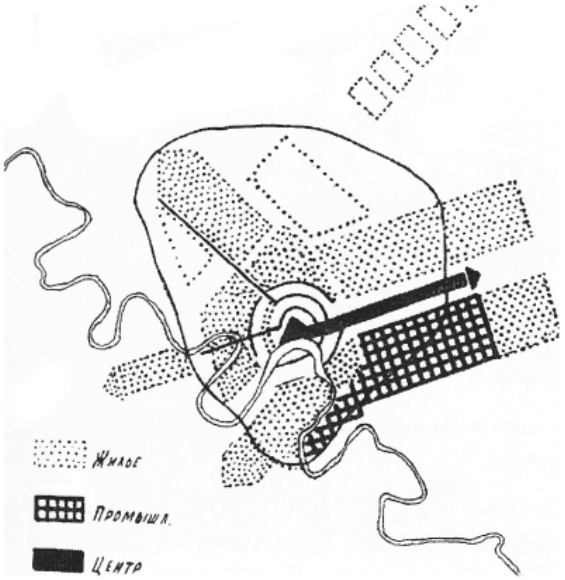


fig. 1.22

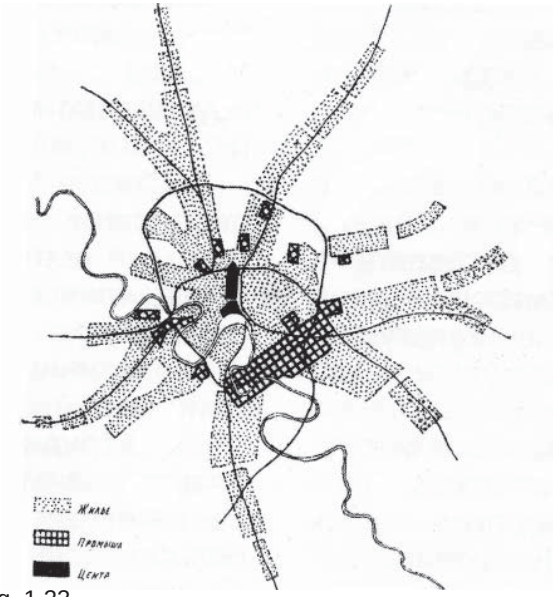


fig. 1.23

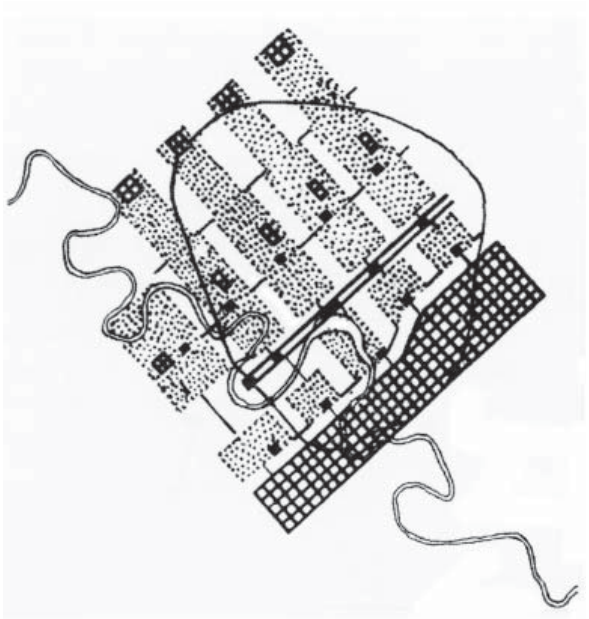


fig. 1.24

fig. 1.25

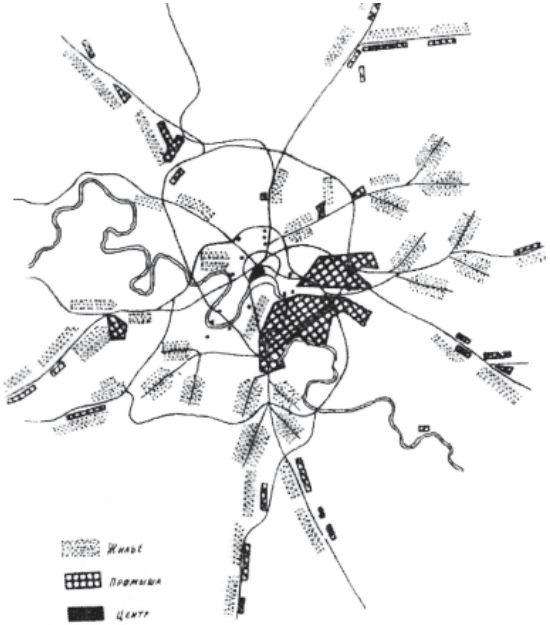


fig. 1.26

past. . […] We know that we do not have the solution to this difficult problem yet, but we cannot but set this task before us, we cannot but attempt to solve it. This is our duty, the duty of architects who would also like to become the architects of Socialism."[29]

Ginzburg used a method of polemics that was popular at that time: to convict a person of the groundlessness of his arguments. Ginzburg did not take into account Corbusier's merits and regalia; bourgeois origins would just say enough about his judgement ability.

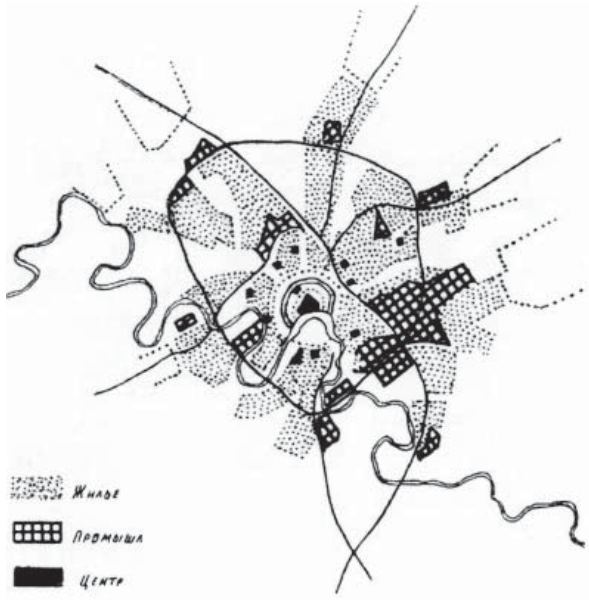
In 1932 the debate over the reconstruction and development of Moscow continued within the framework of a closed competition. Seven teams were allowed to compete: the teams of N. Ladovsky, V. Kratyuk, G. Krasin, VOPRA, Ernst May, Hannes Meyer, and Kurt Meyer. As a result, all the participants agreed on the necessity of retaining the historical core, but their opinions on the choice of a new town-planning structure were divided into two groups: development around a single public centre or the orientation to a system of multiple centres.

Ladovsky advanced again his proposal to transform Moscow from a radial combined with circular structure into a dynamic one with the help of a parabola (fig. 1.21). The project by Kratyuk echoed the latter one, but it grouped the city around a public centre that developed in two main and several secondary directions (fig. 1.22). The project by G. Krasin represented development of the centre along the highways and was based on the system of improved transport: driving inside the centre did not exceed 10 minutes, and one could reach the periphery within 50 minutes. The project envisaged single Moscow where communication represented lines of electrified railway transport and developed metro lines which extended beyond the city limits (fig. 1.23).

The idea of decentralisation was expressed in the VOPRA team plan. They divided Moscow into five rectangular district-blocks; each of them had its own administration, infrastructure and industry (fig. 1.24). Hannes Meyer created a "system of cities", an agglomeration, in which satellite-cities were grouped along highways, and industry was drawn towards the transport ring (fig. 1.25). Ernst May combined decentralisation and the breaking up of the city into smaller units. He suggested many "city collectives" that were independent of each other (fig. 1.26).

The project by Kurt Meyer was favoured with the highest praise. He represented Moscow in

fig. 1.27



the form of a star-shaped city (fig. 1.27). He widened the Boulevard Ring and urbanised the Kitai-Gorod. Beyond the ring, the city was broken up into 10 rays or zones that were connected with chord-highways that bypassed the centre. The government liked the monocentric image of the capital, but it would not carry out reconstruction in accordance with the project of a foreigner. The above mentioned project became the basis of the final General plan of 1935 made by domestic architects. The political situation and, together with it, architectural and town-planning styles had completely changed by that time.

The Middle and the Second Half of the 1930s: Preparations for the War

"Today, when we make an appraisal of that past period, it is clear that constructivism did not cope with the tasks set by new Soviet architecture. Constructivism is left in the past; that period taught us many things, because we learn by mistake as well as by the positive factors that constructivism had.

Today, we face tasks that require intensive work to the full of our creative potential; we may solve those tasks only if we arm ourselves with the method that has been given to us by the Bolshevist Party, the method of socialist realism. Only this method gives us the right ideological direction."

V. Vesnin[30]

The Change of Aesthetic Ideals

At the end of 1932 the Kremlin announced that the First Five-Year Plan had been fulfilled ahead of time, within four years. In fact, the main industrialisation plan had been fulfilled less than 25%. What had not been fulfilled was just eliminated from the plan. Apart from that, all the new military expenses were included into the fulfilment of the Plan. The year of 1933 was announced to be the year of the Second Five-Year Plan that was orientated to the preparations to the war. Apart from the existing threat from the Far East, a real threat from the West emerged, that is why the plan was 100% militarised. The funds were allocated to the construction of factories and plants manufacturing armaments; tractor works were re-equipped to manufacture tanks and tractors for the army. At the same time, the extension of automobile plants was suspended, in spite of the fact that they were also needed for the war; the construction of almost all railways was greatly postponed. The size of the army was doubled.

In 1936 the foreign policy problems of the USSR faded against the background of the "great Yezhov's purge." Being afraid of having his authority reduced, Stalin decided to substitute influential Party leaders by new ones who could be controlled by him. In Moscow, a few show-trials were held, at which dozens of Lenin's close friends and colleagues acknowledged most unbelievable crimes against the Party and the country which they never committed. From 1937 the purge was carried out on a large scale. In the course of the following year and a half, all over the Soviet Union, thousands and thousands of people were arrested daily and sent to concentration camps.

Meanwhile, by 1935, the project of the General plan of reconstruction of Moscow made by V. Semionov, S. Chernyshev and others, had been adopted. The idea of reconstructing the capital as a symbolic star-shaped city constituted the basis of that plan. The centripetal nature of the scheme expressed the idea of the state system, canonising regulation as its main principle. The Plenary Session of TsK VKP(b) (the Central Committee of the All-Russia Comminist Party (of the Bolsheviks) approved of the combination of the political and planning centres of Moscow in the Kremlin. The plan was based on retaining the historically formed city, but envisaged radical re-planning aiming at ordering streets and squares with frontal outlay of residential buildings, transfer of industry and warehouses to certain zones, supplying the city with water and reducing its density. The architects planned the capital as a static ensemble where 12 avenues were directed to the main monument of the city and country – the Palace of the Soviets to be erected in place of Christ the Redeemer Cathedral. Stalin approved of the demolition of the Cathedral and the General plan. The authorities were aware of the fact that the project could be realised only under the conditions of deliberate reduction of the size of population and

the number of vehicles in the city. The Decree of the SNK of the USSR and the Central Committee of the VKP (b) of the 10th of July 1935 regulated both. The Decree that defined specific measures on the radical restructuring of old Moscow into socialist Moscow also served as a directive that provided the principles for Soviet town planning. From that time, *ansamblevost* (organizing by ensembles) was announced to be the only possible form of architectural organisation in the USSR. The signal had been taken, and the new principles were used as the basis for reconstruction of other Soviet cities. Simultaneously with that, the development and realisation of the General plans of the cities of Leningrad, Kharkov, Baku, Gorki, Yerevan, Novosibirsk, Tbilisi, Khabarovsk, Chelyabinsk, Yaroslavl and many other cities began.
The main principles of creating the ensembles of a city and architectural ensembles that constituted it had been developed at that time by the specialists of the All-Russian Academy of Architecture founded in 1933. The city of Russian classicism, with certain corrections to suit the then time, was taken as a model. The planning structure of the city was based on "initial ensembles", the key parts of the plan; the city centre was the main of them, and district centres, access points, squares, and cross-roads were auxiliary elements. Wide avenues, boulevards and esplanades were connecting elements.
As a consequence, when reconstructing cities, special attention was paid to large-scale complexes that had emerged in the previous periods. The principle seemed to envisage the retaining of the historical heritage, but in fact, it implied the retaining of only the heritage that corresponded to its system of values. Any heritage that did not meet the requirements of the new socialist town-planning was destroyed.

The plan for the reconstruction of Moscow set the course of town planning, and its central element, the Palace of Soviets, unequivocally showed the required direction of architectural style. The competition for the project of the Palace of Soviets went down in history as a symbol of the decline of avant-garde aesthetics and the rise of the new traditionalism that had been declared by the official authorities. Reorientation for the revival of classical heritage took place in a series of competition stages. In February 1931, the Administration for the construction of the Palace of Soviets invited all creative associations to participate in the development of the programme of the competition. In June of the same year an open All-Russian competition for the project of the Palace of the Union of Soviet Socialist Republics, in which foreigners took part, was held in Moscow.[31] At the first stage, no preference was given to the style of the project; at that time constructivism was perceived as an official Soviet style. One year later, the organisers specified the task and set out the vertical and monumental qualities that were to be the essential constituents of the image of the "main building" of the country. In 1932, Van Loghem, in the magazine *De 8 en Opbouw,* expressed his bewilderment with regard to the change in the course of Soviet architecture that clearly manifested itself in the course of the competition for the project of the Palace of Soviets. Projects that were submitted at the first stage the competition, among them was his own project, were rejected. He found the requirements of the second stage too pompous to have been realised in the country that followed the socialist course:

"Waarschijnlijk is echter het verlangen der Russen naar iets geweldigs niet in een dergelijk koel en streng complex tot uitdrukking gebracht. [...] De nieuwe prijsvraag, die thans weder zal uitgeschreven worden getuigt reeds van een zekere mislukking door de nieuwe eischen, die bepaalde hoogte-accenten verplichtend maken, en klassieke vormen en bekroningen niet uitsluitend, mits het

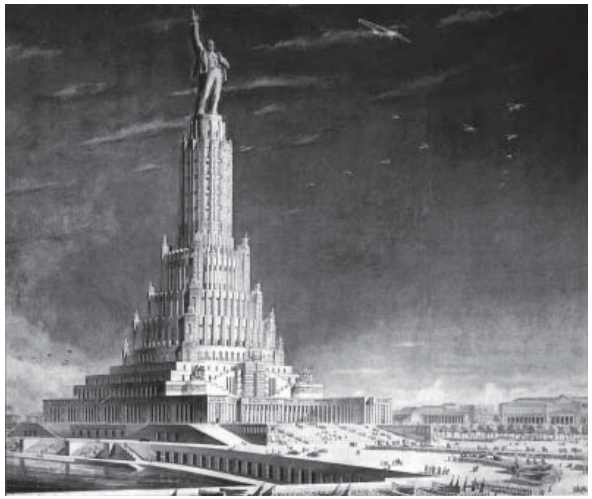


fig. 1.28

maar geen tempel- of kerkvormen zijn, die verwerkt worden."[32]

The pro-classical projects by I. Zholtovsky, B. Iofan and the American Hector O. Hamilton were awarded the highest prizes. In March 1932 the third, closed stage of the competition began, where twelve creative teams were allowed to compete. Five of them were selected to compete at the fourth stage that began in 1933.

The project by B. Iofan that won at the fourth stage fully corresponded to the requirements of the newly introduced aesthetics of socialist realism (fig. 1.28). A pyramid made of cylindrical volumes which were richly decorated and had sculptures in niches, raised a colossal figure of Lenin to the skies. However, when looked at in detail, one aspect draws our attention to it: the avant-garde period had also left its trace on the project. It is felt in the volumetric composition, if we imagine it without decor, in planning, and in the choice of typically modernist materials – steel and concrete. Thus, socialist realism did not have to be interpreted as a complete withdrawal from the methods of traditional design. It was rather an appeal for the aesthetic enrichment of the practical developments of modernism.

Owing to that, the existing constructivist buildings that had been approved for construction, underwent external reconstruction all over the country; as often as not, there were enough funds only to finish the main facade, whereas the walls of the yard facade remained "primordially bare." The method of projecting remained to be constructivist for quite a long time after that.

The introduction of single new aesthetics of socialist realism implied, among other things, the end of debates among different creative associations as well as the end of the very existence of those associations. By the Decree of TsK VKP(b),[33] the representatives of all creative professions were united into single unions in accordance with their profile, and in each of them there had to be a Communist Party cell.

Thus, on July 18, 1932, the Union of Soviet Architects was established. Representatives of all former groups: V. Vesnin, and M. Ginzburg (OSA), N. Ladovsky (ASNOVA), K. Alabyan (VOPRA), D. Fridman (LOA), I. Zholtovsky (MAO) and others were elected to the board of the new Union.

However, formal unification did not reconcile yesterday's opponents. On the contrary, ideological persecution within the framework of "creative discussions" were carried to the point of absurdity in that very period. In 1937, Shchusev had to ask for protection in Mossovet (the Moscow Soviet) after Karo Alabyan had come out against him with a number of compromising facts. Jealousy on the part of Alabyan was the reason for that. Shchusev's transition from new architecture to Stalinist empire style was timely. He based his decision on the fact that only in the socialist society is it possible to carry out construction that surpasses Ancient Rome in its scale. That manoeuvre deeply affected the ambitions of Alabyan, and he decided to move Shchusev out of his way with the same method that he had used to send M. Okhitovich to a concentration camp. On the 2nd of September, 1937, Alabyan convened a meeting of a Party cell; the theme was to reveal and stigmatise traitors that enjoyed the trust of the working people. Among the latter were, in particular, Zholtovsky and Golosov, but it was Shchusev who was subject to the most concentrated attention. Alabyan

testified to antisoviet jokes that Shchusev made in public. Shapovalov claimed that offsprings from unreliable families of merchants, of the nobility, priests and foreigners worked in Shchusev's workshop. Chernov's argument represented the fact that Shchusev made friends with the unmasked traitor Tukhachevsky. In the heat of the debate, Zaslavsky attested, among other things, that Shchusev had an "anti-Soviet face." B. Vilinsky echoed him, saying that from the very first days in the workshop he noticed that Shchusev "had the eyes of a saboteur."[34]

Off With Foreign Spies and Agent Provocateurs!

The fact that the Soviet power began to acquire traits of totalitarianism had immediately influenced its attitude towards representatives of capitalist powers that cooperated with the Soviet Union. Shocked by the turn of the events during the competition for the Palace of Soviets, the leadership of CIAM and personally Le Corbusier sent Stalin letters in which their indignation at what had occurred was mixed with the requests to reconsider. The letters were never answered. The Soviet power made them understand that from that time, the ties between the Western and Soviet architects would be broken. The Congress of New Architecture of CIAM that was planned for July 1933 in Moscow had been cancelled one month before its beginning. Instead of discussing the theme "Functional City" together with Western colleagues, Soviet architects were busy with the first "Creative Discussions of the Union of Soviet Architects."

Those Western architects who were working in the USSR at that time were driven out of the country. By 1934-35, the design developments of the teams of Ernst May, Hannes Meyer and Bruno Taut concerning the problems of new housing and socialist settlement were halted. Modern town-planning was criticised in 1933. From that time Soviet architects had to correct what had already been constructed and make alternative general plans to replace those that had not been yet realised. *Sotsgorods* were transformed in accordance with the models of classicist cities.

Ernst May left the USSR in 1933 as well as Bruno Taut. Hannes Meyer left in 1936 and Hans Schmidt – in 1937. Their departure was accompanied by a passionate criticism by the Soviet citizens. In 1937 foreigners were not allowed to work in the USSR in principle. Only those who became Soviet citizens stayed to work.

In 1934 Mart Stam was driven out of the USSR because he refused to work on the project of the Balgash settlement near Alma-Ata. When Stam familiarised himself with the project task, he wrote a report in which he objected to the construction of a new settlement using political prisoners as the workforce. It was interpreted as an anti-Soviet act and an attempt to undermine official programme principles.

Stam's associate in Magnitogorsk, Johan Niegeman, worried about the changes in the political climate of the country and even went to Moscow, where he hoped to receive an advice of one of the Vesnin brothers with that regard. Vesnin assured him that the situation was temporary and advised him to be patient a little longer. The attempt of Niegeman to adapt to the new situation resulted in his becoming ill, which made him return to his native country. Niegeman's departure and the driving of Stam out of the country can in retrospect be considered rather lucky, as the growing wave of repressions was already threatening to fall upon specialists invited from abroad.

Summary of the first chapter

It is difficult to define the exact location of the origins of modernist architecture. We may say that modernism is the child of two parents, and, developing this idea, we may ascribe ideas of rationalism to the West as its “genetic carrier”, or “father”, and accordingly, attribute the function of “mother” to Russia, as it was there that new architecture found itself, so to say, in the flesh. The Great October socialist revolution served as a powerful spur to the development of New architecture in the USSR; the Revolution made that architecture a leading movement. The potential of avant-garde construction of the first Five-year Plans inspired many Russian architects as well as their foreign colleagues. The world architectural community laid great hopes on it.

Let us enumerate in short those factors that predetermined the emergence of modern architecture in the Urals.

Western factors:

- Howard's idea of "garden city" (1898) prevailed over others. It seized the minds of both Western and Russian architects and was applied at all levels of town-planning projects: when creating the systems of settlement, in architectural–and-planning organisation of cities and settlements and individual parts of them. Together with the concept of "linear city" by A. Soria y Mata (1882), those ideas laid the foundations of the desurbanist trend in town-planning; the first idea envisaged a compulsory introduction of the network of green areas in a city, and the second one was based on the increasing role of transport.
- The ideas of “cité industrielle” by T. Garnier (1905) and “ville radieuse” by Le Corbusier (1935) influenced the development of the urbanist trend in town-planning considerably. Those concepts represented the foundation of functional zoning of cities.
- Abercrombie’s Doncaster Regional planning scheme (1922) became a prototype for industrial centres, and a superfast conveyer-belt system by Albert Kahn, Inc. laid the foundation for architectural design of industrial enterprises.
- The formula *Neighbourhood Unit* by C. Perry (1929) was the first attempt to organise a residential district with an optimal infrastructure.
- Ernst May, in his project of Goldstein-Siedlung in Frankfurt-am-Main (1928), was among the first of those who applied “comb” building-system as the most hygienic way to organise residential buildings in a satellite city.

Soviet factors:

- Under the influence of Howard's theory, the projects of widening cities with the help of satellite-cities, autonomous both in their town-planning and economic aspects were practiced from the very first years of Soviet Power. Thus, for example, in the project of Greater Moscow by S. Shestakov (1925), the ideas of a city with a group form of settlement were developed for the first time.
- In 1930 L. Sabsovich gave the most complete system of the main principles of the sotsgorod concept.
- The OSA group made a detailed theoretical contribution to social construction; in 1929 – it developed a layout of buildings of the transition type; in 1930, the Vesnins’ group continued to develop a more optimum model of sotsgorod, whereas Ginzburg's group became absorbed with a desurbanist theory of new settlement offered by M. Okhitovich; on the basis of those two models, I. Leonidov developed a linear sotsgorod with the elements of high-rise.
- The functional-assembly line by N. Milyutin (1930) and the dynamic city by N. Ladovsky (1930) combined the elements of urbanism

and desurbanism. An all-embracing design of the city as an integral entity of individual functional zones, a complex spatial design of a residential area and a structure of a city open to later development were the most valuable characteristic features of those schemes.

- In 1923-24, the architects L. Vesnin, S. Chernyshev and N. Kolli built public buildings inside a residential block for the first time.
- In 1930 S. Strumilin introduced the idea of microraion.
- Parallel to the use of comb building that occupied a leading position in the new town-planning, Soviet architects experimented with high-rise. The creations of V. Tatlin, K. Malevich, Ya. Chernikhov and E. Lissitzky served as prototypes for tower-buildings. In the 1920s and 1930s, multi-storeyed buildings were used as the main component of the monumental building of residential blocks.

Cultural and political aspects

- Active professional contacts between Soviet and Western architects in the 1920s and early 1930s contributed into mutual enrichment in ideas and practical experience.
- From 1933, the political climate in the USSR became colder and international cooperation quickly came to an end. Modern architecture gave way to socialist realism. The "revival of classical heritage" in town-planning implied replanning of cities in order to bring them to the formula of an ensemble; in architecture, it manifested itself in the creation of grandiose volumetric compositions with richly decorated facades. On the whole, it meant a large-scale reconstruction of the heritage of new architecture.

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CHAPTER II

Avant-Garde and Construction of the Ural Cities

This chapter will mainly deal with town-planning. We shall see how the progressive ideas of the adherents of new architecture were put into life under the circumstances of the Urals and what lessons were derived from putting theory into practice. The story will be divided into two logical parts: a survey and an illustrative part. The survey considers general principles of the Ural town-planning within the period investigated; it is followed by the examples of certain town-planning formations.

We shall start from the past, because by the time the period of rapid socialist industrialisation started, the Urals had already had a long-standing town-planning tradition that was rooted in ancient times.

The History of Town-planning in the Urals

"The Urals! The stronghold of the power,
Its minerals getter and its blacksmith,
The witness of our ancient glory
And the creator of the present one».
A. Tvardovsky[1]

From the earliest time, the natural resources of the Ural land attracted people. According to archeological research, the first traces of man here go back to the early Paleolithic Period. Thus, the territory of the Urals has been developed for the last five thousand years.

As far back as the XVIII century, Russian researchers, such as S. Remezov, wrote about settlements, encampments and burial grounds that were found everywhere. For a long time, the remains of ancient mines served as reference-points for miners and owners of mines and foundries.

The pre-historical period revealed only by archeological finds, had ended by the IX century. After that, the Great Novgorod began to gradually colonise the Ural land. The Novgorodian chronicles and various missive letters were some of the first written documents to tell us about the Urals

fig. 2.1
Isker – the former capital of the Siberian Khanate before it was conquered by Yermak.

and its customs. An endless succession of tribes, peoples and civilisations that populated the Ural range (fig. 2.1), coming and going, destroying or enriching each other culturally, was "crowned" with the Russian people.

The Russians were more and more successful in the fight for the territories, as a result, the Urals and together with it, Siberia, were owned by Russia. However, the colonisation of the Ural lands did not happen at once. Centuries passed between the first cautious sorties of the Novgorodians to the areas near the river Kama and the complete political subordination of the Urals to the power of the Russian state.

The XI to XVII Centuries. The Urals is Subordinated to Russia

As mentioned before, the Novgorodians proved to be the most enterprising of all the Russians; in the IX century they were the first to dare to explore the thick forests of the north-east. It was the valuable furs that became the main object of their interest (fig. 2.2). Having subordinated the native peoples of Perm, the peoples of the rivers Pechera and Yugra as well as the areas lying in front of them – near Zavolochye and Vyatka, the

fig. 2.2
Voguls and Ostyaks with the tribute in a Russian town Kashlyk.

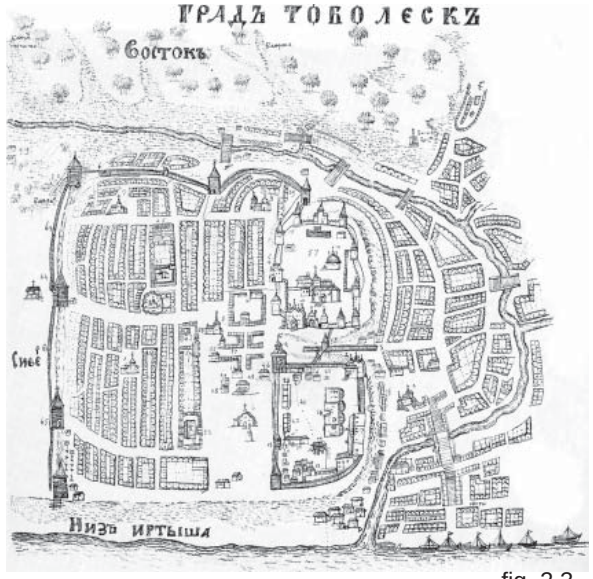


fig. 2.3

Novgorod faced another problem: how to guard their lands against pretenders – their countrymen from the Suzdal and Moscow principalities. Gradually, the power was transferring into the hands of Moscow, and at the beginning of the 1470s, the Moscow Prince Ioann III eventually appropriated all the Novgorodian lands. By the XVI century, the Russian period replaced the Novgorodian period of Russian history.

From the middle of the XVI century, the colonising of the Urals took on a systematic nature, and, as a consequence, construction activities arose there. In 1504, the old town of Cherdyn was built in a new place. Favourably situated on the Moscow trade route that connected Russia with Siberia, Cherdyn began to actively develop as a trade-and-administrative centre, and in 1535 it became the capital of Great Perm. It was the outmost town on the east of the Russian state. Defensive points were also constructed – "tsar's" palisades that formed a strategic network. The small towns of Kankor (1558), Orel-gorodok (1564), Sylvensky, Yaivensky and Ochersky (1598) were among them.

The successful campaign by Yermak to colonise Siberia brought Russia vast territories of the mountainous part of the Middle Urals and Middle Transurals. Here the following small towns were founded: Verkhne-Taguilsky (1583), Tuymen (1586), Tobolsk (1587) (fig. 2.3), and Turinsk (1600). Of special importance were the fortresses of Lozva (1590), and Pelym (1593). They defended the Moscow road and became the centres of two administrative districts – *uezds*.

Up to the XVII century, fortified settlements were constructed, following the traditions of Central Russian architecture, in elevated places, at the confluences of rivers. The configuration of the layout was dictated more by the features of local landscapes, than by a geometrical form. Fortifications were enclosed with wooden walls, with towers on the corners and at the entrances. A number of fortresses and palisades that were located in places where trade routes crossed had trading areas outside city walls – *posads* with residential blocks occupied by merchants and craftsmen. Later, these grew up to become the first Ural towns and cities, such as Vyatka, Cherdyn, Verkhoturye, Kungur, Irbit and Ufa.

Having firmly established themselves in the north of the Urals, the Russians turned towards the south. At the end of the 1540s, Tsar Ivan Grozny (the Terrible) decided to annex the lands of the Kazan Khanate, thus strengthening the eastern borders. The Russian tsar was preparing himself to colonise the lands of Central Asia and Siberia, thus extending the possibilities for trade. The successful capture of Kazan in 1552 and the joining of Bashkiria to Russia opened the way to the Mid-

fig. 2.4
A prayer of Syberians.

dle and Southern Urals. Russian settlers began to populate the middle areas near the river Kama.
The Bashkirian population actively resisted their Russian colonisers; that is why a Southern system of fortifications was constructed. These included Okhansk (1563), Novo-Nikolayevskaya *sloboda* (1591), Nizhne-Chusovskoy (1568) and Verkhne-Chusovskoy (1616) towns, Tyumen (1568), and Kurgan (1616). To defend trade routes, a chain of fortified settlements was built along the river Kama: Ufa (1574), Sarapul (1556), as were the Birskaya and Tabynskaya fortresses (1574).

The process of colonising the Urals was accompanied by the active dissemination of the Orthodox culture (fig. 2.4). As far back as 1462-63, the Perm land had adopted Christianity, after which the flow of Russian settlers into the areas near the Urals considerably increased. As well as with fortresses, monasteries were also built. The latter followed the traditions of the central-Russia defensive architecture. One by one, these monasteries were gradually rebuilt in stone. The Dalmatovsky Monastery of the Dormition on the river Iset (1644), the Pyskorsky Monastery of the Transfiguration (1560), the St. Nicholas Monastery in Verkhotyrye (1604) and others became surrounded by many privileged residential quarters – *slobodas,* and villages. Over time these had become totally equal to military fortresses in their defensive ability. Thus, apart from their main function, the dissemination of Christianity, monasteries exerted a considerable influence on the colonisation of the new territories, as well as on the development of agriculture.
Apart from monasteries, individual churches were built in towns and villages. In the early days, wooden churches of the frame type were built. The first stone churches, for example, the Trinity Cathedral in Solikamsk (1684-1697), had the traits of Moscow and Yaroslavl architecture in local interpretation. In the XVIII century, the stylistic characteristics of Moscow baroque emerged in the Urals.

Industrial development in the Urals did not begin at once, but during the process of its colonisation. At the beginning, the Russian conquerors did not suspect what innumerable treasures were buried in the depths of the Ural land. That is why, we can assume that coal, ore and minerals were not their main reason for their movement to the east; it was fur skins. Nevertheless, some time after their arrival in the middle and upper reaches of Kama, the Russians began geological prospecting.
In that period, Russia did not pay much attention to mining and processing of mineral resources; even salt was brought to the region for a long time. However, at the beginning of the XV century, Russian settlers established the first in Russia salt works on the bank of the river Borovaya. Somewhat later, in about 1430, the settlers discovered an even richer deposit nearby and transferred their works there, naming the new place “Sol’ Kamskaya”. That was how the city of Solikamsk emerged.
In 1564, the Stroganovs, a distinguished family, received an official document from the tsar. It handed over “waste” lands along the rivers Chusovaya and Kama to their possession. In the XVI and XVII centuries they became the owners of huge estates that represented a good half of Great Perm. The Stroganovs began thorough development of the salt deposits. They built a great number of small salt-processing towns: in 1564, in Kergedan or Oryol-gorodok, in 1568 – in Nizhne-Chusovs-

koy, 1606 – in New-Usolye and, closer to Ufa, in Tabynsk (1574). In the meantime, the Pyskorsky Monastery erected by the Stroganovs, began to build salt-works on the river Kama in Rozhdestvenskoye Usolye, which was more often referred to as Dedykhin, and on the river Zyryanka. By the first quarter of the XVII century, private salt production in Great Perm had already become widely developed: just in Sol' Kamskaya and Zyryanka, there were 37 salt-works with different owners.

In the same XVII century, the first metal-smelting works emerged in the Urals. As there was no private enterprise, the state itself became the initiator of the metallurgical industry. Ore deposits had been prospected for before that time. As early as 1491, Great Prince Ivan Vassilyevich sent his people, accompanied by two Germans, to seek silver ore at the Pechera River. In spite of the fact that the prospectors did perform the task given to them, their discovery did not have any practical application. At that time, Russia, in fact, was not engaged in processing metal; it imported metal items from abroad; only certain kinds of private workshops that smelted metal were an exception to that.

Finally, in about 1640, by the order of Tsar Mikhail Romanovich, the first foundry in Great Perm was established at the Pyskorsky Monastery. Originally, they smelted iron ore there and later, copper ore, too. The Russians developed mines together with the Germans. The Ural population knew about the deposits of copper and iron long before that: local craftsmen had their own small foundries; blacksmiths worked iron. Probably, it was they who showed the ore deposits to the Russians. During one hundred years, the Pyskorsky works remained almost the only one in the Urals. In 1770, at the Neiva River, the Fedkovsky iron foundry was established, but it existed for only ten years. Later, the Dalmatov Monastery also built up a small iron-smelting facility in the place of the future Kamensky works, but it served only the monastery itself. Like the majority of industrial structures of that period, the works were built of wood and were not retained.

Finally, during the last decades of the XVIII century, prospecting for mineral deposits was done on a large scale. New deposits of iron and copper ores, building stone, brick clay, precious stones and rock crystal were discovered.

Conquering the Ural land did not come easily to Russia. Nevertheless, that period left a pronounced imprint on the expressiveness of the layout and building of Ural cities; it left us such remarkable architectural works as the Verkhotursky Kremlin, the Orenburg and Nikolayevsk fortresses, the St.Nicholas Monastery in Verkhoturye, and the Dalmatov Monastery, that were erected in the best traditions of Russian architecture.[2]

The XVIII Century. Industrial Expansion

In the XVIII century, a real wave of industrial development swept over the Urals. Discovery of mineral deposits and an active foreign policy and the reforms of Peter the Great stimulated the construction of the new and the growth of the existing Ural settlements. At that time, over 200 metallurgical plants were built (fig. 2.5). The Urals turned into the main metallurgical base of Russia. Later, the majority of metallurgical plants grew up to become towns and laid the foundation of the new type of settlements around Peter's factories: factory-towns that represented not only new town-planning principles, but also new types of buildings and constructions for Russia.

The principles of the Commission on Building St.-Petersburg, with the ideas of regular European town-planning, were taken as the basis of the layout and construction of state factory-towns. That is why the majority of industrial settlements of the Northern and Middle Urals acquired regular layouts with clear functional zoning. A plant with a

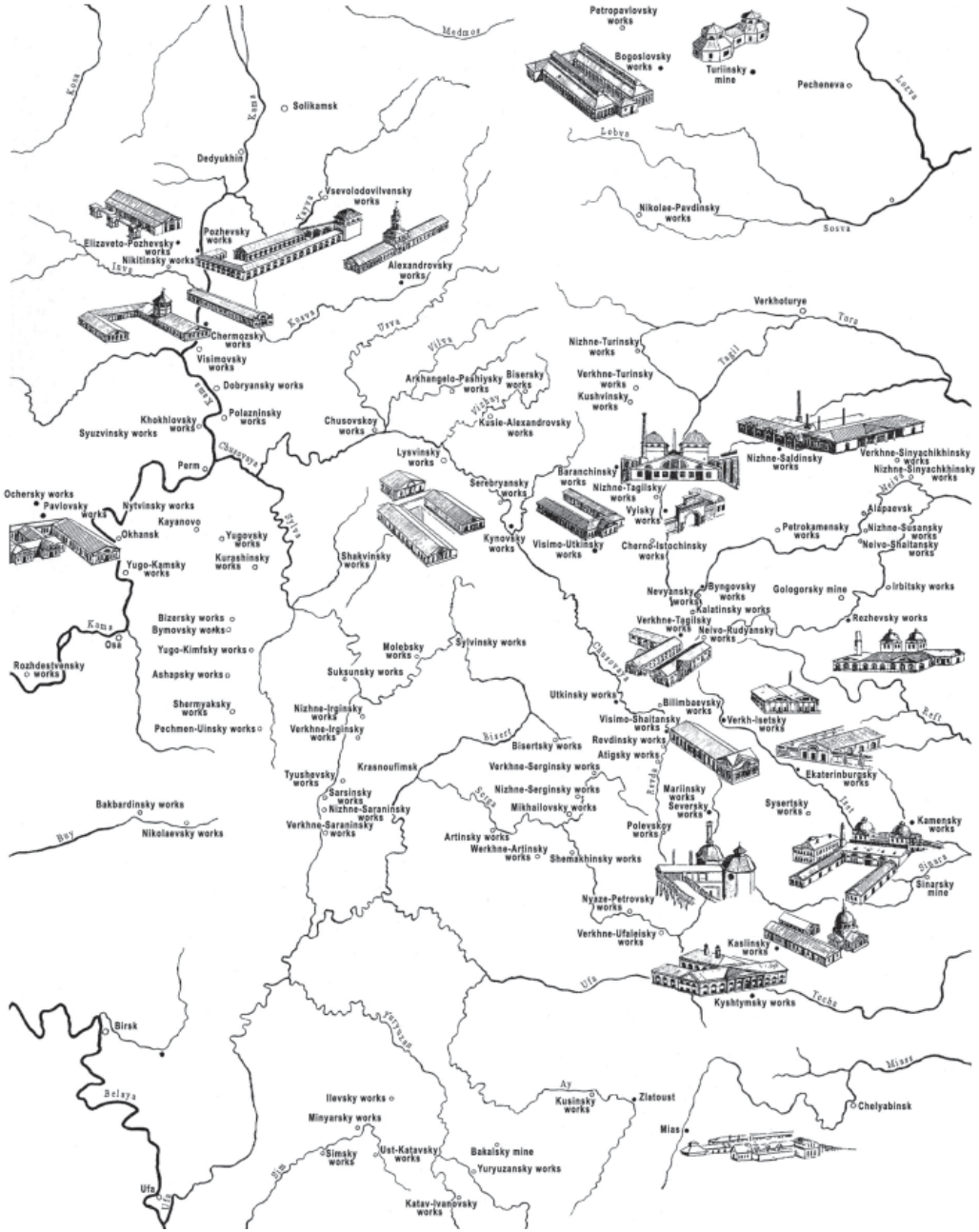


fig. 2.5
Ural factory-towns and fortresses by the first half of the XIX ct.

system of squares in front of it formed the centre of the city. The industrial layout of southern Ural towns was less regular by virtue of the fact that those towns belonged to private persons, not to the state.

A factory-town represented a single complex, usually enclosed within a fortress wall. Within the limits of the fortifications, there was a plant with a dam, a plant square and residential blocks. The population of factory-towns, in one way or other, was related to plant production, that is why in the majority of cases, the plant and a square in front of it formed the centre of a whole complex. Together with the dam and pond that were needed to set production mechanisms in action, the plant represented a compositional centre, to which the main city streets were oriented. As a rule, the main street of the factory-city went along the crest of the dam, connecting all the elements of the city layout into one whole.

When making general layouts, the rectangular layout of streets and squares was the most popular. It had many advantages: it allowed an easy orientation in the city and provided a simple general layout and building for streets. More importantly: the rectangular layout of the city combined with the layout of a production complex in the best possible way. The general layouts of Ekaterinburg

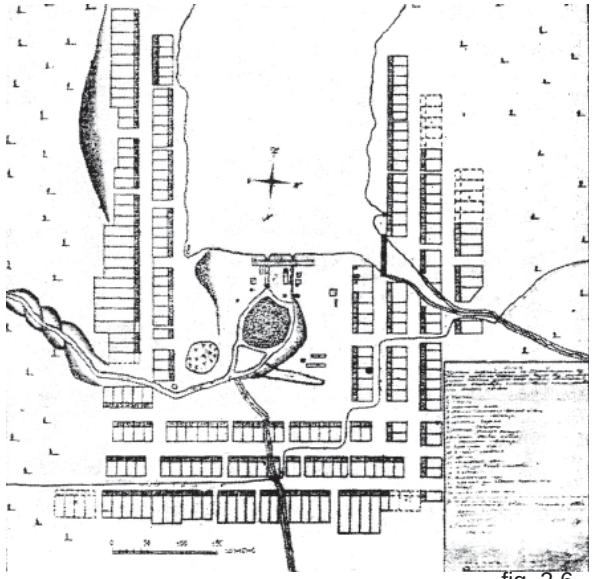


fig. 2.6

(1723), Izhevsk (1760), Sysert (1732), Verkhnyaya Salda (1738) (fig. 2.6) and many other cities were designed according to the above-mentioned principle.

The system that was closer to a radial one was used much more seldomly. It is characteristic of the oldest Demidovs' plants, especially, of Nevyansk (1700) (fig. 2.7) and Nizhny Tagil (1722).

In certain general layouts, the rectangular and radial structures were combined. Usually, it was the features of the landscape that dictated it. Thus, for example, the city of Zlatoust emerged in the mountainous locality that was often crossed by narrow river valleys. That is why the city was built as individual parts situated on relatively flat fragments of the relief; straight streets connected them with the centre. The main streets fanned out

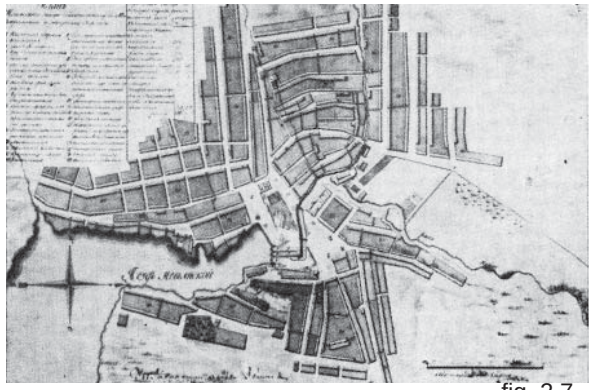


fig. 2.7

from the plant – the centre of the city; the building, with a rectangular net of streets, adjoined the radial streets (fig. 2.8).

Together with the foundation of the new cities, the reconstruction of already existing ones was being carried out. At the decree of Peter I, public centres of the Ural cities were rebuilt in stone. Extensive industrial works were carried out in Solikamsk, Verkhoturye, Usolye and many other cities. These rebuilt centres are characterised by ensembles, they have traces of "Moscow baroque" that was interpreted by local masters in their own way. Such are the ensembles of the Verkhoturye Kremlin (1698-1712) and Stroganov's structures in Usolye (1724-31). The style of the "Moscow baroque" also served as the basis for the architecture of the new plant centres.

The issue of the reliable defense of the borders remained as topical as ever. That is why, in the first half of the XVIII century, to defend them against the Kirghiz-Kaisaks, a new row of defensive lines was built: Zakamskaya (1732), Samarskaya

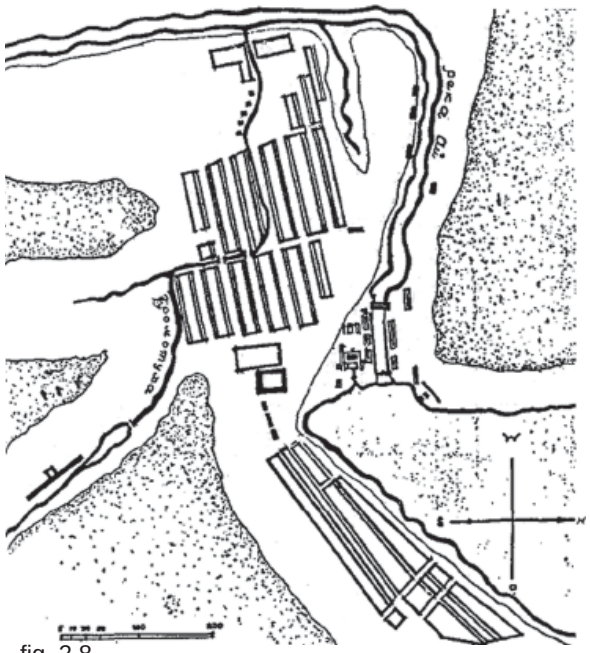


fig. 2.8

(1736-1742), Ekaterinburgskaya (1737), Staraya Ishimskaya (1737), Sakmarskaya (1739-1742), and Verkne-and-Nizhne-Uiskaya (1737); later they joined the Orenburg lines. Among others, such fortresses as Orsk (1735), Verkhneuralskaya (1734) (fig. 2.9), Chelyabinsk (1736), Troitsk and Orenburg (1743) were constructed as part of the above-mentioned lines.

When fortresses of the XVIII century were built, European traditions were taken into considdration; fortresses had a regular geometric layout following the rules of the art of fortification. The *posads* of many of them also had regular planning.

Only by the XIX century, the defensive function of Ural settlements was not needed any more.

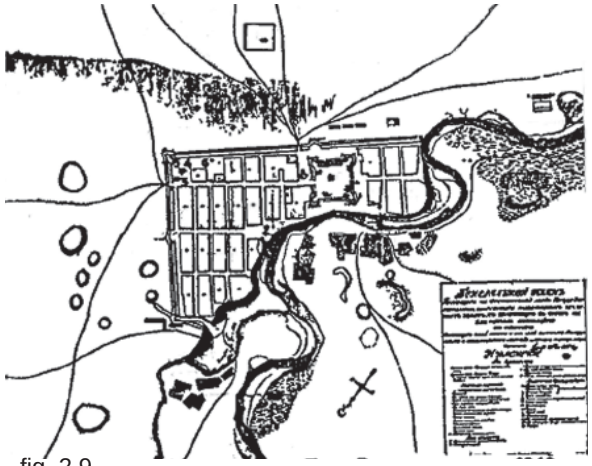


fig. 2.9

Thus, during the XVIII century, Ural cities and towns formed their economic profile and the system of layout that they retained up to the October revolution. Only Ekaterinburg was made an exception: it became the centre of administration of the Ural mining *okrug*, that is why it combined its original pure industrial specialisation with the administrative function. 70% of the modern network of Ural cities has developed from plant settlements or administrative-and-trade settlements that were founded in the XVIII century.[3]

The XIX and the Beginning of the XX Centuries. Regular Layouts and Crisis of the Capitalist City

In the period of Pugachyov's uprising (1773-75), many Ural towns and fortresses were destroyed. A number of new architectural and constructional reforms determined the strategy of the reconstruction of the cities. At the beginning of the XIX century, the Commission for building St.-Petersburg and Moscow in stone began to work on the issue of re-planning Russian cities, focusing at structuring their general layouts. At the same time, in 1806, a mining reform was carried out in the Urals. One of its main principles was the separation of construction as a special part of mining-and-metallurgical administration. Professional architects were responsible for the construction of a plant; they were in charge of both the construction of the industrial facilities and the layout of the adjoining settlements. That was how architects of the Ural mining administration and *okrugs* emerged.

In the first half of the XIX century, a whole galaxy of talented architects – graduates of the St.-Petersburg Arts Academy – M. Malakhov, A. Komarov, K. Lutsenko, I. Podyachev, A. Chebotarev, S. Dudin, F. Telezhnikov, and I. Sviyazev were working.[4] These architects of the Mining Administration introduced the high standards of classical architecture into the towns of the industrial Ural and created unique industrial ensembles of European class. The ensembles still form the centres of Ekaterinburg, Nizhny Tagil, Nevyansk, Zlatoust and many other cities.

General layouts designed at the beginning of the XIX century, determined the development of many settlements located near the plants and industrial cities of the Urals for the second half of the XIX century. The architects of the Mining Administration and their students also took an active part in building up the established administrative-and-trade towns of the Urals. They worked out the general layouts of the towns' development and the main classical ensembles of the city centres.

The general layouts were mainly made with consideration of the established building that had been formed in the previous periods. Both the regular development of the centre and sporadic development that had formed outside the limits of the original plans of plants were equally taken into consideration. Apparently, architects were aware of the fact that despite lack of adherence to the planning canon, the sporadic development of certain places emerged not by chance, but under the influence of important factors, such as closeness to a reservoir, to communications, to a place of work and the like. That is why, when designing general layouts, architects took into consideration sporadically formed building, trying to harmonise it with a regular system whenever it was possible. Natural factors were also considered in town planning.

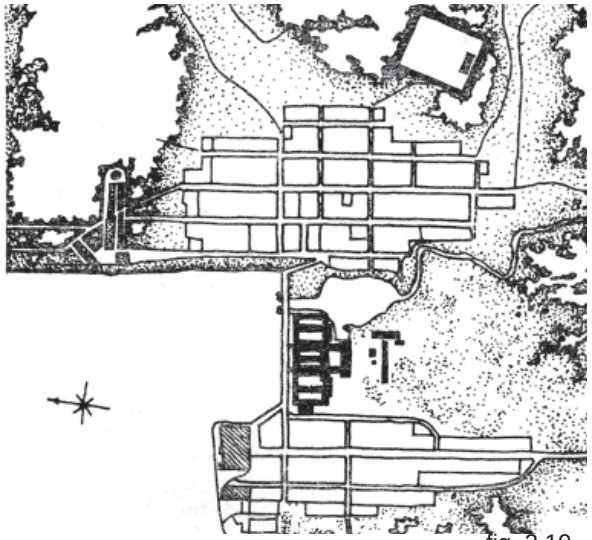


fig. 2.10

The realisation of such general layouts began in the second half of the XIX century. The period of intensive development of capitalist relations served as another spur to an intensive growth of populated areas.

Between the XIX and XX centuries, a network of railways was constructed in the Urals, which greatly influenced the development of towns and cities. The Samara-and-Orenburg railway (1874-77), the Ural mining-and-metallurgical railway (1873-78); the Ural railway (1873-88), Samara-and-Zlatoust railway (1885-90) – all of them provided for transit and intra-regional goods traffic. As a result, Demidovs' factory-towns (Orenburg, Ufa, Chelyabinsk) got a new incentive to their development and a rise in status to administrative, economic and cultural centres for the region.

By the beginning of the XX century, "regular"

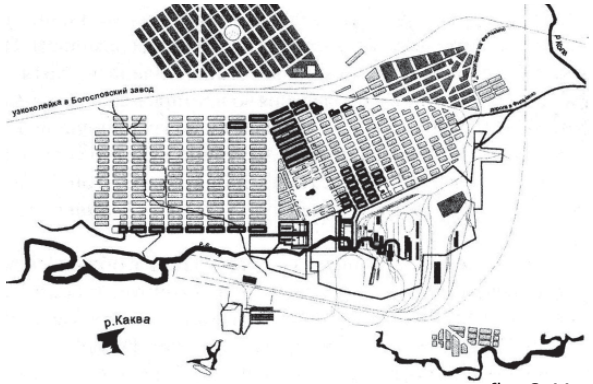


fig. 2.11

general layouts designed by the Commission for constructing St.-Petersburg and Moscow in stone had been almost fully realised in old cities. The plans of Ekaterinburg, (M. Malakhov, 1845), Izhevsk (S. Dudin, 1808) (fig. 2.10), Perm (I. Lem, 1784), Ufa (V. Geste, 1819) and other cities, with their stable composition determined the development of these cities up to the 1920s.

New industrial centres were also laid down. Thus, in 1894, in the Bogoslovsk *okrug*, the Nadezhdinsky steel-rails works was built (fig. 2.11). Its production went to the construction of the Great Siberian railway. The city was built within one year and was referred to as an "industrial colony of St.Petersburg and a "Northern Eldorado".

By the beginning of the XX century, the "modern" style had established itself in architecture; it reflected the process of the industrial revolution to the fullest degree. Mining and civil engineers began to replace the architects of the Mining Administration. In planning Ural cities, more atten-

tion began to be paid to the architecture of the city centre and its road junctions. New types of buildings began to emerge in the Urals at that time: educational (grammar schools, schools, colleges); entertainment (theatres, clubs); commercial (commercial houses, banks, passages, rows of stalls), medical (hospitals) as well as facilities servicing transportation systems (railway stations, ports, depots). Among the Ural engineers and architects, the following were distinguished by their talent: the Perm architect A. Turchevich, the Vyatka architect I. Charushin, the Ekaterinburg architect Yu. Dyutel.

Nevertheless, active construction that was carried out in the capitalist period had a negative effect on the town-planning situation. At the beginning of the XX century, Russian cities found themselves in the situation of sporadic development.

In the Urals, this development had its peculiarities. Capitalism utilised the already realised "classical" plans in its own way: industry filled in all unused spaces, from those intended for residential blocks to trade squares and green zones. Sporadic temporary settlements – *nakhalovki* that emerged in the process of railway construction continued their existence well after these works had been completed. Railway lines and storage sites often separated the built-up part of the city from nature, rivers and wooded areas.

The distortion of the general layouts of the XX century led not just to the loss of the architectural-and-aesthetic unity of Ural towns. On the eve of the October revolution, their functional possibilities were endangered and again required urgent measures. Such was the situation that the Soviet Power inherited when restoring the economy of the Ural Region.

The 1920-30s. Socialist Industrialisation of the Urals

"The difficulties and duration of regional planning often make us start planning individual geographic locations before the work on regional planning is completed. Practical tasks of construction cannot stand delays. Planning should be carried out, but even so, it is impossible without the consideration of regional plan, the preliminary layout of which should be given, at least, for orientation"
V. Davidovich[5]

The Strategy of Social and Economic Development

With the establishment of the Soviet Power in the Ural Region, the period of colossal transformations began there. Already at the time the State Plan of Electrification of Russia – GOELRO – was being made, Lenin underlined the key role of the Urals and Siberia in the development of the national economy. According to Lenin, the future of the Urals depended on providing the country with coal. Initially, not having exact information on the deposits of coaking coal in Kuznetsk, he put forward the idea of exchanging Ural ore for coal from Donetsk. Later, when defining the "Immediate Tasks of the Soviet Power," he was determined to combine the Ural iron ore with the Kuznetsk coal. Thus, in the 1918-1920, by order of the All-Union Soviet of National Economy – VSNH, the association of Siberian engineers developed the project of the Ural-and-Kuznetsk integrated works – within the framework of GOELRO. In 1922 the State plan – Gosplan – of the USSR supplemented the project of the Ural-and-Kuznetsk industrial complex with the developments in economic zoning.

Later, Stalin continued the realisation of Lenin's idea of raising the industrial power of the Urals and Siberia by uniting their natural resources to form a huge administration-and-production complex. The first five-year plan of national economic development, the main task of which was the "uniform distribution of industry in the territories of the country", gave the Urals the role of the "middle industrial base of the Soviet Union." The first five-year plan allocated 1962 mill. roubles to develop the second main industrial base of the Soviet Union; the second five-year plan allocated 7900 mill. roubles.[6]

The restoration of the economy of the Urals and the establishment of the Ural-and-Kuznetsk integrated works signified a radical transformation of the economic system of the Urals that had been formed over many centuries.

In 1923 the Soviet government formed the Ural administrative region to encourage resurgence of industry in the Urals (fig. 2.12). The region included the territories of today's Sverdlovsk, Perm, Chelyabinsk and Tyumen regions (*oblasts*), which made a total of 45 *okrugs*. The city of Sverdlovsk became the capital of the Ural administrative region.[7]

The first five-year plan recommended the territorial-and production division of the Ural economic region into seven economic-and-geographical sub-regions: Northern, Middle-Ural Western, with its centre in Perm; Middle-Ural Eastern, with its centre in Sverdlovsk; South-Eastern, with its centre in Chelyabinsk; South-Western, with its centre in Ufa; the territory of the Tobolsk North, and the agricultural *okrug* of Trans-Urals.

The development of the economy of the Urals required the strengthening of its power base. Under the GOELRO plan, in 1920 the establishment of the Trans-Ural electric power line was outlined; it was based on three main regional electric power plants: the Chelyabinsk (south), Gubakha (north) and Middle-Ural plants.

The development of industry and other sectors of


УРАЛЬСКАЯ ОБЛАСТЬ
АДМИНИСТРАТИВНАЯ КАРТА
УРАЛЬСКАЯ ОБЛАСТЬ
BEREZNIKI
NADEZHDINSK
PERM
MOLOTOVO
NIZHNY TAGIL
SVERDLOVSK
CHELYABINSK
UFA
MAGNITOGORSK
ORENBURG
Blyava
Orsk
ГОРОДСКИЕ
НАСЕЛЕННЫЕ ПУНКТЫ С ЧИСЛОМ ЖИТЕЛЕЙ
Масштаб 1:5000000
В одном сантиметре 50 километров
УСЭ том I

fig. 2.12

the economy required the extension of the network of land routes and waterways both for communication with other regions and internal transportation of goods and cargo. Old railways, such as the Perm railway, were reconstructed. The section of the Trans-Siberian railway – Moscow-Sverdlovsk-Kurgan-Omsk-Novosibirsk-Kuzbass – was turned into a double-track lined "super-railway", to provide a continuous supply of Kuznetsk coal to Magnitogorsk furnaces. Many new lines were also constructed. The Urals received a new exit to Siberia through Sverdlovsk – Kurgan. Communication with Central Asia was planned to go along the railway Troitsk-Orsk-Aktyubunsk. The established Kama-Pechera waterway connected the Urals with the centre of the country, having become an important part of Volga-Don, the main water artery of the country.

However, in the economy of the Ural region, the leading role belonged to the developing multi-sector industrial complex, the core of which represented ferrous metallurgy. The foundation of the Ural-and-Kuznetsk complex initiated the development of a qualitatively new type of settling and a further growth of towns around industrial enterprises.

Geological prospecting in formerly unexplored regions of the Urals revealed a great potential for raw material deposits in many of them. Such regions were included into the industrialisation plan. When newly discovered regions, where areas with mineral resources alternated with populated areas, were included into the plan, a rational from the point of view of economics and technology distribution of new industrial facilities and their addition to the network of existing towns became the main task

Systems of Settling

The construction of the second industrial base could not stand delays. Hence, while in 1929 in Moscow the Second Town-planning Discussion just began its work, large-scale construction works already started. At that stage, practice began to outstrip theory. In fact, the principles of socialist planning were developed parallel to the making and realisation of projects. The building projects of the Ural region actually tested the viability of the theses of the Second Town-planning Discussion and introduced their amendments into them.

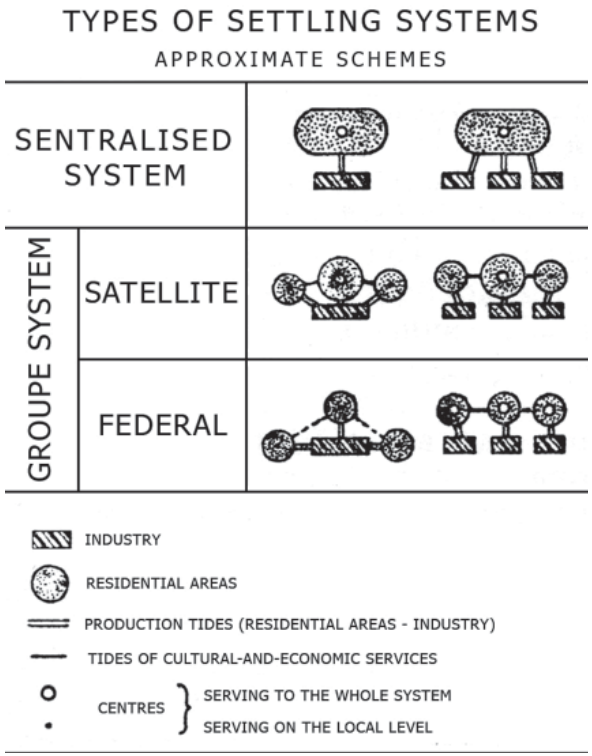
According to the developed principles of planning, the establishment of the type of settling an economic region was carried out on three levels:[8]

Regional planning, the largest level that refers, in fact, to state level. Regional planning covers vast territories of an economic region that extend for hundreds and thousands kilometres. Populated areas of the region form a network of individual populated centres (hubs) that are united by indirect planning ties. Hubs that are close to each other, even if they were not connected among themselves by planning, required the solution of such issues as developing water supply, transportation and agricultural zones. The following are the examples of regional planning: the region of "Greater Magnitogorye" and the Chernikovsky industrial region.

Planning of hubs, medium level. The range of planning covers a few dozens of kilometres. It concerns with the organisation of economic objects (plants, mines, a railway junction and agricultural enterprises), the territorial closeness of which leads to the establishment of a single populated system. The following are the examples of hub planning: the hubs of Greater Sverdlovsk, Greater Tagil and Greater Chelyabinsk.

Planning of individual populated areas covers the area of a few kilometres. At this level, the planning of parts of a hub system, – cities or settlements at a certain plant or industrial area – is achieved. Here are the examples: Bereznyaki; Bakal in the system of Greater Chelyabinsk; and the Uralmash

fig. 2.13



in the system of Greater Sverdlovsk.

Of the three levels enumerated above, the issues of the hub planning required the closest attention by the planners. It was at that stage of work that the choice of a territory and a type of settling was made. What is more efficient: when one city serves a group of plants or when a few populated areas serve a large industrial site? Hence, two main types of settling were developed: the centralised and the group type of settling (fig. 2. 13).

A centralised city unites all the population within its territory, concentrates cultural and customer-service facilities; it services one or several plants. In *group types* of settling, different enterprises are served by different cities. The functions of an administrative-and-cultural service are also distributed among these cities. Relationships between the groups are interlaced; there is a mutual attraction between the groups. The group system, in its turn, was divided into two types:

- *Satellite* system, where one of the cities played the role of the dominating centre. This system is also known as "Greater (Bolshoi) city".
- *Federal* system, where the function of servicing is distributed among the cities.

Town-planning concepts that prevailed at the end of the 1920s, decided the group system would be the main method of distributing the elements of industrial hubs in the Urals. The satellite system became the most widespread, because, due to the specific conditions of the Urals, a great number of industrial hubs were established around existing industrial centres. Both the satellite and the federal systems could be compact (nuclear) or linear in their structure.

According to the developed principles, between the 1920s and 1930s, the projects of "Greater cities" and "industrial hubs" began to be transferred from paper into practice, such as Chernikovsky, Sverdlovsky, Chelyabinsky, Tagilsky, Kamensky among others. The definition "Greater" meant enlargement of the architectural city-planning scale, making the streets wider and increasing the number of storeys in high-rise buildings. At the same time with Sverdlovsk (the capital), work on layouts, also termed "Greater," was carried out in other Ural cities, such as Tagil, Ufa, Perm, Chelyabinsk.

It is also typical that in the period of industrialisation in the Urals, small towns were grouped around large industrial centres that carried out certain production activities. In the north of the territories in front of the Urals, a group of towns involved in chemical production was formed: Bereznyaky, Solikamsk, Gubakha and others. In the Middle Urals, towns were formed around the Nadezhdinsk and Nizhne-Tagil metallurgical plants. The Perm agglomeration acquired the form of a group settling. Small towns in the zone of Sverdlovsk were drawn into the sphere of its influence, gradually losing independent significance. A group of towns around Chelyabinsk grew considerably owing to the development of populated areas situated in the zone of the Chelyabinsk brown-coal basin. Groups of populated areas began to be built around Ufa, Orsk and Zlatoust – large centres of mechanical engineering and metal-working. In al-

most uninhabited steppe, the city of Magnitogorsk grew up, which started the establishment of a small network of populated areas near deposits of minerals, railway stations and agricultural facilities in the suburban zone of that city.
Large cities themselves changed their planning structure: sotsgorods and their satellites began to emerge along their perimetres.

The structure of national economy administration was reorganised to accelerate the construction of the industrial base. That, in its turn, led to a highly specialised subdivision of planning-and-construction organisations. A division of architecture into industrial and civil branches took place in planning. This was another characteristic feature of that time. That is why, each of the two branches should be considered separately from this point onwards.

Industrial Architecture

By 1935-36, the project of the Ural-and-Kuznetsk industrial complex suggested the establishment of five gigantic new metallurgical plants in the Urals and Siberia, each with a capacity of 660 thousand tons. Among them, the plants at the Magnitogorsk iron-ore deposit, Bakal deposit and Tagil-and-Kushva districts were planned to be built in the Urals. In addition, the construction of enterprises of other branches of industry was also planned which could supplement ferrous metallurgy, and thus a single territorial-and-production complex was formed.
To construct the metallurgical giants of the Ural and Kuzbass, mines and quarries, a great amount of machine-building production was required. Furthermore, as has already been mentioned, preparation for the war began; enterprises that could easily change their profile to military products were needed. The old machine-building plants of the Urals could not cope with that task that is why the construction of the Ural Heavy Machine-Building Plant in Sverdlovsk became a priority.[9] Its construction began in 1928, before the foundation of the Magnitogorsk and Kuznetsk integrated iron-and-steel works. In 1929, the Chelyabinsk Tractor Plant was founded, with the design output of 40 thousand tractors. During the years of the first five-year plans, carriage works in Nizhny Tagil and Ust'-Katava as well as a locomotive plant in Orsk were being built.
The construction of large chemical plants in places that were rich in mineral resources, such as Berezniky, Solikamsk and Vishera, was an important supplement to the Ural industrial complex. Moreover, chemical production developed on the basis of the waste products of the metallurgical industry.
A group of design and construction branch trusts, bureaus and institutes that were under the authority of VSNKh of the USSR were given the task of constructing all the numerous industrial enterprises and reconstructing already existing ones. Each organisation specialised in one industrial branch: the State Institute for designing Metal Works – Gipromez – was in charge of metallurgical facilities; Khimstroi – chemical plants, etc.
At that time, foreign specialists played an integral role in design-and-construction organisations. The Gipromez was a vivid example of such an organisation:

"In the corridors and rooms of a large house in Leningrad that was occupied by Gipromez, one could meet, together with the Russians, the Germans, Frenchmen, Americans [...] The specialists spoke not only different languages and often needed interpreters, but, which is more important, they represented different schools of design"[10]

Thus, for example, from 1930, the American firm Oglebay Norton & Co. from Cleveland, Ohio[11] rendered Gipromez technical assistance in the

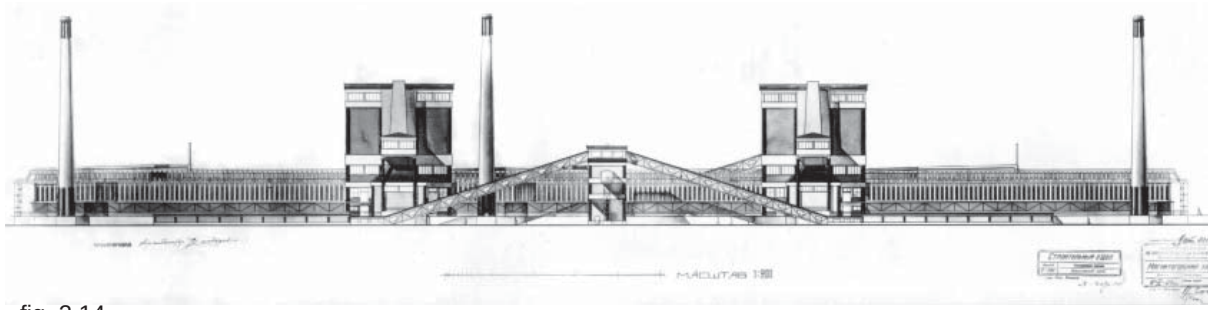


fig. 2.14

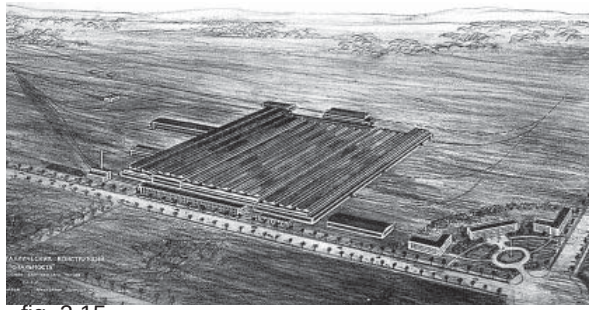


fig. 2.15

development of mining and metallurgical works. German specialists worked in the Ural branch of Gipromez from 1929, under individual contracts for 1 or 2 years.

The Magnitogorsk Metallurgical Industrial Complex was one of the main factories that were designed by the UralGipromez. That is probably why Magnitogorsk has a special importance for the development of industrial architecture of the Urals. It served as a creative laboratory and the place for development of standardised technological schemes for large metallurgical shops. From 1927, such prominent architects as V. Sokolov, S. Zakharov, V. Gofman, A. Lubnin were involved in the development of these standardised schemes, which were widely used later for constructing other metallurgical plants of the Urals (fig. 2.14).

By the end of the 1920s Soviet specialists already knew the main principles of design and advanced methods of the construction industry of that time, but, perhaps, like European industrial architects, they lacked one important aspect of construction: how to do it quickly. That is why the Soviet Government addressed the firm of Albert Kahn that possessed a unique method of conveyer production of projects, and the method of construction using prefabricated elements.

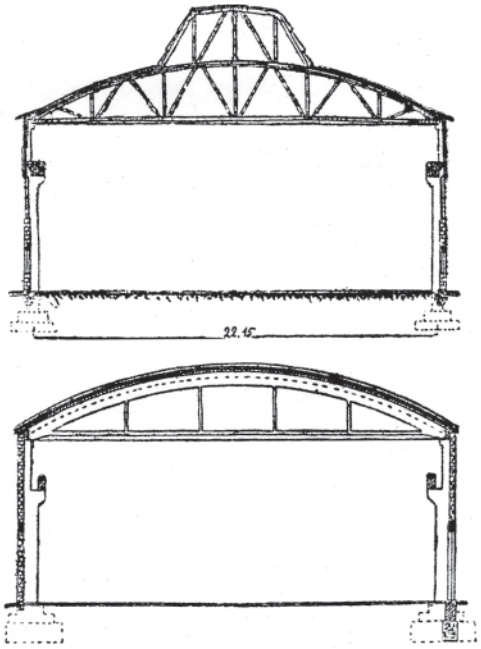
Thus, the American bureau of Albert Kahn, Inc. helped in laying the foundations of the majority of enterprises in the Urals and Siberia. The plants constructed by the firm of Albert Kahn had mainly a metallurgical and machine-building profile, but not only. The 1936 list of constructions by Albert Kahn, Inc. "Industrial and Commercial Buildings" mentions, in particular, the following enterprises and objects in the Urals: steel plants and rolling mills in Magnitogorsk, Nizhny Tagil, Verkhny Tagil, Kamensk; a tractor plant in Chelyabinsk; an automobile plant in Chelyabinsk; an asbestos plant in Asbest; a machinery and machine tools in Verkhniaya Salda (fig. 2.15); the forge shops in: Chelyabinsk, Magnitogorsk, Nizhny Tagil; the machine shops in Chelyabinsk, Sverdlovsk; the foundries in Chelyabinsk, Magnitogorsk; and many others.[12]

The Uralmash plant, the first Russian giant of machine-building, was designed in UralGipromez. The Chelyabinsk tractor plant was designed in Kahn's office in Detroit. Reinforced concrete structures were also manufactured in America, then brought to Russia and assembled on site. Everything that was needed for the production of tools, mechanisms and equipment was also brought from America. The Magnitogorsk metallurgical industrial complex was the fruit of the joint efforts of UralGipromez and Albert Kahn, Inc.

Projects that followed the Chelyabinsk tractor plant one were developed in the Moscow branch of the firm of Kahn – Gosproektstroi. It was the largest design bureau in the world at that time; about four thousand Soviet architects, engineers and technologists were trained there. Later, the working methods of Kahn formed the basis of the Soviet school of standardisation of industrial design. The firm of Kahn also coordinated cooperation with eastern firms that delivered equipment and advised the constructors of individual plants.

In 1932, after the contract with Albert Kahn, Inc. had been terminated, German specialists took over the leading position in cooperation with the USSR. By the middle of 1933, 1552 Germans,

fig. 2.16
Sukholozhsky Asbesto-Pipes plant, transverse sections of the shops



287 Americans, Austrians, Hungarians, Slovaks, Bulgarians, Yugoslavians and Poles – 653, Englishmen – 24, and representatives of other nationalities, – totally 2085 foreign people worked in Russia.[13]

From 1934, the number of foreign specialists in the Urals began to decline. The construction of many large enterprises had been completed by that time; the purchases of foreign technology were no longer necessary, the skill of Soviet industrial personnel had risen to a sufficiently high level. By that time, Soviet specialists were already reporting the first results of constructing industrial enterprises made of precast reinforced concrete (fig. 2.16).

Whilst the development of efficient technological schemes and methods of construction were, certainly, vital tasks in designing industrial enterprises, development engineers did not forget about the architectural image of such plants. In many respects, the development of industrial architecture followed trends in civil architecture. It goes without saying that in many respects, the first plants and factories became avant-garde models. This was particularly the case because, in industrial construction, the principles of modern architecture looked even more organic than in civil construction. This is how the image of industrial architecture was perceived at the beginning of the 1930s:

"A clear general outline that was characteristic of workers' settlements, too; a large glazed surface of shops that sometimes enclosed a whole building with a continuous horizontal window; the latest types of overhead lighting; a wide use of new constructions and materials; an immense scale and a monumental nature of buildings and industrial facilities [...] – all these give us an architectural profile of the giants of socialist industry to be retained in one's memory."[14]

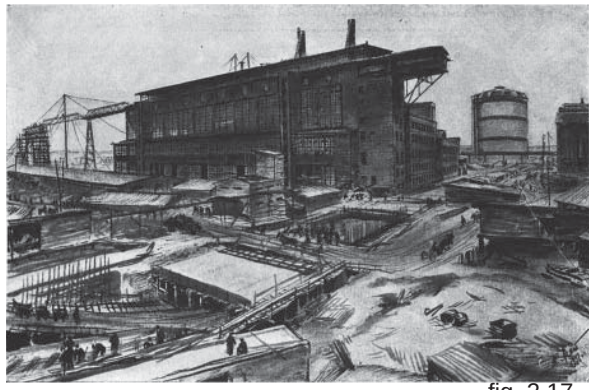


fig. 2.17

Such was the avant-garde trend that well-known Soviet architects followed in their work, creating their first projects for Ural industry. The graphic compositions by Ya. Chernikov from the cycle "The Architecture of Industry" are reminiscent of his projects for chemical and metal-working enterprises in Perm, Berezniki (fig. 2.17), and Kamensk-Uralsky. In 1930, L. Rudnev designed the building of a high-voltage laboratory for Uralelmashstroi in Sverdlovsk of steel, glass and concrete (fig. 2.18). The construction of the Chelyabinsk tractor plant administration (1930) under the project by A. Burov and G. Kirillov is designed in the same style (fig. 2.19). In spite of the fact that those masters began to change their creative views at that time, and began to design in the style of socialist realism, they were apparently aware of the expediency, and advantage of modernism to industry. In other words, modernism in the sphere of industrial architecture proved to be more stable than in other branches. This can be seen in the following temporal and stylistic period.

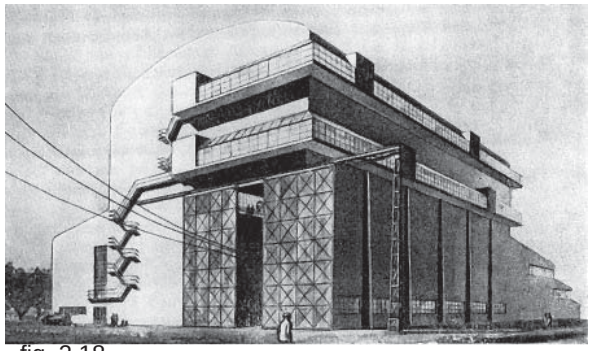


fig. 2.18

During the second five-year plan, the structure of architectural design was reorganised with the aim of achieving centralised management. Highly specialised design groups were united to form newly established state design trusts of the People's Commissariate of Heavy Industry of the USSR. Among them was the Gosproektstroi that was included into the Promstroiproekt trust in 1933.

From that time, the state design Institute of *Promstroiproekt* occupied the leading place in industrial design. Being located in Moscow, the Institute had its branches in Irkutsk, Novosibirsk, Rostov, Sverdlovsk and Tolyatti. Its main task was to develop the construction activities of projects for industrial buildings intended for ferrous and nonferrous metallurgy, chemical and automobile industries and other sectors of national economy.

Among those who worked in the Sverdlovsk branch of the Promsrtroiproekt were the architects P. Volodin, P. Buklovsky, Ye. Korotkov and Razumovsky, they also designed the objects of civil architecture in the Urals.

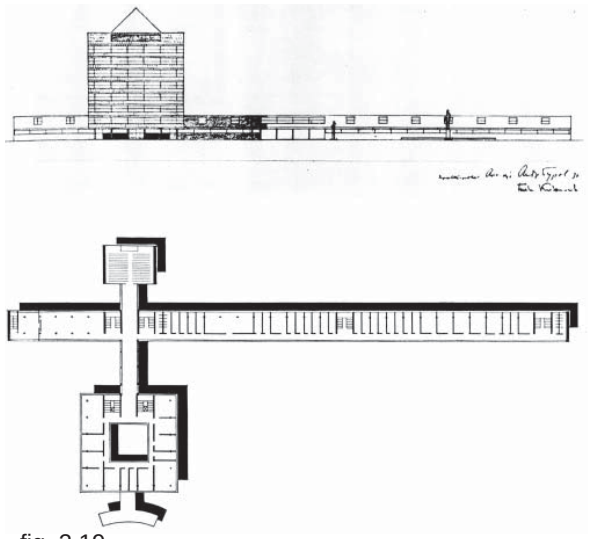


fig. 2.19

Performing numerous tasks of the second five-year plan, the architects of the Promstroiproekt continued to develop modern principles in the design of industrial enterprises. Due attention was paid to the clear ecological zoning of industrial territories, their interrelation with the systems of transport and cultural-and-customer service; to the improvement of territory, planting trees and bushes, and establishment of the system of administrative and customer-service complexes. In the meantime, the architects continued their search for an architectural image for industrial constructions.

Publications on that subject in the journal *Opyt Stroiki* for 1934-35 illustrate the dilemma that industrial architects faced. The functional method had already been unmasked and denounced, but the decorative style that was offered instead, seemed even less appropriate. Here follows a self-critical story about the first experience of the establishment of a whole architectural complex – the Zlatoust metallurgical plant (fig. 2.20):

"Two lines faced each other in the development of the general layout: a particularly functional one – in general planning and planning industrial shops, and a crudely formalistic one – with regard to architectural design; by the way, they were developed at different times. Wrong directions and methods of work led to a contradictory solution. The ornate form of squares and public gardens stresses the poorness and lack of ideals in the design of shops, and lack of their spatial coordination."[15]

The orientation of Soviet architects towards classical traditions did not result in outstanding works in the industrial architecture of the Urals. In spite of the condemnation of a "simplifying" approach, it was this approach that continued to determine the appearance of plant buildings. Probably, it was the great distance of the Ural region from the centre that played its role, but architects still considered the functional approach to be the most logical. Even a year later, the disgraced method of design was openly used in the Promstroiproekt

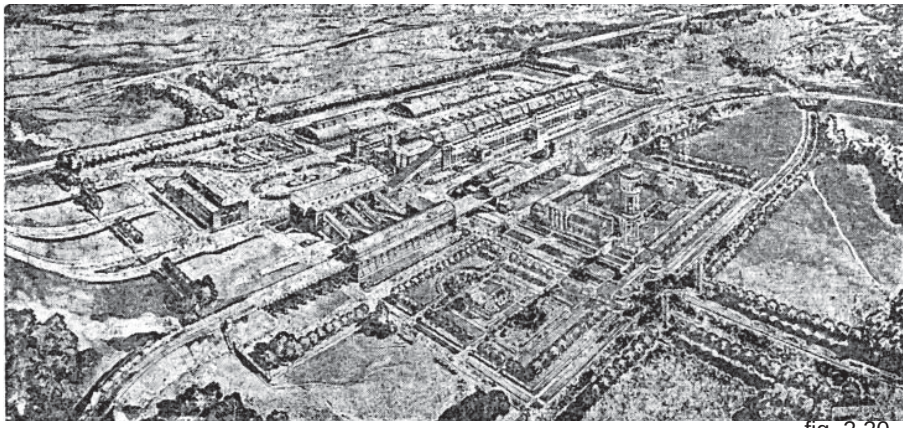


fig. 2.20

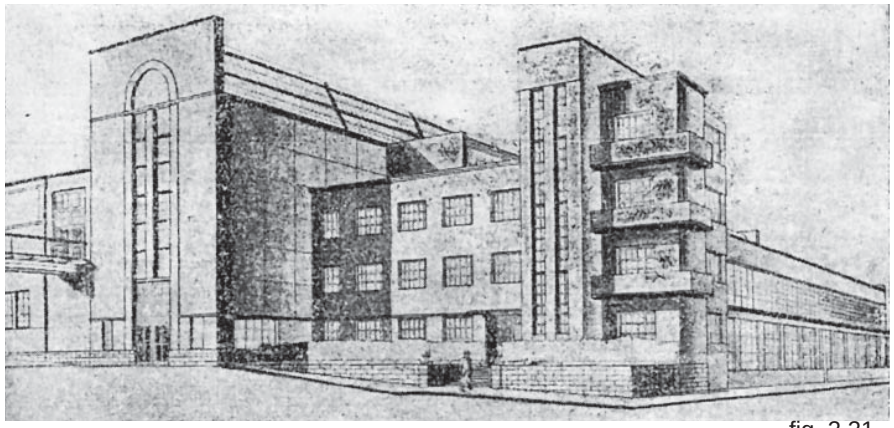


fig. 2.21

(fig. 2.21):

"A considerable height of structures, large volumes and masses, and their complicated relief allow the designer-constructor to use all the range of architectural means in order to add more expressiveness to the building. Form should be tense, but here, it is important not to overdo it, for the dynamics of form results from technology."[16]

The socialist-realism aesthetics could never find their way to the industrial site; they limited themselves to groups of administrative buildings. In the same year 1935, the administrative buildings of plants acquire a grand appearance: they have facades of natural stone and are decorated with sculptures and bas-reliefs. The administrative complexes of plants were built in the above-mentioned style up to the end of the socialist realism period.

Construction of Cities

Even before the period of industrialisation, in the first years of Soviet Power, the first efforts to realise new ideas in town-planning were undertaken in the Urals. In that period, the above-mentioned garden city by Howard was the most popular and was a practically realisable idea. As there were no plans to build new towns at that time, the first garden cities can be found only in the existing cities, such as Izhevsk, Orenburg and others.

The peak of city building in the Urals occurred during the period of the first and second five-year plans, which is quite logical: a high degree of industrialisation in the Urals resulted in a quick rise in city population. In the period of industrialisation, the main funds were allocated to industrial construction, but work on civil and housing construction could not be left without attention either.

At the June Plenum of 1931, the TsK VKP(b) – summed up the results of the discussion on what kind of city the Soviet country should have. The main aspects of town-planning were: planned development of populated areas, a restriction on the excessive growth of cities; construction of cities on the basis of the right combination of production and hygienic requirements, and the subordination of construction to a single architectural ideal.

On the basis of the decisions of the Plenum, the *Uraloblispolkom* (Ural Oblast Executive Committee) disseminated a document called "The Most Important Features of the Industrial City in the Urals" as an official directive. This document became the first effort in Russia to the regulate planning and building of cities with the consideration of the principles put forward by the Programme of the VKP(b), and also local conditions.

It directed the choice of optimum conditions for locating both industry and settlements or cities.

City structure was divided into four parts: an industrial zone; a territory for residential buidings

and the structures for cultural-and customer service; zones of plantations of trees and shrubs, and communications, rails and roads.

- Industrial zone is under the authority of the industrial enterprises; it exclusively adheres to the requirements for developing plant technology.
- Built-up territory is where the groups of housing complexes would be constructed. At that time, a task was set to provide each member of the family with an individual room. According to the instruction, every group of residential buildings had to include premises for public amenities- a club with included rooms for rest, reading, and entertainment.
- Individual groups of residential buildings had to be separated from each other with large green areas to enrich cities with clean, healthy air.
- Main roads were divided into two categories: the first category was intended for the transportation of a great number of goods and passengers; the second – for pedestrians and passenger cars. It was recommended to have trees and shrubs in the streets.[17]

The directive also dealt with the issue of engineering development in the territory; public utilities; perspective norms of living area, and the consumption of water and electricity.

A number of design institutes were established to design general layouts of cities and workers' settlements, and to develop design plans and specifications for the new construction works of the first five-year plans. The *Standartgorproekt* trust was one of the first organisations of that kind. It was there that groups of foreign specialists worked: the group of Ernst May and the team of Bauhaus, headed by Hannes Meyer. The Giprogor institute played a great role in the realisation of the town-planning programme. Among the organisers of the Institute were the most significant domestic scientists and practitioners working in the sphere of planning and building up cities, such as V. Semyonov, L. Ilyin, G. Sheleikhovsky, S. Ovsyannikov, V. Vitman and others. Under their guidance, a galaxy of the following talented town-planners worked: A. Galaktionov, V. Baburov, N. Baranov, the group of M. Ginzburg, and many others. Later, in 1935, one more important organisation was formed: the *Goprstroiproekt* trust.

The first five-year plan of town-planning was marked by the innovative ideas and theories of avant-garde. The projects of Greater cities and industrial centres were designed by establishing satellite-cities, as, for example, H. Meyer did in the project of Nizhne-Kuryinsk.

Sotsgorod became the main element of settling in the system of the city. A Ural sotsgorod is characterised by a compact and regular planning structure; its main streets are orientated to the territory in front of a plant where the main public and administrative buildings are concentrated. A linear sotsgorod is a less spread out design (for example, ChGRES-1 and the settlement of the Electric and Iron-and-Steel industrial complex in the city of Chelyabinsk).

The idea of a garden city still existed among architects, but by the beginning of the 1930s, it had become less popular than sotsgorod. In that period, only a few low-storeyed "bedroom" settlements with different types of houses and adjoining garden plots were built in the Urals. Those settlements were designed for the most high-ranking persons working in the construction industry, an example of which is the settlement for the administrative-and-technical personnel of the Bakal industrial complex.

The comb housing system was widely used for the arrangement of the new groups of buildings in the city. In fact, we can see the examples of it in any Ural city that was built in that period. Another wide-spread method of organisation of a block

fig. 2.22

was the *monumental method* – construction on a grand scale. The monumental method, in view of its high cost, was exclusively used for the living structures of the "elite", such as the Emergency Commission Living Quarters – *Gorodok Chekistov* – in the city of Sverdlovsk, and the Living Quarters (*Gorodok*) of the People's Commissariat for Internal Affairs – the NNKVD – in the city of Chelyabinsk.

When historical cities were reconstructed, the existing planning structure was mainly retained. Regular plans of the XX century did not contradict the principles of new town-planning, that is why they formed an organic part of the projects for reconstruction. The construction of sotsgorods was primarily carried out in free territories. The reconstruction of the existing parts of cities was aimed at a certain rational ordering of the small groups of buildings, and at developing the main transport thoroughfares. The architectural-and-spatial structure of old cities underwent more serious changes. A great number of religious structures that had determined the outline of those cities before the revolution were demolished. The ratio between rank-and-file building and the new large-scale complexes also changed.

General plans were also designed for the cities, where industrial construction was not planned. However, as distinct from industrial centres, plans for those cities took into consideration their compact, nuclear form. Their architectural-and-planning structure was ordered according to the new principles: functional zoning of the territory; formation of living districts with their own centres of service; enlarging groups of residential buildings, introducing the system of cultural-and-customer service into them; and laying out parks and public gardens in the centre and in the periphery.

There were also interstitial cases. For example, the layout of Nadezhdinsk combines the features of both the above models. Being founded as an industrial centre at the end of the XIX century, Nadezhdinsk originally had a regular layout. In 1932 the new general plan was presented. It was compact in form, had an open rectangular-and-lattice layout with residential blocks arranged in a comb structure (fig. 2.22).[18]

In the process of town-planning, the planners of

Ural cities paid a great attention to the issue of making the living environment healthier. Buffer and recreation zones were laid down, with stadiums, public gardens, boulevards, parks of "culture and rest" and gardens. In certain cases, planning became a part of the natural landscape. That was how the project of OSA for the Chernikovsky industrial centre was made. H. Meyer also used *Landstraße* in his project for Greater Perm.

In spite of a great number of progressive ideas, the real town-planning situation was far from being as beautiful as it looked on paper. Decision made did not prove to be practical even at the stage of designing cities. As often as not, the initial plans based on the real towns' situation were changed due to the priority of industrial construction and lack of funds for social-and-cultural facilities. It led to town-planning mistakes and economic losses.

When making plans for national economic development both for the First and the second five-year plans, the Central Planning Commission spoke about the importance of a simultaneous planning of industrial enterprises and housing estates.[19] Still, the aim for accelerated industrialisation introduced amendments into those plans. The best personnel and funds were allocated to the establishment of heavy industry, and housing construction and public utilities were financed on the basis of the "residual" principal. Allocating territory for a plant before having an approved general layout of a city became common practice:

"The conclusions are as follows: the organisation of planning should be considerably improved. We should shorten the time between planning and the beginning of works as much as possible. We should give up the prevailing opinion that it is impossible to construct without the finalised layouts or even without working drawings."[20]

The violation of zoning principles made it difficult either to construct all-embracing complexes of cities or to establish transport and engineering systems. That was the case with practically all the industrial centres, especially Magnitogorsk, Nizhny Tagil and Chelyabinsk.
However, it was housing construction that suffered most of all under the conditions. From the very beginning of the reconstruction period, an acute shortage of housing developed in the Urals. The public health requirements of that time – 8 square metres per person – was not observed in the region. In 1927, there were 4.8 square metres per one person living in the Urals; in Zlatoust, Lysva and in Perm – 3.6 square metres, whereas in the USSR, the average figure was 5.9 m^2.[21] The situation became even more strained when industrial enterprises began to be built. The Magnitka and the Berezniky Chemical Plants were built in unpopulated areas, and in large cities, the shortage of housing was aggravated by such large-scale construction projects as the "Chelyabtracstroi", "Uralvagonstroi" and "Uralmashstroi." By 1932, in large cities, there were on average 3m^2 of living area per person.[22] Housing facilities of large cities mainly represented private wooden houses without modern conveniences. The crisis of housing restrained the development of industrialisation even though it had a priority before city building. Thus, the vicious circle was closed.

Trying to ease the crisis situation, Uraloblispolkom established specialised construction organisations in the Urals; they were founded on machinery and permanent personnel. Thus, in 1930, the "Uralzhilstroi" trust was established as part of the "Stroyindustriya"; it had its branches in the cities of Zlatoust, Perm, Chelyabinsk, Lysva, Nizhny Tagil, Nadezhdinsk and Solikamsk.
Large-scale construction works also resulted in another problem: shortage of building materials.

The establishment of enterprises producing such materials in the Urals enabled a partial solution of this problem. Nevertheless, the development of a construction industry failed to provide all the Ural construction sites with the necessary materials. The establishment of subsidiary enterprises attached to the trusts of city construction proved to be more efficient.

The most suitable approach to the problem involved research into the substitution of brought-in materials that were in short supply by local ones proved to be. The Ural scientific-research laboratories played a great role in this discovery and introduction of local materials. In the experimental construction laboratory of the "Uralmashstroi, the non-concrete stone "Krestyanin" (peasant) and thermolith were first made; they successfully substituted bricks. In Solikamk, experiments on producing concrete from clunch that substituted Portland cement were made. The plant producing natural cement was founded. In Kamensk, the successful tests of adobe bricks, cane-fibre board and lathing were carried out, which allowed saving bricks and tar roofing.

To accelerate town-planning, work on the improvement of labour organisation was also carried out. The latest methods of work began to be used in city construction. In 1930, at the "Chelyabtracstroi", an American method was applied – different types of work were carried out simultaneously – the work was done in "waves".[23] In 1931, in the city of Magnitogorsk, the TsIT team set up a world record for the most efficient method of laying bricks. Its essence was as follows: all the elements of unskilled labour were excluded from the work of the bricklayer. In 1930, the "Uralmashstroi", developed an experimental method for stone and brickwork during the severe Russian winter using heated enclosures.[24] In the same place, they organised start-to-finish teams on stuccoing works, and introduced *paired* masonry. The same method was practiced in the "Zlatouststroi".[25]

The mechanisation of construction works undoubtedly contributed to the acceleration of housing construction. At the beginning of the first five-year plan, there was practically no technology in housing construction. A spade, a hammer-pick and a trowel were the main tools used. A wall-mounted derrick crane with a hand-power winch, a wheel-barrow and a horse-driven vehicle were the main means of transportation. By 1931, gravel-washers, stone-breakers, tie saws and conveyer-loaders could be found on the construction sites of large cities. The engineers and specialists of construction sites proposed the improvement of available mechanisms and of manufacturing methods. Thus, the engineer Lebedev proposed substituting wall-mounted derrick cranes with non-revolving cranes.[26] Conveyer-belts began to be used to bring building materials to a construction site. The technology of industrial construction began to be gradually used in town-planning. By the end of the 1930s, there were already mortar mixers, concrete mixers and hoisters on construction sites.

During the first five-year plans, the method of prefabricated house construction became one of the aspects of housing reconstruction. In 1931, the wood-working plants in Perm, Tavda, Lyalya and other towns began to manufacture these standardised structures and parts for houses and barracks. The Ural Institute of Constructions developed a new type of a large-framed residential building – UralVIS 13, built of factory-made elements.[27] That project considerably reduced the consumption of material, the number of building workers and the time involved in constructing residential buildings; it was recognised as the "most efficient method that satisfied industrial requirements in the best way possible ". At the *Uralmashstroi*, a building yard for manufacturing standardised elements of buildings was also organised: for the first time in the Urals, standardised manufacturing of houses of a lighter type

began.

Construction of large prefabricated blocks was one more attempt to achieve efficiency in house-building. In the Soviet Union, the first large construction made of prefabricated blocks emerged in 1928 (the House of Militia in the Tverskaya-Yamskay street). In the Urals, the first experiments with large blocks were carried out in 1929-30. At that time, in Sverdlovsk, the Ural Institute of Constructions established a small factory where parts of an experimental residential building could be manufactured. Those were hot-concrete blocks and reinforced concrete internal elements. The residential building was assembled under severe winter conditions. In 1931, two prefabricated buildings were built in Chelyabinsk. Similar houses were also constructed in Magnitogorsk and Nizhny Tagil. However, that experience was not widely disseminated in the region during the first five-year plans due to an acute deficit of bonding materials and metal.

Great hopes were placed on industrialised housing construction, but by 1931 its share in the total amount of construction in the Urals was only 8-10%.[28]

During the second and third five-year plans, the issue of the nature and quality of town-planning was raised again. This was, undoubtedly, due to the change in aesthetic trends and, hence, the denial of avant-garde ideas in architecture and construction. In the Urals, the change took place after a great delay, but by the mid-1930s, the influence of socialist realism could already be clearly seen in the layout of the Ural cities.

The city with a group dispersed architecture was renounced as being "inadequate". According to the ensemble principle – a newly introduced order in the Soviet city construction – the satellite and linear planning systems had to be brought to a compact integrity.

"The projects of our major cities – Magnitogorsk, Stalinsk, Nizhny Tagil and others – that are carried out at present, clearly show that they were planned by the method of separate designing of layouts and architecture. Invariably, only the realisation of the main tasks for the given project of the city is considered as the main criterion of the project, the main tasks being mutual arrangement of territories; distributing the required number of people; providing for a transportation system and cultural-and-customer service. As for the issue of how the planned city will look in reality, and whether it would it be possible to create interesting architectural ensembles on the basis of such planning, it is not paid sufficient attention when the project is evaluated.[29]

Considering the fact that the majority of Ural cities had a dispersed structure, it was impossible to directly apply the ensemble principle to them. That is why, two methods of the ensemble reorganisation of the city had been developed: city as a system of ensembles – for a city with a group structure (Sverdlovsk, Chelyabinsk) or a linear structure (Perm, Orsk, Mednogorsk); and ensemble-city – for cities with a compact, nuclear structure (Berezniki, Orenburg).

In the same period, less attention was paid to regional planning. The general layouts of the second half of the 1930s had as their basis the type of settling which was characteristic of "Greater cities" (larger municipalities). Planning was carried out on the level of city and its parts. Wide thoroughfares were drawn on the general layouts intended for the reconstruction of Ural cities; planning modules were enlarged; large town-planning ensembles were laid down.

From the middle of the 1930s, neoclassical ensembles begin to be seen on the main city prospects and in the squares; their development continued up to the end of the period of Stalin's imperial style (the 1950s). A three-ray structure; sym-

metry; a frontal building of thoroughfares with spatial emphasis on the corners; the construction of residential buildings along the perimeter of the quadrangles (blocks) of residential buildings; and construction of large-scale public complexes in the squares – such were the main compositional devices for organising city ensembles. The issues of improvement, planting trees and shrubs and a monumental-and-decorative design of city territories were resolved at the same time as construction activities; all of these were integral parts of creating a town-planning composition in the classical style. When creating ensembles, special attention was paid to the expressiveness of the city panorama. The hierarchical correlation of the main and secondary parts was achieved by lowering the scale of the building and thus retaining its stylistic unity. City ensembles created in that way were characterised by a high-flown style, solemnity, and magnificently decorated facades.

On the other hand, in the efforts to improve a town-planning composition, functional-and-planning issues were sometimes left in the background. This resulted in problems with the road-and-transport systems. Some ensemble compositions were located in the zones exposed to the harmful influence of industrial enterprises, as was the case with the Central district of Nizhny Tagil, the Uralmash and Elmash in Sverdlovsk; a tractor plant and metallurgical districts in Chelyabinsk, and with many other ensembles. On the whole, the concept of a nuclear ensemble-city did not take into consideration the issues of ecological safety. The aim of raising the quality of city construction applied to housing construction, too, but the issue of housing still remained an urgent problem.

At the beginning of the 1930s, special emphasis was placed on the construction of temporary dwellings. Thus, by 1933, in Magnitogorsk, Perm, Chelyabinsk and Sverdlovsk, living barracks constituted on average 56% of available housing. In the central press, critical articles exposing the enthusiasm for barracks construction began to be published.[30] In the same year, barrack construction was prohibited in large cities.

In 1934, the enactments of the SNK USSR "On the Improvement of Housing Construction" and "On Stopping Construction Without Design and Financial Planning" were adopted; they prohibited unauthorised development in cities. The enactments limited the practice of constructing light-weight types of residential buildings, such as frame-type houses and barracks, and ordered the building of towns with capitally constructed houses with modern conveniences.[31] With regard to the latter conditions, builders turned again to the issues of pre-fabricated industrial house-building: large-panel blocks and frame-type construction, and pre-cast reinforced concrete. The Sverdlovsk Regional Institute of Rational Construction developed the new construction technologies and materials. Its investigations proved to be very efficient in practice, but they were not widely used in the Ural region either in the second or even in the third five-year plan:

"Large-panel construction began to develop in the Urals and Ukraine on the basis of the use of metallurgical waste products – furnace slag. At present, however, it has also become the most widely spread method in Moscow and Leningrad, that is, where there are no raw materials. In the Urals, large-panel construction has not developed at all. This is an outrageous gap that cannot be justified in any way."[32]

In the second five-year plan, the attention of the region was concentrated on the formation of the outline of its cities. Convened in 1935 and 1936, the Oblast Conferences of architects determined a way of all-embracing city development, with improvements in their architectural appearance. The Conference did not only have in mind "elimination of the consequences of the "box-type" con-

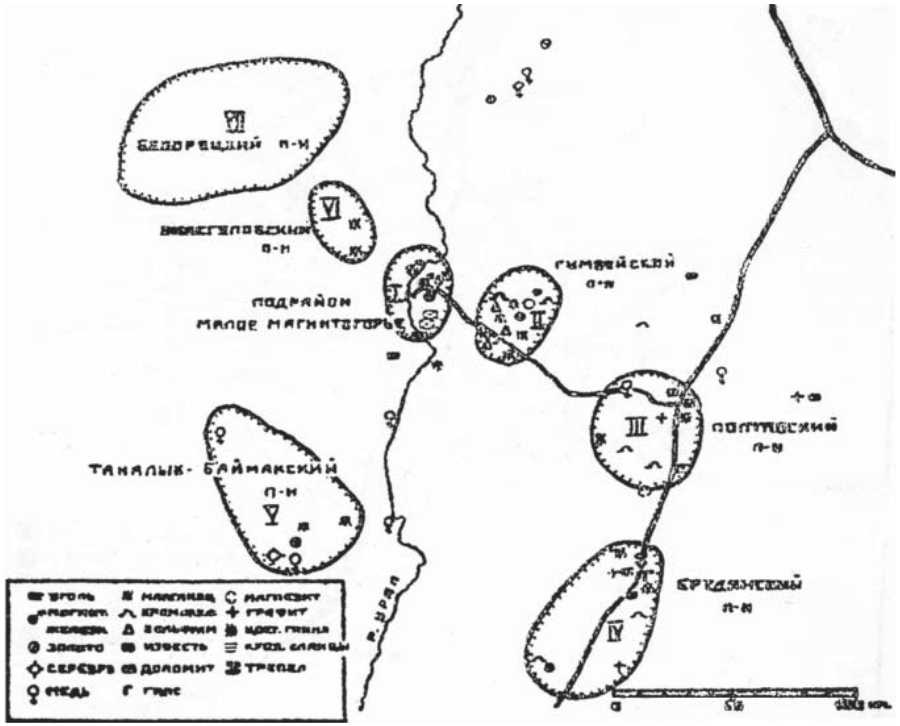
struction.” Architects had to personally control the realisation of their projects. From that moment on, the builders had to agree upon the facades of buildings with the architect. In the decoration of buildings, such local materials as marble, granite and ceramic tiles began to be widely used.

This is where we shall finish the survey part of the chapter dedicated to town-planning in the Urals and focus on its second, illustrative part.
Cities that we shall consider in the years of the first five-year plans, became the centres of industrialisation and, in their history, went through the phase of an active economic development. It is in those cities that the principles for new town-planning clearly revealed themselves at all the levels. The cities studied are considered within the system of regions and industrial centres (hubs). It will help us to look at the practical application of regional methods of planning – an important aspect of avant-garde construction that later was paid extremely little attention to by the Soviet planners – in detail.

Magnitogorsk

"The City Council of Magnitogorsk categorically objects to the delay of the topographical survey of the right and left banks, which did not give the possibility for making the choice of one or other site of a bank. [...] Moreover, on the opinion of the City Soviet, the city should be planned on the basis of the general plan of its population of 200 thousand people, and with consideration of its further growth, as this is not just a town attached to the given plant, but a large industrial, agrarian, cultural and administrative centre of a whole region and, possibly, of the Middle Urals."
M. Solomonov[33]

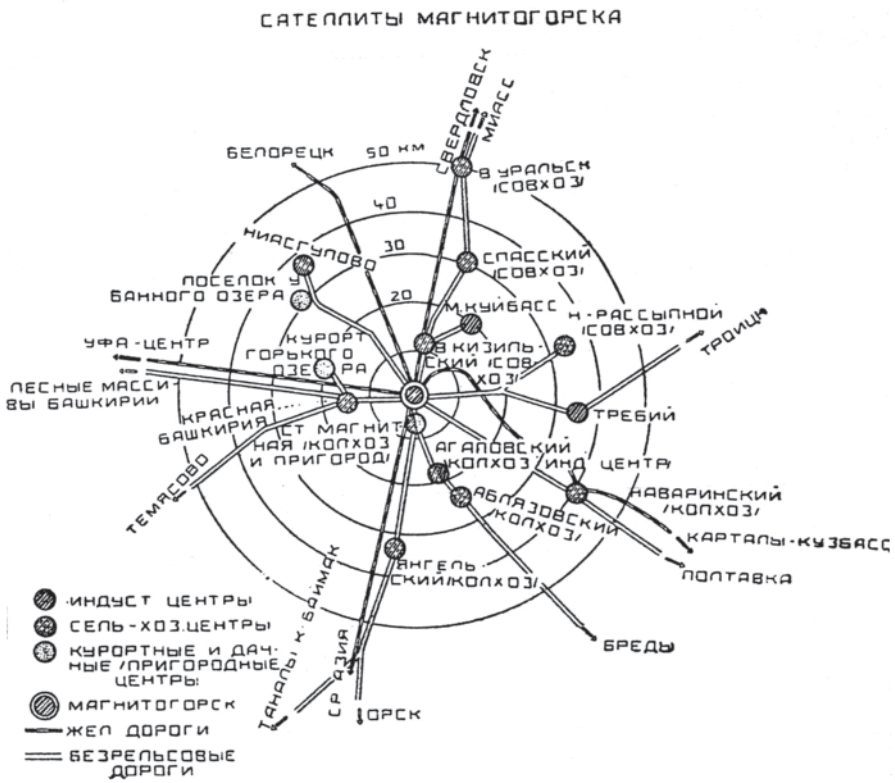
fig. 2.23



Being a leading strategic constituent of the project of the Ural-and-Kuznetsk industrial complex, Magnitogorsk rightly deserves the first place in the list of the Ural cities studied. The foundation of a city at the Magnitogorsk iron-and steel industrial complex has repeatedly been the subject of investigation by both Russian and foreign specialists,[34] that is why, there is no need to go into already widely studied facts and events, such as, the All-Soviet Union Competition for the General Layout of Magnitogorsk. Let us instead try to single out the most characteristic features and methods in the city of Magnitogorsk as the "firstling" of the new town-planning, that in future influenced the process of the design of other Ural cities.

In the first place, due to its significance, the area of Magnitogorsk became the first one for which a project of regional planning was designed in 1930 (fig. 2.23). The authors of the "Greater Magnitogorye", the planning team of the UralGEIS, cautiously characterised it as "regional rough draft."[35]
The national economic profile of the Magnitogorye had not yet been determined at that time, and the team advanced a test hypothesis: the industrial development of the region should be based on the use of natural resources and a synthesis of the industrial activities in the region and the activities of the Magnitogorsk industrial complex. The last-minute investigations showed that the radius of the area that was industrially "drawn" to Magnitogorsk was approximately 130 km. The hypothesis determined the number and profile of sub-regions that made up the "Greater Magnitogorye." Among them, the sub-region of the "Lesser Magnitogorye", with the city of Magnitogorsk itself, was the main one. That sub-region was thought

fig. 2.24



of as a gigantic centre of heavy industry with ferrous metallurgy, machine building, chemical industry and building material production. Thus, "Lesser Magnitogorye" was a federation of large and small plants that were mainly grouped around Magnitogorsk, with quarries and open pits located in its periphery (fig. 2.24).

The rest of the six sub-regions within "Greater Magnitogorye" were profiled in the same way. Sub-regions, in different combinations, constituted the main lines of the industrial activities of the region: ferrous metallurgy, mining and enrichment of non-ferrous metals (gold, silver, copper, tungsten, chromium, zinc, and manganese); coal-mining industry and construction industry.

Parallel with the marking of the sub-regions, the ways of developing an agricultural industry of the region and a network of railway and motor roads were worked out. According to the data of the hypotheses of industrial and agrarian development of the region, the following conclusion was made: the most optimum way of planning would be to build a great number of satellites around the main populated system of Magnitogorsk. Thus, in the "Lesser Magnitogorye", all the populated areas that were "drawn" to Magnitogorsk, were divided into five types: industrial, agrarian-and-industrial, agrarian; agrarian-and-summer cottage; and resort-and-summer cottage types.

A sketch of "Greater Magnitogorye" showed the actuality of the method of regional planning. In particular, it showed that even with an incomplete study of a region, it is possible to develop a preliminary outline of the regional task for the planning of the main city. This was a significant argument for the planners of that period.

Still, the history of Magnitogorsk's development represents one of the most vivid examples of how town-planning strategy did not correspond to real conditions and rhythm of industrial construction.

The design of the Magnitogorsk plant started in May of 1925, in Sverdlovsk. S. Zelentsov headed the design group of the Sverdlovsk branch of the Gipromez. In September of 1928, after a new survey, the Geological Committee of the USSR confirmed that the supply of ore in the Magnitnaya Mountain was 250 mill. tons. Later, with more accurate calculations, it turned out to be 400 million tons. On the 17th of January 1929, at a joint meeting, the Sovnarkom of the USSR and STO made

a decision about the beginning of the construction of the Magnitogorsk metallurgical works. At the end of January, the Magnitostroi was established, and S. Zelentsov became its leader.
By that time, the issue of the choice of a city site and designing its general layout was raised. Between the 1929 and 1930, the Administration of the Magnitostroi organised an All-Soviet Union competition for the best plan of the city of Magnitogorsk. Sixteen projects were submitted to the competition, but neither of them, as is known, was adopted, because all of them lacked any contact with reality. We shall not review all the competitive projects; we shall consider only three of them, the most outstanding; the two projects of the OSA members and the project by Milyutin which determined the main trends of socialist town-planning of that period.

The project of the area of the Magnitogorye, offered by M. Barsch and his colleagues, demonstrated the main principles of the new settling theory by Okhitovich (fig. 2.25).[36] The settling was planned along thoroughfares that connected important sites, industrial and agricultural centres. Nine "strips of settling" represented the lines of individual housing "cells" that were stretched along a motorway. These were facilities for cultural and customer services, situated on every kilometre which were marked by stops. Recreation facilities and agricultural lands were located behind the populated area.


fig. 2.25

A team of the VkHUTEMAS students, graduating under the supervision of I. Leonidov,[37] recommended a settling strip for Magnitogorsk – a structure that was already known at that time(fig. 2.26). In this project, Leonidov tried to combine the advantages of the urban city, sotsgorod and the linear city. From the desurbanists, OSA took a built-up strip of 25 km, stretched from the integrated chemical-and-metallurgical works to a giant-*sovkhoz* (a Soviet state farm); public and recreational zones were located on both sides of the houses there, and roads were brought out to the periphery (in the project designed by the group of Barsch, the road was an axial element).

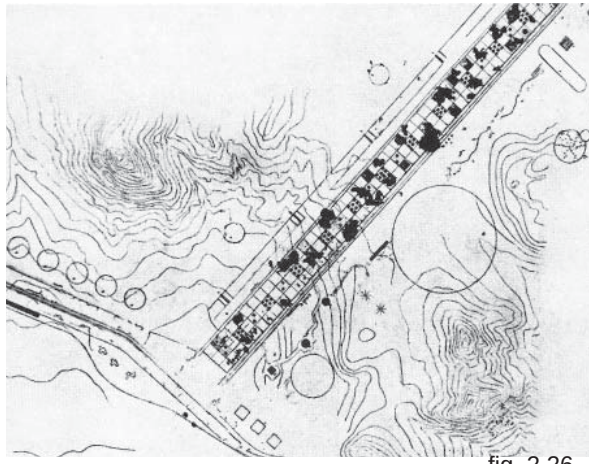


fig. 2.26

Leonidov's concept of housing combined the development typical of sotsgorod with the elements of urbanism. Housing complexes for 250 people, each sub-divided into 8 units for 32 people, were blocked in a chessboard fashion and alternated with high-rise residential buildings grouped in pairs. Among the groups of residential buildings, in green buffer zones, the facilities for the children's sector were situated. Public and cultural buildings and the recreational components were distributed on both sides of the housing over the whole length of the city.
N. Milyutin demonstrated his linear, functional-assembly line in action, having used it for Magni-

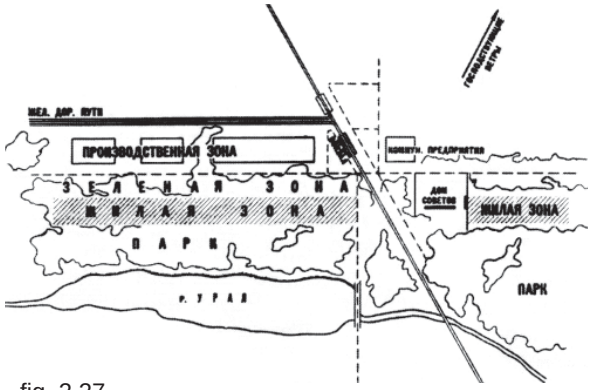


fig. 2.27

togorsk (fig. 2.27). His project was characterised by clear and functional zoning; it was possible to develop zones both sides, without distorting the balance of their mutual relationships. However, for Magnitogorsk, the functional-assembly line did not prove to be the best possible structure. The linear system dictated the location of industrial shops one after another, which only partially met the requirements of the technological processes of this large industrial complex.

Both projects of the OSA group fit well in to the natural environment. However, their linear settlements could develop only in one direction, which, considering the single-site location of the industrial complex, would result in the gradual distancing of the new groups of residential dwellings from the place of work. All three projects failed to take into account the prevailing northern, north-eastern and south-western winds, as a result, the living zone was exposed to the harmful effluents of the metallurgical plant. It also happened in the project by Leonidov, but to a lesser degree.

It is also typical that all the projects submitted to the competition proceeded by laying out the city on the left bank of the reservoir. From the economic point of view, that version was the best possible solution. However, in all other town-planning aspects, the construction of the city on the right bank had obvious advantages. The designing of Magnitogorsk was accompanied by heated discussions about the location of the city site.

The above-mentioned team of UralGEIS (the project for "Greater Magnitogorye") also paid attention to the choice of location for Magnitogorsk with regard to its industry. According to the results of their research, the city had to be situated on the right bank. The planners picked out the main negative aspects of the left-bank location of the city: the ecological disadvantage of the place; its long distance from the water; the difficulties in the development of the residential territory; and the impracticality of railway use among other factors.

In an attempt to solve this issue, a Commission led by the architect S. Chernyshev went to Magnitogorsk in the same year. Ernst My was also a member of this Commission. Having familiarised themselves with local conditions, the Commission supported the right-bank location of the residential areas. However, by that time, the city had already been officially laid down on the left bank. By 1931, more than 100 thousand people lived in a tent settlement on the left bank. As a result, the state Commission of the Sovnarkom of the USSR rejected the recommendation of the architects' commission, but, in considering future prospects of city development, it approved of the investigation of the right-bank version of construction. The hesitations of the authorities on this issue continued in the same way for more than four years. During that time, the May's team was charged with the development of the general layout of Magnitogorsk.

In 1933, May's team submitted the project for locating Magnitogorsk on the left bank, as the state Commission had recommended at the time. The idea of Mart Stam's sotsgorod for 40-50 thousand people, situated at the metallurgical industrial complex, which had been proposed by Stam as far back as 1931, was taken as the basis for the project (fig. 2.28). Stam's sotsgorod created a good impression on his colleagues as the most well thought out; it demonstrated a "delicate" approach to the technical and economic possibilities of the country. That is why, after a number of additional changes, Stam's draft layout of Stam became the project for an entire city.

fig. 2.28

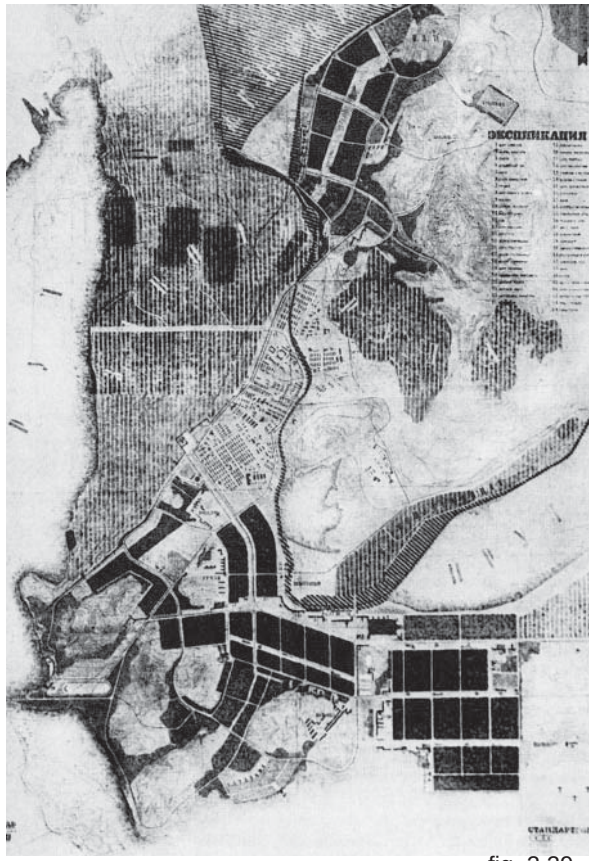


fig. 2.29

Under the terms of the project by May's team, the city of 200 thousand people was to be located between the site of the metallurgical industrial complex and the mines, on a narrow 17 km strip(fig. 2.29). The city was divided into two parts: a sotsgorod in the south, and a "satellite" in the north. It was proposed that 154 thousand people would live in the sotsgorod, and the remaining 46 thousand – in the satellite. In the northern part, they planned to have a park, a sports centre, a market-place, a hospital and a cemetery. Between the two parts, an earlier row of residential barracks remained temporarily; their demolition was planned for 1942. It is also of interest to note that the northern satellite absorbed the existing settlement of Berezki, which was built at the beginning of the 1930s for foreign specialists. The settlement was a model of a garden-city; it consisted of cottages of different types with garden plots attached to them; houses were situated in a linear fashion on the sides of the main road that led to a big garden.

Each block in the city represented a complete complex that had the system of social-and-cultural and customer services, including kindergartens, nurseries, canteens, clubs, department stores, bath-houses, laundries, etc. Residential blocks were laid out according to the comb system (fig.

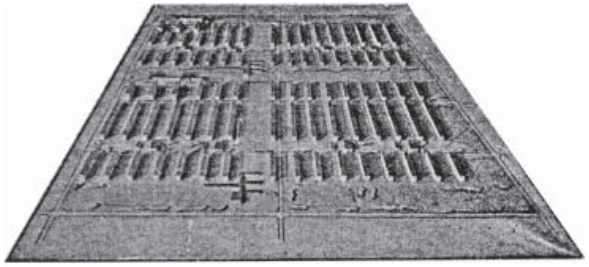


fig. 2.30

2.30). Each block consisted of three parts: in the two side parts the majority of dwellings were concentrated; in the central part dwellings were interchanged by green schools and services. The size of populated areas was to be determined by the number of families who would live there; populated areas alternated with green zones. All the residential buildings faced the sun. To protect the blocks against the prevailing winds, single-storeyed annexes with auxiliary premises were attached to the northern sides of the groups.

At that time, the use of the comb system of development as the main compositional device was criticized, but the authors remained true to their principles:

"When designing the general layout of the city of Magnitogorsk, we tried not to fall into eclecticism or a romantic development of motifs; using the means that had been justified by practice, we tried to achieve a clear and not too monotonous arrangement of the residential blocks."[38]

A tram route that connected the satellite with the main city, had to be laid out for the population of the northern district because it was at a distance of 8 km from the cultural and customer-service facilities of the city.

The residential area was designed closer to the places of work: the fourth part of the population lived within walking distance of the production facilities. The city was connected to the populated areas of the right bank of the Ural River by a main road that went over a bridge.

The project had no sanitary zone between the residential and the industrial zones; the ecological indicators of the territory were not healthy. As a result, the scientific-and-technological Soviet only approved of the construction of two blocks: one group – following May and Stam's project, and another – following the project by the architects P. Blokhin and A. Natalchenko. When these blocks were constructed, the people immediately found themselves in an area of ecological crisis, as the researches had predicted. The situation remained the same up the present time. Having permitted the construction of the first part of the city on the left bank, in the same year 1933, the Sovnarkom made its final decision to transfer construction activities to the right bank of the river Ural.

Just one year later, the first version of the right-bank city of Magnitogorsk was submitted; it was developed by the group of the Leningrad branch of Gorstroiproekt under the leadership of B. Danchich.[39] The project marked anew the borders and the direction of development for the region of Magnitogorye. The experience of the research carried out by the UralGEIS team was taken into account, and new information was added to it.

The general layout of the right-bank territory, unlike the dispersed residential areas on the left bank, represented a nuclear city with a population of 225 thousand people (fig. 2.31). It was located on the bank of a reservoir, along which a park had to be laid out. Four monumental bridges connected the right bank with the left bank where the industrial complex had been located. The right-bank city was characterised by clear functional zoning. The industrial zone, adjoining the communal-and-storage one, was to the north of the residential area. The city territory was shaped like an irregular polygon and was limited by natural borders. A forest-park zone that surrounded the city from the north, west and south, was a natural protection against the strong prevailing winds that carried harmful industrial effluents. The city garden was arranged approximately in the geometrical centre of the city territory.

Right-bank Magnitogorsk was divided into four administrative-and-customer-service territories:

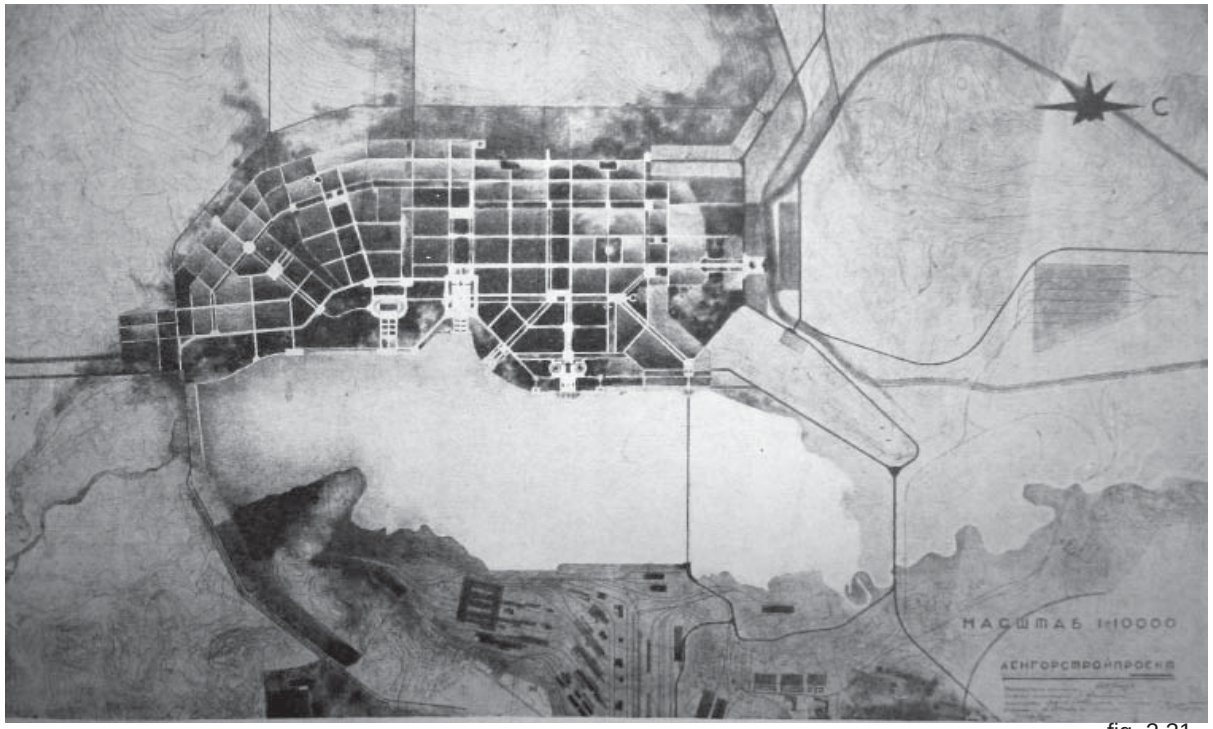


fig. 2.31

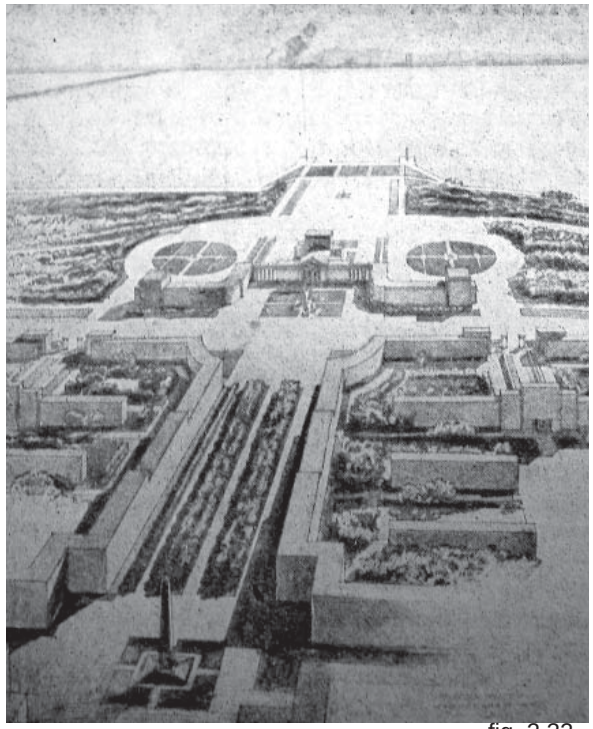


fig. 2.32

central, north-east, north-west and south ones, each having 50 thousand people. In the city, accordingly, five large squares were laid down: one central square and four regional squares. The area around the central square was supposed to be occupied with the main administrative and public buildings. Here, the City theatre, the House of Soviets, the House of Defense, the Central Museum, a library, and so on, were laid down. A grand descent in the form of granite terraces was planned from the central square to the embankment of the reservoir. The streets were mainly organised into a rectangular system with latitude-and-longitude orientation, parallel with or perpendicular to the bank of the reservoir and crossing-dams.

It is characteristic that in spite of the general trend of the project in using the ensemble style and methods, the group of Danchich did not ignore the practicality of the functional method. The construction of residential blocks was planned both along the perimeter and also according to a comb system (fig. 2.32). The authors of the project had the same views on the choice of the architectural appearance of the city:

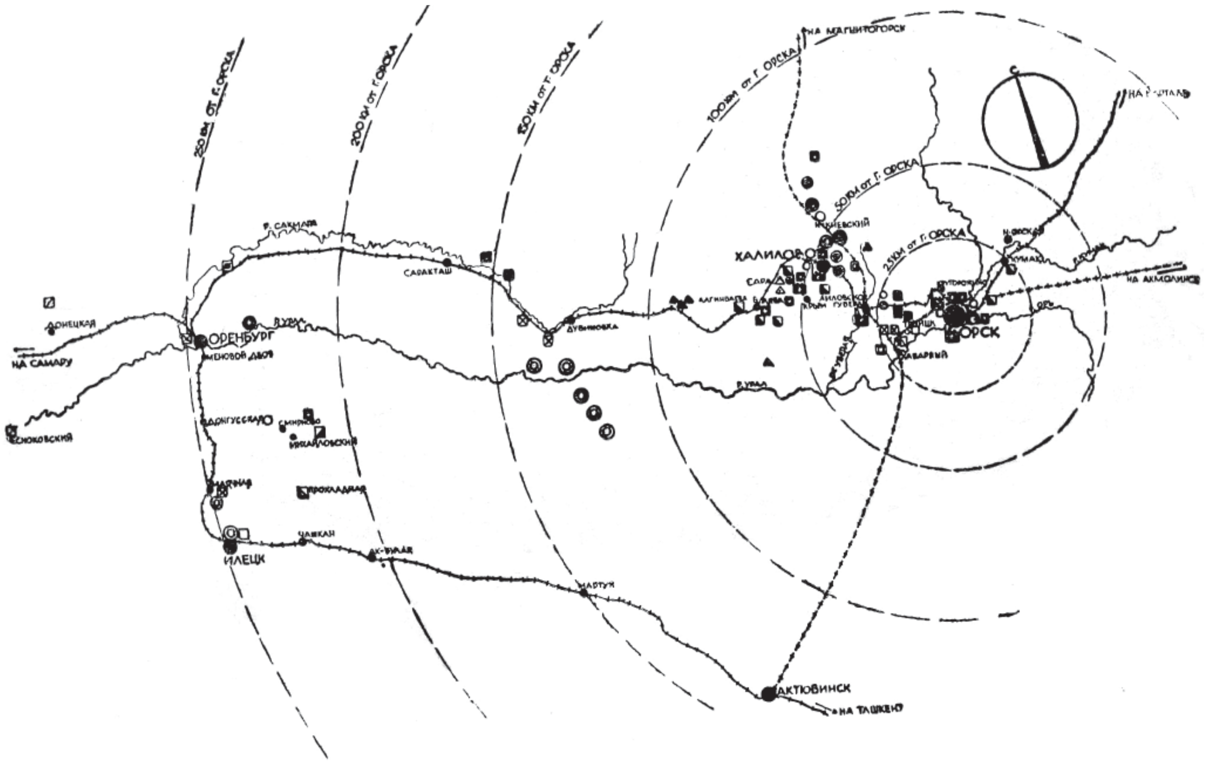
"Architecture of the city as such is the task of the next stage of the project. Here we can only outline the main line of its development, the right one from our point of view: in no way neglecting the huge achievements that the functional architecture of the past decade has given us, mainly in planning, but categorically denying its poor form, we imagine the architecture of the nearest future as the one developed with the equality of the social order and the content on the basis of modern technology of town-planning, and its form enriched with classical examples derived from the treasury created by the ages of culture."[40]

fig. 2.33

In the project of right-bank Magnitogorsk, one of the first efforts to create micro-districts with a complex system of servicing was made. Schools and children's institutions, hospitals and outpatient clinics, clubs and other elements of servicing were united in one place to service a special group of blocks (fig. 2.33).

Planning of right-bank Magnitogorsk continued up to 1940. As the general plan had been only approved of just before the outbreak of war, its realisation was postponed. Only in 1946 did they begin to realise the plan, and it coincided with the beginning of the next phase of the establishment of Magnitogorsk.

fig. 2.34



Orsk-and-Khalilovsky Region

"The Orsk-and-Khalilovsky Industrial region is the central part of the coal-bearing layer stretched from north to south, from the Poltava-Brednikovsky region to Berchogur."
N. Yefremov[41]

The results of the extensive geological prospecting showed that the Orsk-and-Khalilovsky Region had a supply of natural resources that was unique in the country. Eight deposits of brown iron ore and the supply of iron ore of 400 mill. tons were discovered in the region. The depths of the Orsk-and-Khalilovsky region also proved to be rich in non-metal raw materials: lime-stone, magnesite, granite, marble, jasper and other minerals. Considering all those factors, the Orsk-and-Khalilovsky industrial region was profiled as a large metallurgical centre that had all the prerequisites for the development of a machine-building industry.

At the beginning of the 1930s, the Narcomtyazhprom started the regional planning of that "promising" site. Specialists from the Promstroiproect worked on the regional planning (fig. 2.34).[42] At the beginning, the task was to plan only the Orsk industrial centre (hub), where, near a railway, and the rivers Ural and Orsk, a group of enterprises emerged: a locomotive plant, a meat-preserving factory, a thermoelectric plant and an oil refinery. Further on, when the newly-discovered natural resources began to be used, a number of industrial areas emerged: Khabarny, Giberlya, Blyava, Kuvandyk and Mednogorsk. The city of Orenburg was also included in this industrial region.
Special attention was paid to the development of the transportation hub. In the region, they planned to build the following main railways: Orsk-Aktybinsk, Orsk-Magnitnaya, and Orsk-Iletsk. At the beginning, all of the railways were supposed to cross at Orsk. However, the specialists of the Promstroiproect analysed the cargo traffic and found that the triangle made by the stat ions of Orsk-Khabarny-Guberlya would provide for a free transit without overloading the main hub.
Let us consider the three cities of the Orsk-and-Khalilovsky region that are of most interest from the point of view of avant-garde construction.

Orsk

Orsk is one of the old fortress-towns founded in 1736 at the extreme southern point of the Urals(fig. 2.35). The fortress was founded on the mountain Preobrazhenskaya, where the river Ob' flows into the river Ural, which in many respects determined the further development of the city.

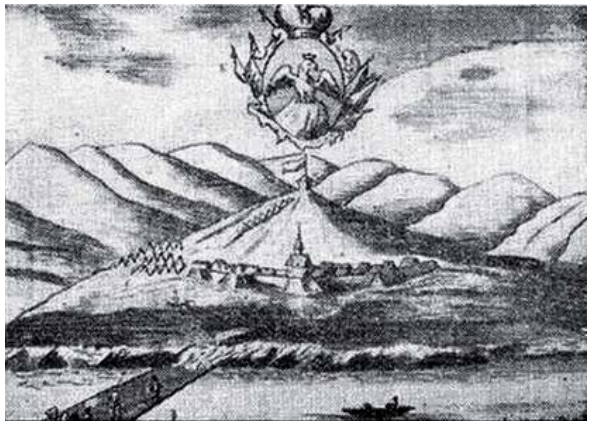


fig. 2.35
Orsk fortress, 1736.

In 1930s, in connection with the foundation of the industrial complex "Yuzhuralnikel" and the Orsk-and-Khalilovsky integrated metallurgical industrial complex (OkhMK), a major change took place in the development of the city. It began to stretch in a western direction due to the construction of a sotsgorod in the new part of Orsk and the residential areas of the OkhMK.

The decision on the construction of the new city was made in 1932. The architects H. Schmidt and M. Stam, who were transferred to the Gorstroiproect together with the remaining members of the "May's Brigade". In 1936, Philipp Tolziner, Konrad Puschel, Lotte Beese and Tibor Weiner – members of "Meyer's Brigade", who were left leaderless when Meyer left – joined them.

Schmidt and Stam designed the first version of the project for 100 thousand people in 1933 (fig. 2.36). The dispersed structure of industrial zones and the specific nature of their location with regard to each other resulted in a linear-dispersed planning structure for residential areas. In this project, the river Yelshanka divided the sotsgorod into two parts. The whole of the right bank was intended for settling, and the left bank – for industry, a railway- station and an aerodrome. The industrial zone was separated from the residential zone by the green belt of an improved park. The residential area represented an open rectangular-and-lattice structure, where standardised groups of residential houses with a comb structure were lined up from north to south. The given solution embodied the creative concepts of Schmidt with regard to new town-planning:

"Im Projekt der Stadt Orsk ist diese Frage so gelöst, daß die Stadt als einfaches Straßennetz mit regelmäßig wiederholten, übersehbaren Elementen angelegt ist, wobei diese Regelmäßigkeit und Einfachheit den Wechsel, die Veränderung den Gegensatz zur Wirkung bringt. Das heißt, wir versuchen in der Architektur den Satz zu verwirklichen, wonach es keine Gleichheit gibt ohne Verschiedenheit und keine Verschiedenheit ohne Gleichheit."[43]

The plan was not approved. The proposed system was mechanically monotonous, there was no obvious centre, all of which evoked severe criticism.

In 1934, H. Schmidt designed the second version of the plan for the New City of Orsk. The project also included an industrial site of the Locomotivstroi that had existed since 1932. As in the first version, the city stretched from north to south in the form of a strip; its residential areas had a developed system of cultural-and-customer service (fig. 2.37). Taking the criticism of his earlier version into consideration, Schmidt placed the city centre between the industrial site and the residential areas. He also rotated the buildings on the borders of the residential areas by 90 degrees. Thus, the buildings formerly arranged in a comb structure were now arranged along the perimetre. Administrative and public buildings were concentrated on the central thoroughfare, the longitudinal axis of the sotsgorod,. The transversal streets were orientated towards the industrial sites and the park. The improvement of the embankment of the Ural River was developed in detail, with a recreational

fig. 2.36

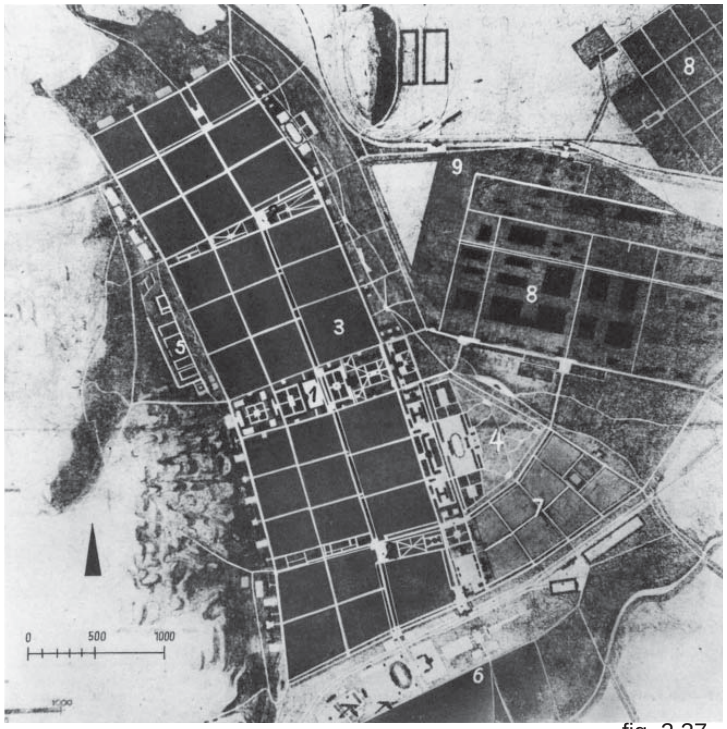


fig. 2.37

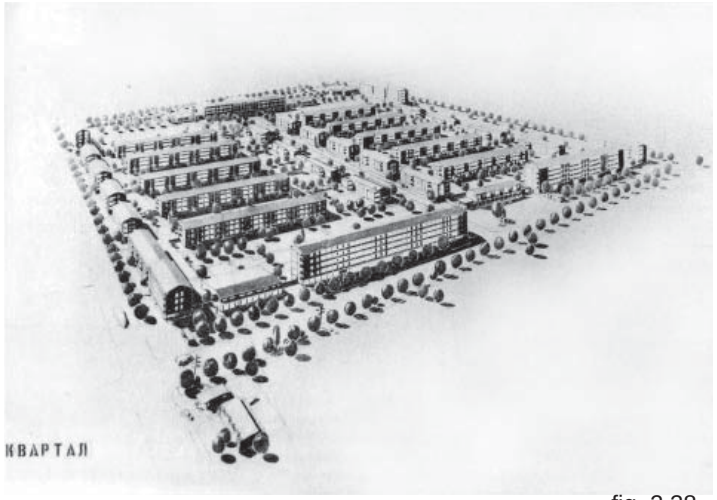


fig. 2.38

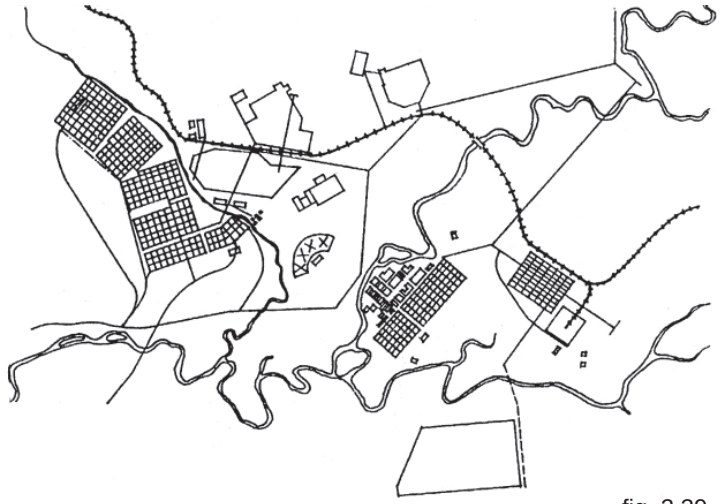


fig. 2.39

zone – grounds for rest and a sports centre.
Schmidt's team also developed projects of standartized residential blocks for implementation of the first stage of the sotsgorod (fig. 2.38).[44] A green strip protected residential blocks from the central thoroughfare. Behind the strip the hostels and service buildings were situated. The combs of appartment buildings together with kindergartens occupied the middle area of the block territory. Schools and playgrounds were positioned at the opposite to the road site of the block, surrounded by green. A driveway divided the block in two equal parts; each of them formed a residential complexes for approximately 2500 dwellers. In terms of architectural composition the blocks were designed as a whole one. Of this project, however, only one block was realised.

Consequently the rectangular-and-lattice structure of the New city developed the regular structure of the old city that had been built according to the general layout of 1886. The location of industrial and residential areas took into consideration the geographical features of the area: the river system and marsh areas in the water-meadows of the Ural River (fig. 2.39).
In spite of the numerous technical and economic difficulties, the New City of Orsk was partly built.

fig. 2.40
Orenburg fortress in XVIII ct.

By 1937, the construction of fifty three-storeyed residential buildings had been completed, which had in total 450 three-roomed flats; schools and a kindergarten.

Orenburg

Orenburg is of interest to us as a city with a rich historical past; as a city that never appeared on the list of strategic sites for socialist industrialization in the Urals. We illustrate here what kind of town-planning methods were used in such cities.

Founded in 1743, Orenburg was built as a fortress-town, a strong point in the line of fortresses on the rivers Ural, Samara and Sakmara. This line of fortresses defended the south-east border of Russia. The fortress was laid down on a high bank at the confluence of the rivers Ural and Sakmara (fig. 2.40). The town also had to serve as the centre of economic relationships with the peoples of the East, which, primarily, presupposed trade. That is why, the city had military and trade functions: there were military barracks and a special territory and buildings related to artillery – an artillery yard, powder magazines, and military institutions. There was also a shopping arcade, exchange facilities and the customs.

In the period of industrialisation, Orenburg remained apart from the construction sites of industrial giants; hence, its architectural-and planning structure remained practically the same since the pre-revolutionary period. During the first years of Soviet power, all the historical names of streets and squares were changed. At the beginning of the 1930s, according to the new principles of planning, certain measures for ordering the general layout of the city were carried out (fig. 2.41). The territory of the city was divided into functional zones; residential areas were formed, with their own servicing centres. The existing groups of residential houses were extended, and systems of cultural-and-customer service introduced. Trees and shrubs were planted in both the centre and the periphery, parks and public gardens were laid out.

The city of Orenburg began to grow from the mid-

dle of the 1930s, when a few industrial enterprises came into operation. In 1938, the general structure of planning for Orenburg was designed (fig. 2.42). The architects of the First architectural-and-planning workshop of NKKh, under the leadership of N. Polyakov, were its authors. Retaining the existing regions, and taking into consideration the location of industrial enterprises, the authors of the project outlined the further development of the city in a north-eastern direction. In the western direction, the development of a free "wedge" between the new construction site and the Krasny Posad (the former Forstadt) was planned. With regard to the system of planning, three industrial regions were established.

The compositional idea of the general layout follows and develops the historical structure of the old city that had an obvious centre and a radial-and-circular system of streets. The thoroughfare going from the embankment to the centre, was renamed Sovetskaya street, and retained its original role. Two other thoroughfares connected the centre with the industrial regions. Parallel to the river Ural went a thoroughfare connecting the centre with the Krasny Gorodok and Syreinaya square. In the territory of Banny Island, a former dirty suburb of the city, a park of "culture and rest" was planned.

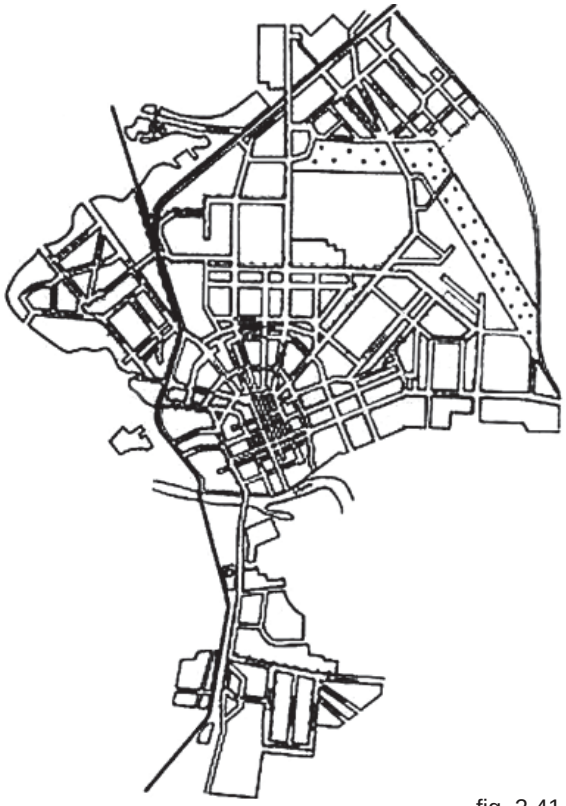


fig. 2.41

The public-and-administrative centre of Orenburg was situated in the Square of the House of Soviets; its cultural centre – in Bazarnaya square. Large public and residential buildings were planned in the territory adjoining the two squares. In each city district, central squares were laid down. In the first stage, construction along the thoroughfares and around the squares was outlined. On free sites, the construction of groups of residential houses was planned.

The main housing construction was envisaged in

fig. 2.42

the region of the New Slobodka, where approximately 22.5 % of the population lived.[45] The city was to be built with 4 and 5-storeyed buildings.

Orenburg is a good example of how the earlier nuclear radial-and-circular structure can be an ideal basis for the development of a compact ensemble-city, built according to the principles of town-planning in the neo-classical period.

Mednogorsk

Both Mednogorsk, and the populated areas adjoining it are new cities. Mednogorsk is the most mountainous of all the towns of the region. It stretches out to the west of Orsk, among the spurs of the Guberlinsky Mountains. The houses of

fig. 2.43

fig. 2.44

fig. 2.45

Mednogorsk rise from the more or less flat base of the mountains, close to the banks of the river Blyava, to their summits.

In 1929, geological prospecting that was carried out at the time of establishing the Orsk-and-Khalilovsky industrial region, revealed very rich deposits of mineral resources in the banks of the rivers Blyava and Khersonka. The Blyava deposits of copper, gold-and-silver and poly-metal ores as well as outcrops of limonite to the surface in the area of the river Rakityanka were immediately added to the Soviet industrialisation plan. The proximity of some railways, including the railway Orsk-Orenburg that was under construction at that time, contributed to that plan in the best possible way.

In 1933, the first team of builders of the Ormedzoloto (a name suggests large gold deposits) industrial complex disembarked from a train at the remote station of Blyava. When it was later discovered that the content of gold in the ore was lower than expected, the complex was renamed more appropriately as “Blyavinsky.” During the following twenty years, the Mednogorsk complex was the main supplier of copper in the country, and also the supplier of the first domestic sulphur derived from sulphur dioxide gases.

That was how the new city began; it was called Blyava. According to the Gorstroiproect plan, a city of Blyava of 40 thousand people was to be built near the station. Firstly, a settlement for miners in the valley of the river Rakityanka and the Nikitino settlement were to be built. This was dictated by the location of the mines, the industrial copper-smelter and sulphuric complex, and the geographic features of the area. The settements of Rakityanka and Nikitino and the settlement of the Tenth halt were connected by one main road. Due to the characteristic geographic features of the area, and the position of the mines and industrial sites, the road took the form of a closed ring, and settlements were threaded to it like beads (fig. 2.43). To design the structure of the main industrial and residential complex, the functional-assembly line system of settling by N. Milyutin was used. The river Blyava, with a green zone that had been laid out on its banks, separated the industrial zone from the residential zone. In the residential zone, individual cottages stretched along one side of the road, and low-storeyed buildings – along another side (fig. 2.44).

It is known that Hans Schmidt took part in the

development of the general layout of the city. In 1934-35, he designed two city parts. One of them was the plan for the miners' settlement of Rakity-anka (fig. 2.45). The site for the settlement was situated in the valley that was bordered by a river on the western side and by an elevated area – on the eastern side. In the longitudinal direction, the site was divided into two parts by the main road. Schmidt developed his layout taking the above-mentioned data into consideration. On the slope, he placed groups of single-family housing with their adjoining garden plots. On the other side of the main road, near the river, apartment houses and the buildings of cultural-and-customer ser-vice were planned. A branch of the road leading north, led to a local public centre where admin-istrative buildings, a pond and a sports complex were situated.

In 1939 the city was renamed as Mednogorsk. That is how the first city that developed in the years of Soviet Power came to emerge on the map of the Orsk-and-Khalilovsky region; it was the town, where the concepts of both a linear city and a parallel functional zoning were realised to their full extent.

Greater Ufa

fig. 2.46
Ufa fortress in XVIII ct.

"The Ufa Region is one of the most important machine-building centres of the Ural-and-Kuzbass industrial complexes thanks to the availability of prerequisites that allow to completely provide it with the needed high-quality metal from the future Komarovo-Zigazinsky integrated metallurgical works [...]. An important role of Greater Ufa as a machine-building centre is also conditioned by the availability of two very large navigable rivers: Belaya and Ufa, with their numerous tributaries along which all the rafting timber goes in the direction of Greater Ufa. Thus, with regard to its industrial development, the Ufa Region should be characterised as the region of two major branches of industry: 1) machine-building and metal-working, and 2) timber and timber-working industries."
M. Ginzburg[46]

From the time of its foundation in 1574 and in the course of the XVII and the first decades of the XVIII centuries, Ufa remained a frontier fortress, standing far to the south-east from the general fortification line of Russia. The fortress was built on a hill where the river Sutolka flows into the river Belaya (fig. 2.46). In the following years, the city developed along a high flat plateau, representing a big peninsula, washed by the rivers Belaya and Ufa, and rising more than 100 m. above them. This feature of landscape gave Ufa the form of a prolonged rectangular, with its longitudinal side turned to a meridian at an angle of 45 degrees.

In 1922, Ufa was declared to be the capital of the Bashkirian Autonomous Socialist Republic (ASSR). It was construction of the central electric station in Ufa that laid the foundation for industrialisation in the Republic; the initial phase of the station was started in 1931. In the same year, in the area of the Chernikovka village, construction of a whole range of industrial objects began, such as a major motor-building plant, an integrated pulp-and-paper works, "Kotloturbiny" (Boiler-Turbine) Plant; "Metallolom" (Scrap) plant, and a thermoelectric plant (TETs). The Chernikovka industrial site began to extend so swiftly that it caused problems for transportation, water and power supply, and housing for the working people.[47]
Development of the industrial complex of the region reached a new stage in 1932, when the Ishimbai deposit of oil was discovered and began to be developed. In 1935, construction of the first oil-refining plant in Bashkortostan started. The same year, the erection of the buildings of the Ufa oil-refining plant and a thermo-electric station (TETs), belonging to it, began. In 1939, the first units of the Ufa TETs-1 were put into operation.
As a result of the above-mentioned facts, development of regional planning for Ufa became a necessity. As a matter of fact, oil was discovered at the time when the work on the regional zoning was already coming to its final stage. This is why, the regional plans, described below, lack such a significant constituent as oil-extracting and oil-refining industries.

The scheme of the regional planning of Ufa and a preliminary design of the Chernikovka industrial region[48] were completed in 1933 in the Bashkirian sector of Giprom under the leadership of M. Ginzburg (fig. 2.47). The population of Greater Ufa by the end of the second five-year plan was approximately 480 thousand people, and by the end of the third one, 700 thousand people. The industrial hub was divided into four main constituents: Old Ufa

fig. 2.47

(an existing city), northern, southern-and-western, and southern regions. Regional planning was limited to the determining of the scheme of zoning of Greater Ufa on the whole. At that time, sites for locating industry and the number of population engaged in production were not yet determined for the southern and southern-and-western parts of the region. The preliminary project of settling was completed only for the northern part (Chernikovsky Industrial Region) and Old Ufa was to be reconstructed under the plan.

The reconstruction of Old Ufa envisaged the establishment of the main functional zones, location of residential areas and public centres, and development of the main traffic arteries (fig. 2.48). Communication between Ufa and the Chernikovsky industrial region was realised with the help of a suburban railway with intermediary stations. A tramline to Shaksha was also planned.

In the industrial zone of Chernikovka, a motorway had to be built; it had to connect all the production sites and the zone was to have exits to the main road (fig. 2.49). These motorways determined the planning "skeleton" of the Chernikovsky industrial region. The system of residential development followed the relief of the area, where different kinds of territories were not suitable for housing, and living dwellings were situated among them. Under the project, residential areas with their zhilkombinats were concentrated around working places and suburban farms (fig. 2.50).

"Having approximately 74 to 100 m of green belts – wherever possible, on both sides of the motorway, which was covered with asphalt, we lay out auxiliary gravel roads , along which we already have dwelling structures. There is no transit traffic along the gravel roads. They service only the distances among apartment houses. A park and a stretch of fruit trees in the middle is the place where certain public and customer-servicing structures are situated; they form the elements of a general system of the regional collectivised economy. This allows us to provide the best social and hygienic conditions (all the houses are surrounded with space and greenery), and the proper functioning of all the elements of the collectivised economy, the individual elements of which are within the immediate proximity of the consumer."[49]

The servicing system facilities operated within a certain radious. Nurseries, kindergartens and schools were located in the green pedestrian zones, and shops and clubs – on the side of the motorway. Ginzburg's team preferred servicing within a larger district system, rather than more traditional servicing within quadrangles of houses, or blocks of houses, in a city.

"Zhilcomplex (residential community), or a group of them, depending on the type of development on the given site, is provided with a school or club, and thus form a larger division – a district. The size of a district functionally depends on a whole range of factors; in our system of planning, it is determined by 25 to 50 thousand people. Alongside this, with regard to the order of developing a built-up territory, a district that is naturally connected to other districts may be included into the general system of settling as an independently functioning body."[50]

The project of the Chernikovsky industrial area was only partly realised. A microraion "INORS," which borrowed individual elements of layout and development from the plan of 1933, was com-

fig. 2.48

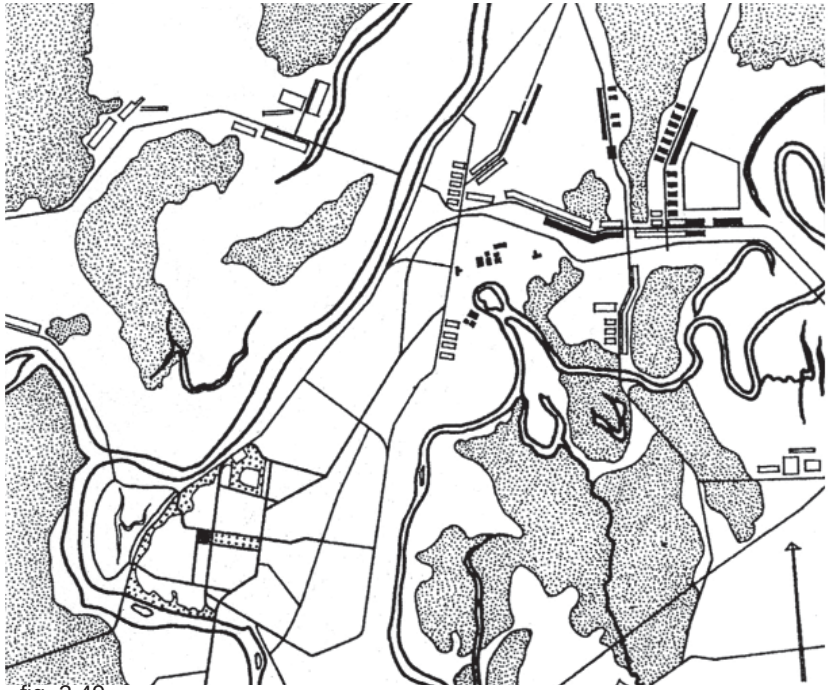


fig. 2.49

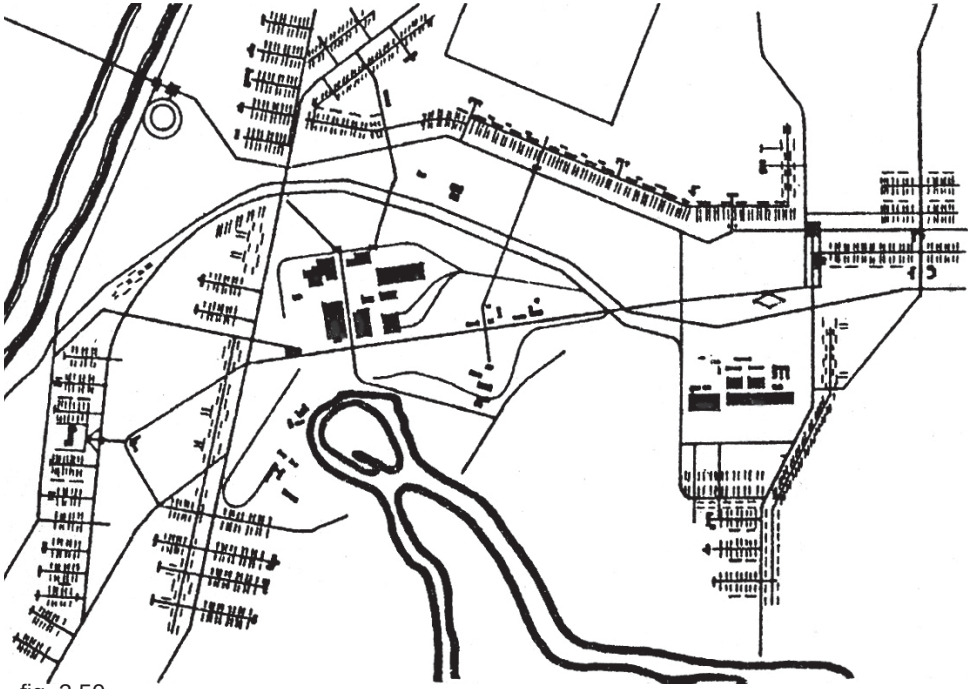


fig. 2.50

pletely realised. In other respects, the residential areas of Chernikovsk were built up according to the ensemble principle; their layouts were brought into a compact scheme. In 1956, the territories of Ufa and Chernikovsk were connected, after which Chernikovsk was renamed into the Ordzhonikidze district of Ufa.

Greater Chelyabinsk

fig. 2.51
Chelyabinsk fortress in XVIII ct.

"How to plan a built-up territory in Chelyabinsk – as a system of towns or as a single town?"
A. Kuznetsov[51]

Construction of the Chelyabinsk fortress began in 1736, because of the situation that took shape at the beginning of the XVIII century at the south-east borders of the Russian state. The fortress, with its area of 220x220 m, was erected on the right bank of the river Miass, and practically at the same time, posad began to encircle it on both banks of the river (fig. 2.51). For many years Chelyabinsk remained a remote provincial town that did not have active economic and cultural life. Grain growing was the main occupation of the residents of old Chelyaba, and trade was slack.

The situation changed, when in 1885 Emperor Alexander II made a decree ordering the beginning of the construction of a Trans-Siberian railway from the town of Samara to Omsk via Ufa – Zlatoust – Chelyabinsk; it cancelled the project, according to which the railway had to go via the cities of Kazan – Ekaterinburg – Tyumen. Discussions on where the road should go – via Ekaterinburg or via Chelyaba, were settled in favour of the latter, and a small *uyezd* town was given the honour of becoming the "gates to Siberia."

At the beginning of the XX century, Chelyabinsk already found itself at the crossing of two main lines: the Trans-Siberian and another main line, which followed a meridian and the eastern slopes of the Urals, and made the town one of the most favourably situated populated locations. The river Miass – a source of water supply, with vast adjoining territories suitable for industrial and housing construction, – also was an important factor in Chelyabinsk's development. At the time, when construction of the new industrial enterprises began, Chelyabinsk already represented a rather large town with a population of 59 thousand people, according to the census of 1926.[52]

During the pre-war five-year plans, Chelyabinsk turned into one of the leading regions of the Ural-and-Kuznetsk industrial complex. Within the framework of the industrialisation programme, it was decided to establish there a complex of major enterprises of ferrous and non-ferrous metallurgy, machine-building and metal-working, chemistry and power generation. Rich deposits of brown coal that provided fuel to the thermal electric stations of the town contributed to its development to a great extent. As early as 1928, a tractor plant, an electric power station, and the Electric-and-Metallurgical industrial complex had been established. Such plants, as ferroalloy, electrolyte, zink-smelting, abrasive, trepel integrated works and many others, were built after the foundation of the Electric-and-Metallurgical industrial complex. In 1934, after the Ural Oblast had been dismantled, Chelyabinsk became the administrative centre for the Chelyabinsk Oblast; it was already a large industrial city.

The planning scheme of the Chelyabinsk industrial hub was designed in 1934 by the team of Leningrad Giprogor under the leadership of the architects V. Vitman and N. Eismont (fig. 2.52). All the constituents of the industrial hub were located in the territory of a few dozen square kilometres, which made the problem of settling as well as technological and transportation issues especially difficult. Moreover, by the time the work on the project started, a number of enterprises were already operating below their capacities in Chelyabinsk itself. Mining of some coal depos-

fig. 2.52

its near Kopeisk had also begun, and a governmental directive had determined the sites for the Bakal metallurgical plant, 6 to 7 km away from the city, and for ChGRES-II (the Chelyabinsk hydro-electric station) at a distance of 10 km from the city. Taking into consideration all the existing and proposed town-forming elements, the planning project determined that the main settling territories be Chelyabinsk, Kopeisk, ChGRES-II and Bakal.

Thus, the Chelyabinsk industrial hub had acquired the form of a complex dispersed system of a satellite type; it consisted of the main centre – Chelyabinsk – and satellite-cities: Bakal, ChGRES-II and Kopeisk as well as a few minor settlements, which were engaged in the mining industry. Chelyabinsk became the centre of the metallurgical industry, and Kopeisk had to service the mining industry of the surrounding settlements.

Chelyabinsk

As we already know, until 1926, the Chelyabinsk had been developing as an uyezd town. Nevertheless, its territory was already rather large: 5 km from north to south and 2.5 km wide. The available reserves of the city territories had been developed before the October revolution. In 1926-28, the first layout scheme of Chelyabinsk was designed, which just recorded the previous sporadic city development. Small enterprises and settlements were situated at random in the northern and southern parts of Chelyabinsk. On the west side, the city bordered a forest that protected it against the prevailing western winds. On the east, a railway main line outlined the city border.

To locate new industrial enterprises with their access roads and adjoining workers' settlements, it was decided to use territories on the eastern side, behind the railway, between Pervoye and Smolino lakes; this was done in a "shock"-work rhythm. At the beginning of the 1930s, two areas were already been used for industrial construction: South-Eastern (tractor works and a machine-tool

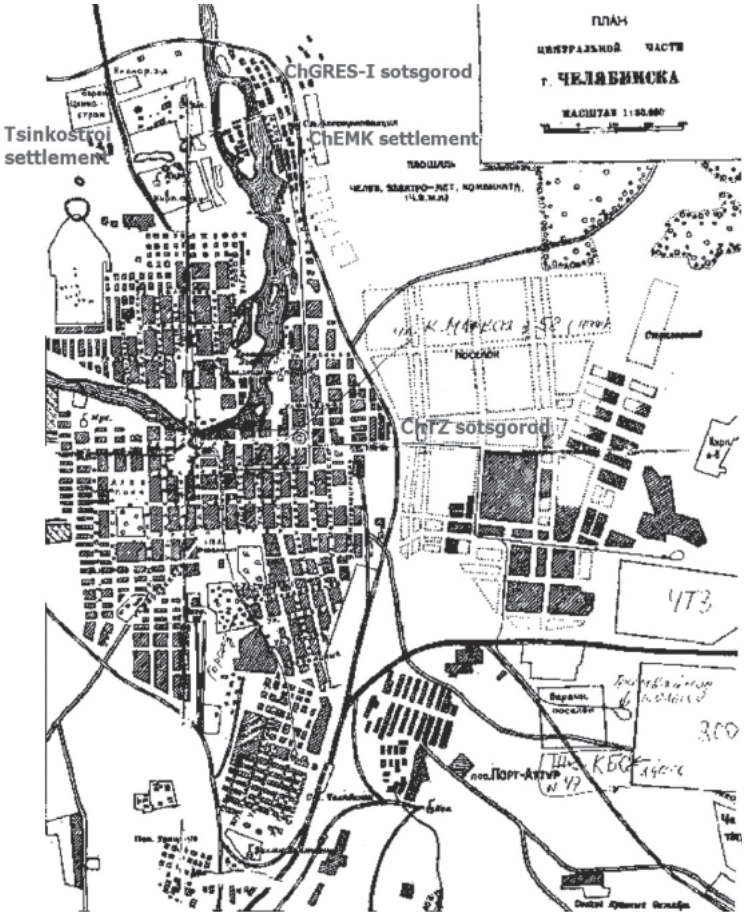


fig. 2.53

building plant) and Northern, where ChGRES-I and the Electric-and-Metallurgical industrial complex were situated. These areas were at a distance of 1.5 to 2.5 km from the town centre. Near the enterprises, residential areas were designated, the construction of which began at the same period (fig. 2.53). A tramline connected these populated areas to the old city.

The ChGRES-I sotsgorod and the settlement of the Electric-and-Metallurgical industrial complex (ChEMK) were among the first newly-built housing estates. The settlements that stretched one after another along the river Miass, represent one linear planning system.

Five parallel ribbons of comb development form the ChGRES-I sotsgorod; it consisted of 4-storeyed buildings standing along the street side and 2-3-storeyed houses of a cottage type (fig. 2.54). The system of cultural-and-consumer services consisted of a technical college, a club, a kindergarten, and a small park.

The ChEMK settlement was formed by two (and in wider areas, by three) strips of residential buildings that were also located according to the comb principle on the sides of the city thoroughfare (fig. 2.55). A perpendicular thoroughfare, going from the opposite riverbank over a bridge, divides the settlement in the middle, which is reflected in the volumetric-and-spatial structure of the settlement. The part of it that borders the ChGRES-I sotsgorod has 3 to 5-storeyed residential blocks. On the other side, stand very long 4-5-storeyed blocks. The settlement also had a developed system of services that was necessary for an autonomous industrial-and-residential formation: nurseries, a hospital, a canteen, and shops as well as a club with a pier, a beach, a cinema theatre, a green house, playing and sports grounds, and squares and parks.[53]

Within the framework of a programme, the famous architect A. Burov planned the tractor-plant sotsgorod, but it was not realised to the full extent. A number of public buildings were built in that district of the city under his project of 1930-1933:

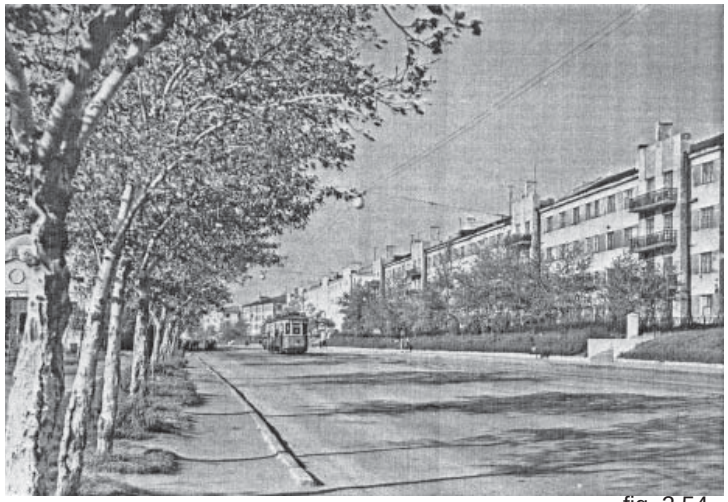


fig. 2.54

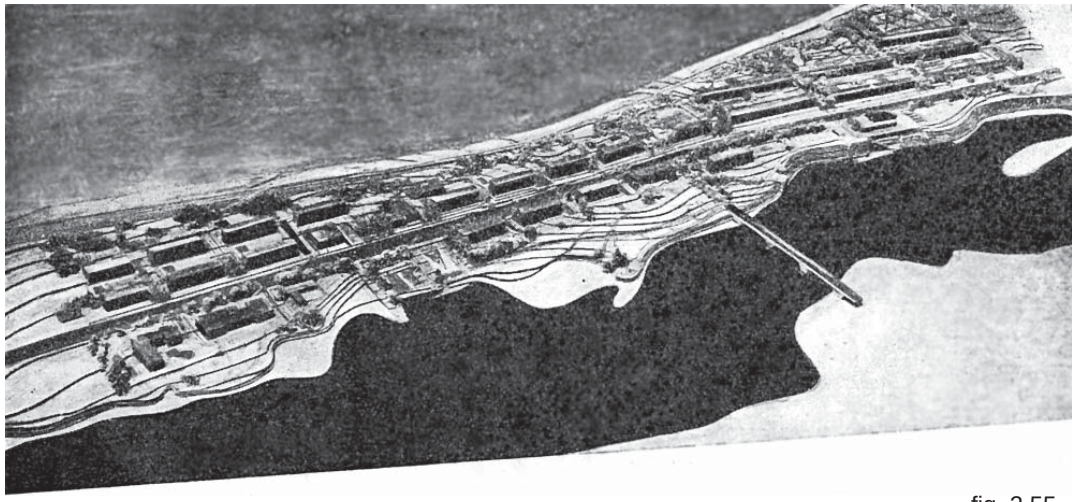


fig. 2.55

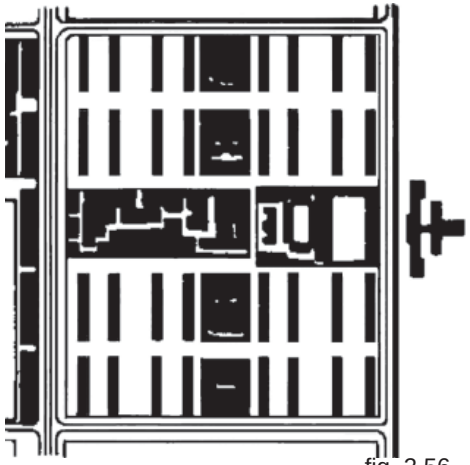


fig. 2.56

fig. 2.57

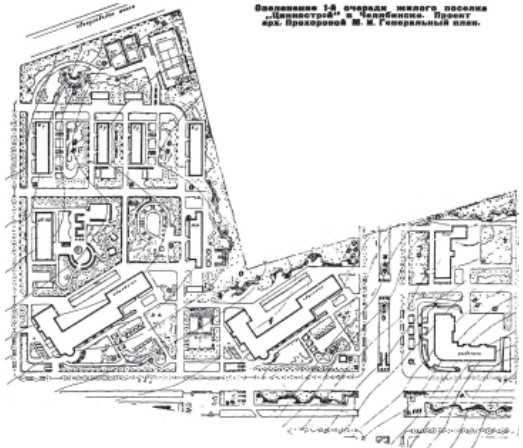


fig. 2.58

fig. 2.59

the management building and Palace of Culture of the Chelyabinsk Tractor Plant (ChTZ), the restaurant “Vostok”, a cinema theatre and a kindergarten. Burov made an enlarged residential block, or a microraion, the main planning unit of the sotsgorod. One microraion was built at that time and thus became one of the first of its kind in the country.

The standardised ChTZ microraion was designed as a compact planning organism. Two mutually perpendicular green belts divided the square of the residential block into four equal parts, in which 4-storeyed residential houses were arranged in a comb system (fig. 2.56). Buildings for consumer services were concentrated on one of the green belts, and the other one had nurseries and kindergartens. As a result, we have 32 houses on the corners of the block of buildings that is cris-crossly cut with public buildings (fig. 2.57).

The Tsinkostroi (zink-smelting plant) settlement

fig. 2.60

for 700 inhabitants is another example of compact planning (fig. 2.58). The settlement extends into a large street with grand-scale hostel blocks that are located at an angle of 45 degrees to the street. The territories around hostels have sports grounds and an open reservoir or a fountain, which had a sculpture. At the crossing with another street were a department store and a bathhouse. Inside the block of buildings, there were residential houses, a kindergarten and a nursery located in the comb system. At the external border of the settlement, on the side of the main road, there was a green belt with sports recreational grounds. Thus, the planning of the Tsinkostroi settlement combines the methods of development on a monumental scale and comb development.

fig. 2.61

The central part of the city underwent fragmentary reconstruction. Separate “islands” of multy-storeyed buildings towered above the low pre-revolutionary development. Such was the Gorodok OGPU (OGPU quarters) built at the beginning of the 1930s under the project by the architects N. Korinfsky and A. Tumbasov (fig. 2.59) and the 7-storeyed building of a hotel on Vorovsky street built in 1930-31 under the project by the architect Ippolitov(fig. 2.60). Also notable is the post-office building built in 1936 under the project by the architect N. Futukov (fig. 2.61). This building, with its avant-garde forms, set back at the crossing of Kirov and Kommuna streets, bears certain resemblance to the Sverdlovsk Post-Office building. This as well as the fact that its style apparently lagged behind the modern tendencies of that

fig. 2.62

time, is explained by the fact that all post-office buildings and their branches were designed in a centralised way as early as the period of the new architecture, and the realisation of the approved projects was sometimes delayed for years.
This is Chelyabinsk as the American journalist John Scott saw it when he visited the city in 1933:

"…a gleaming city some miles ahead of us. The immense Chelyabinsk tractor plant covered a larger area than the entire area old city of Chelyabinsk. Around the plant we saw a 'Socialist City' of shining white apartment houses, spotted with parks and gardens. Further away we could see the 'Stankostroi' factory [...]
The old quarter of Chelyabinsk was more or less as it had been for many decades: small wooden hoses, rather down at the hill, narrow winding streets, and no modern conveniences. Two new housing developments, however, were outstanding: the tractor plant 'Socialist Sity' and 'Gorodok OGPU'[...] Streetcar lines had been run through from the old quarter to both these new developments, which were fast becoming the social and cultural centres of the city."[54]

In 1934, when Chelyabinsk acquired the status of the Oblast centre, work on making the general layout of the city started. The design work on Chelyabinsk was realised within the limits of the Chelyabinsk industrial hub also by the team of Leningrad Giprogor.
In 1937, the general layout was completed. As in the preceding period, a dispersed-group system of the city had been formed, and designers had the task of supplementing and organising those groups of industrial-and-residential formations that had been relatively successfully formed. They had to transform the city into a single compact whole (fig. 2.62).

fig. 2.63

fig. 2.64

"The volumetric-and-spatial composition of Chelyabinsk is thought of as a system of mutually subordinated ensembles that organise the mass of residential blocks of buildings around themselves. The location of those ensembles in the layout of the city is determined both by their cultural, public or administrative importance and the architectonics of the site – by its heights, valleys, and open perspectives among other things. Thus, the importance of the ensembles should directly depend on the size of the territory that is organised by them."[55]

Taking into consideration the areas that limit the growth of the residential territory, the borders of the future city took the form of an ellipse that is slightly prolonged along the meridian and has the area of five thousand hectares. The existing planning of the central part of the city was retained; only the area near the railway station underwent radical changes, as the existent development had a sporadic nature. Planning of individual districts, mainly rectangular, was adapted to local conditions of the terrain. On the whole, the system of districts that surrounded the old centre had the features of radial-and-ring planning (fig. 2.63).

World War II interfered with the realisation of that project, but its main town-planning principles were taken as the basis for succeeding design works.

Bakal

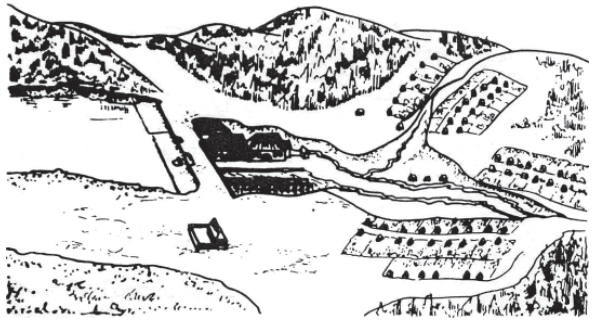
The fact that the Bakal metallurgical plant is situated at a long distance from the main city and that the northern suburbs of Chelyabinsk are not suitable for housing development led the designers to the conclusion that Bakal should be designed as a satellite-town.

The planning project of the Bakal sotsgorod was developed in 1934 in the course of work on the Chelyabinsk industrial hub. It was executed in the workshop of the Leningrad branch of Gorstroiproekt under the leadership of D. Gauzner. The sotsgorod for 106 thousand people was designed "according to the latest requirements to development."[56] For us, of interest is one of its parts: a settlement with individual cottage-type houses.

To the north of the Bakal sotsgorod, in the Pine forest, a settlement for administrative-and-technical personnel was designed (fig. 2.64). It consisted of 16 cottages and three auxiliary and servicing buildings. Cottages that were situated along an arc opening to the river, were surrounded with a picturesque garden with a developed recreational programme: sports grounds, courts, and a pier for boats.

Thus, the use of the garden-city concept continued in the period of ensemble town-planning.

fig. 2.65
Nizhny Tagil iron works, 1730



Greater Tagil

"The experience of planning a number of cities shows that it was the performing of an engineering-and-economic, rather than architectural task. In our work on Tagil, we tried to disprove the thesis that architect would be able to "comb" any scheme later. Architect begins from a scheme."
A. Mostakov[57]

Nizhny Tagil is one of the oldest industrial cities of the Urals. The Mt. Vysokaya deposit of magnetic ores was discovered in 1696, which served as the basis for constructing Vyisk copper-smelting plant in 1722 and Nizhny Tagil iron works and iron manufacturing plant in 1725 (fig. 2.65).

When the realisation of the industrialisation plan began, Nizhny Tagil, unlike many other cities, was already a rather large industrial town, the population of which, according to the census of 1926, was 38.8 thousand.[58] A favourable geographical position in the Middle Urals, rich natural resources, and the availability of a railway hub determined its key position in the Ural-and-Kuznetsk industrial complex.
According to Stalin's plans, construction of a powerful industrial complex, with its five gigantic plants with adjoining settlements, fell on the lot of Nizhny Tagil. There also were mines near the city that had to undergo reconstruction.

"Thus, a whole range of industrial giants will grow up around the "Demidovs' settlement," they will change the image of the old city, turning it into one of the largest industrial centres for both the Urals itself and the Soviet Union."[59]

However, in spite of all the advantages of the original resources, the history of Nizhny Tagil industrialisation became a sad example of the consequences of ignoring planning analysis at the stage of locating industry. We may see here an apparent parallel to Magnitogorsk. Moreover, if the main disadvantages of the planning structure of Magnitogorsk and the difficulties of its improvement were mainly caused by errors in planning, then, in the case of Nizhny Tagil, lack of coordination in the work of design organisations became their main cause. Plants and residential areas around them were planned hastily and by many different organisations, independent of each other. The metallurgical plant was designed by the specialists of Leningrad Gipromez; the projects by the Uralvagonzavod (Carriage plant) were executed in Moscow by Gipromash; of the by-product coke plant – by Giprokoks in Kharkov; the reconstruction of mines and the construction of the sintering plant – by Giproruda in Leningrad. Those institutions did not coordinate their work, and literally seized construction sites that were most suitable for them.[60]
This led to a sporadic location of production plants. Because of the direction of prevailing local winds, the metallurgical works, with their by-product coke production, – the main polluter – had to be situated to the east of the city, and the Vagonostroitelny (carriage) plant had to be closer to the centre (fig. 2.66). In reality, the opposite happened. As a result, the centre of the city and the settlement of the Vagonostroitelny plant found themselves under the cloak of discharges of the by-product coke production. Moreover, the metallurgical industrial complex turned out to be 40 metres lower than the site of the Vagonostroitelny plant, and loaded carriages had to move up, and unloaded ones – down. These and other contradictions made the development of regional planning and the general plan of the city an urgent neces-

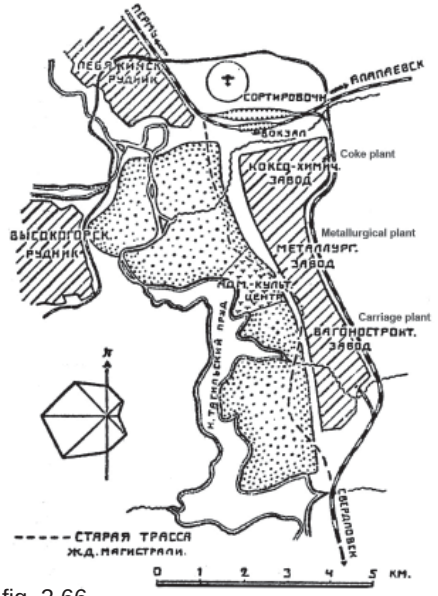


fig. 2.66

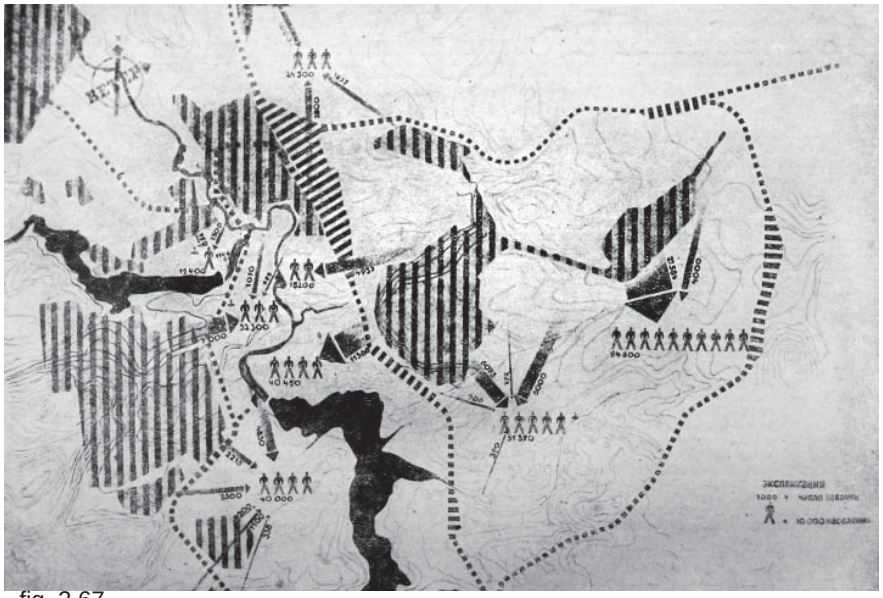


fig. 2.67

fig. 2.68

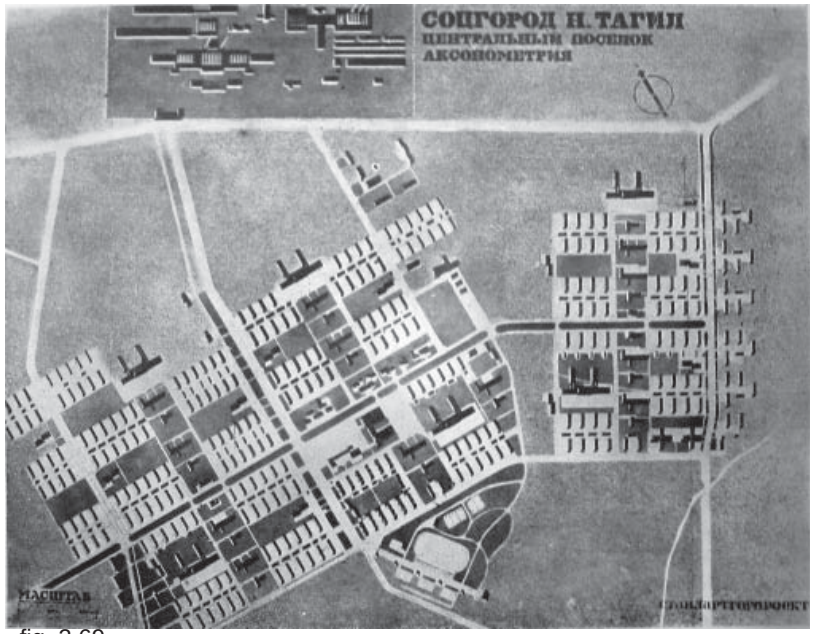


fig. 2.69

sity.

The project of regional planning of Greater Tagil and the general layout of Nizhny Tagil was developed in Standartgorproekt by the team led by A. Mostakov. Similar to the situation with Magnitogorsk, designers had to take into consideration the unfavourable location of the metallurgical and carriage industrial complexes that had been founded in 1930, and they were well aware of the fact that it was very difficult to eliminate those errors. Probably, in their design, they made an attempt to consider the mistakes of Magnitogorsk.

The project of regional planning for 450 thousand people was confirmed in 1932 (fig. 2.67). In fact, it was hub planning of an extended type that covered two adjoining hubs:[61]

- A large hub of construction sites of the first and second five-year plans and developed industrial territories around Old Tagil; they consisted of NovoTagilsky metallurgical and by-product coke production; the Ural Vagonostroitelny (carriage) industrial complex; a sintering plant; a refractory plant; an old metallurgical plant; and the existing iron and copper mines.
- A smaller hub of secondary construction sites that is situated 12 km to north-west of the centre of the old city that had the Staletsentrolit enterprise, an aniline paints factory and the existing iron mine.

The designers managed to develop a sufficiently merit-worthy plan; that is why Nizny Tagil became the first USSR city, where in 1933 the government approved of the project of regional planning. Thus, it became possible to realise the project to a great extent without amendments.
Same time, the first version of the general layout of Nizhny Tagil was ready (fig. 2.68). The following areas were determined as residential: Central (Old Tagil), Vyisky, Zavyisky (Trans-Vyisky) Galyanka (with the development in the southern direction), Krasny Kamen, the site of 2nd International mine, Vagonstroi and Korabelny Mys – for the Park of Culture and Rest. The location of the enterprises, configuration of reservoirs and the specific features of the terrain relief dictated a dispersed nature of the planning structure of Nizhny Tagil with its historical core, sotsgorod and the linear satellite of Vagonstroi.
In the planning of the main city districts, the main streets were orientated towards industrial enterprises, with most of residential buildings orientated to the water. The coastal zones were proposed to be free from the existing development and made green, and on the border of the coastal parks, cultural centres had to be located. The project gave a lot of emphasis to the transportation system.

In the words of one of the team members, in the period of 1931-32, the main tasks of designers were to organise housing during the transition period and to locate the system of public services. This apparently testifies to the avant-garde approach evident in the development of the first version of Nizhny Tagil general layout.[62]
The same was again confirmed by the fact that it was Ernst May that took part in the designing of the first version of the general layout; at that time he was working in Standartgorproekt. Though it was impossible to find drawings for Nizhny Tagil, one may definitely say that when Mostakov and his team made the first version of blocks of residential houses, they consulted May (fig. 2.69).[63]
In particular, it is the organisation of blocks of houses that evidently testifies to that: districts are divided into blocks according to a strict modular reference system, and the blocks are constructed using the comb principle.

A sudden change in “the creative tasks of Soviet architecture” happened at the same time as the project of general Nizhny Tagil layout was completed. The project of regional planning of

fig. 2.70


fig. 2.71

Greater Tagil underwent a complicated system of agreements and was approved of, and the general plan of the city of Nizhny Tagil had to be urgently changed due to "compulsory" criticism of avant-garde methods, in particular, the methods of Ernst May. Mostakov denounced May's methods as methods leading to a "heartless lack of individuality and a disregard for man's interests."[64]
In 1934, Mostakov's team presented the second version of the general layout of Nizhny Tagil (fig. 2.70). The scheme of the plan and division into residential districts was retained from the original version:

"Industries were surrounded with residential areas; this led to a concentrated form to the west; in contrast, the form of the city ton the east came to be linear. [...] The "threads" that drew the city to industries naturally led to a mixed form of the city due to different conditions. At the same time, not only did the form become definite; the very structure of the city, of its thoroughfares, acquired its architectural direction in accordance with the found form. In the western district, it is ring-like, in the eastern – ribbon-like."[65]

Main changes were made in the structure of the general layout and the organisation of the development. In the general layout, ensemble, silhouette and mutual spatial dependence began to substitute functionality (fig. 2.71):

"The site for the centre of the city was not chosen by the analysis of functional features alone. We had also to find architectural conditions for it. The fact that the centre of "gravitation" of all the districts has a few heights that are combined with a reservoir and create the main perspective axes for the city, naturally determined the position of the city centre there. Along the main axis, perspectives open to the pond and "Krasny Kamen," along the secondary axis that is a tangent of two rings, the perspectives are directed to industrial enterprises, for which mountain outlines serve as a background."[66]

The principle, according to which blocks of residential houses are organised, was the first to be changed:

"A block of residential houses cannot be a constant entity, and cannot be given in advance, because the city street system often depends not so much on the desire of a planner to have the right system, as on specific features of traffic and communication within the city. That is why, nearly always, the system results in blocks of houses, having a triangular or other irregular form of different size."[67]

Each block of buildings was designed as a system of residential complexes with elements of public services and territories for sports and recreation that formed its compositional centre. The principle of block development changed from a comb to a combined one: the block of buildings was girdled with development along its perimeter, and inside it, a comb system was retained. In the succeeding versions of the general layout, the principle of comb development was completely eliminated.

Work over the general layout was very much delayed, especially the designing of the new residential areas. The layout scheme of Nizhny Tagil was finally confirmed only in 1939. Such issues as how, where, and when, and for how many people residential blocks of houses had to be built, were still being resolved, whereas their construction had been in full swing since 1933.
Initially, residential areas at the metallurgical integrated works were built; among them were Krasny Kamen, and the site near the Vagonostroitelny plant. At the beginning, it was decided to develop two parts of the city separately, foreseeing the possibility of connecting them into a single city in future. Later, these parts were connected with a ribbon of residential blocks of houses, which outlined the main direction of the territorial extension

fig. 2.72

fig. 2.73

of the city to the east. It is these two new districts of Nizhny Tagil that are of most interest to us.

Vagonstroi – Carriage Plant

From 1936, in the official documents, this new district was called the Dzerzhinsky district, but among the people, it received the name "Vagonka" that in Russian sounds well-aimed and precise. The realisation of the sotsgorod of the Vagonstroi Plant under the project of Mostakov's team started in 1933. That is, the architectural-and-planning structure resulted directly from the first version of the general layout (fig. 2.72). It was designed for 57 thousand people, with five residential and five public blocks of buildings. Vagonstroi was designed as a compact site with an almost square form. A rectangular system of streets with a slight deviation from the meridian to north-east became the basis of the district. Only the western group of blocks of buildings, bordering a protected zone, acquired an irregular configuration. In the composition, two big thoroughfares were accented: the ring thoroughfare, connecting all the districts of the city, and the system of district thoroughfares, going from the main entrances of the plant to the district square. They constituted the axis of all the planning structure of the district. The main square with a district centre was located at their junction. Two high-rise buildings emphasized the entrance to the city zone. The plant square had the works management buildings and a factory school. Along the district thoroughfare, that is 1.5 kilometres long, a stretch of public blocks of buildings was founded. The district was framed with a green zone: a protection area in the west, and a forest park to the north and east (fig. 2.73).

In 1933, the club for engineering and technical personnel and a bath-house for 600 people were also opened in the Vagonka district. Their image has the features of the new aesthetics. In the second half of the 1930s, 14 capitally built buildings, with 3 and 5 storeys, a hospital, one more bath-


fig. 2.74

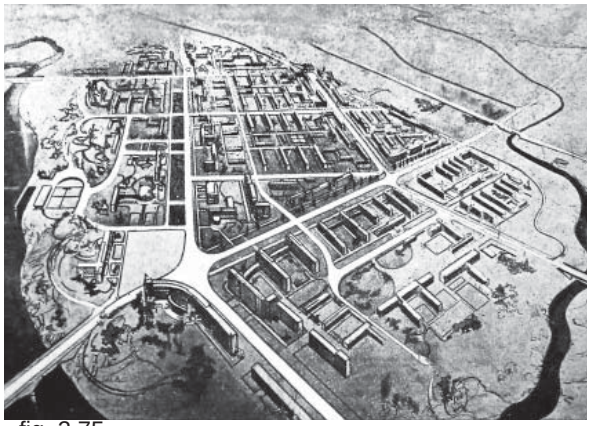


fig. 2.75

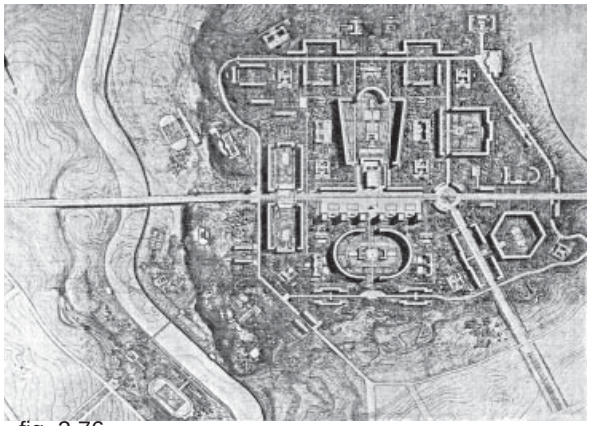


fig. 2.76

house, a nursery, a kindergarten and two schools were built (fig. 2.74). In 1936, the first Park of Culture and Rest was founded between the main streets.

Not a single block of buildings had been completed before Word War II. By June of 1941, only 24 capitally built buildings had been erected under the "sotsgorod" plan; however, the buildings of that time are characterised by architectural completeness, strict lines, and expressive architectural features.

The Region of the Metallurgical Plant

This region had the existing Vyisky and a part of the Central Region as well as the new Region of Krasny Kamen. In the process of making the first version of the general plan, it became clear that demolition of the housing stock in old districts of Tagil is impossible. That is why construction started from the new region.

The area of Krasny Kamen (version of 1932) corresponded to functional planning principles proposed there: the district was "threaded" to a ring thoroughfare; residential blocks of buildings, brought to a geometrical form when possible, were built up with a comb of standard apartment houses with a servicing lane erected between them (fig. 2.75). A cultural and sports centre was located in a green coastal zone.

In the general layout of 1934, a number of changes were made in Krasny Kamen. The form of the blocks of residential buildings acquired more freedom, and residential development, with its different form, length and scale, created a varied rhythm. Thoroughfares were directed in such a way that the perspective does not exceed the limits of visibility. To achieve this effect, thoroughfares were deliberately "broken up." The space among the three districts of the metallurgical industrial complex, with its river valley, was used for a district Park of Culture. The thoroughfares' perspectives, inside the blocks of residential buildings, opened to a picturesque riverbank.


fig. 2.77

The final version of the Krasny Kamen project was executed by M. Ginzburg in 1935 (fig. 2.76).[68] This version proposed a compact development with closed ensembles. The composition was based on the combination of semi-circular, trapezium-shaped, square and hexagon complexes with green yards. The main street stood out because of its 12-storeyed towers volumes. The main blocks of residential buildings were formed by 3 to 5-storeyed houses; cottage-type houses were also used there.[69]

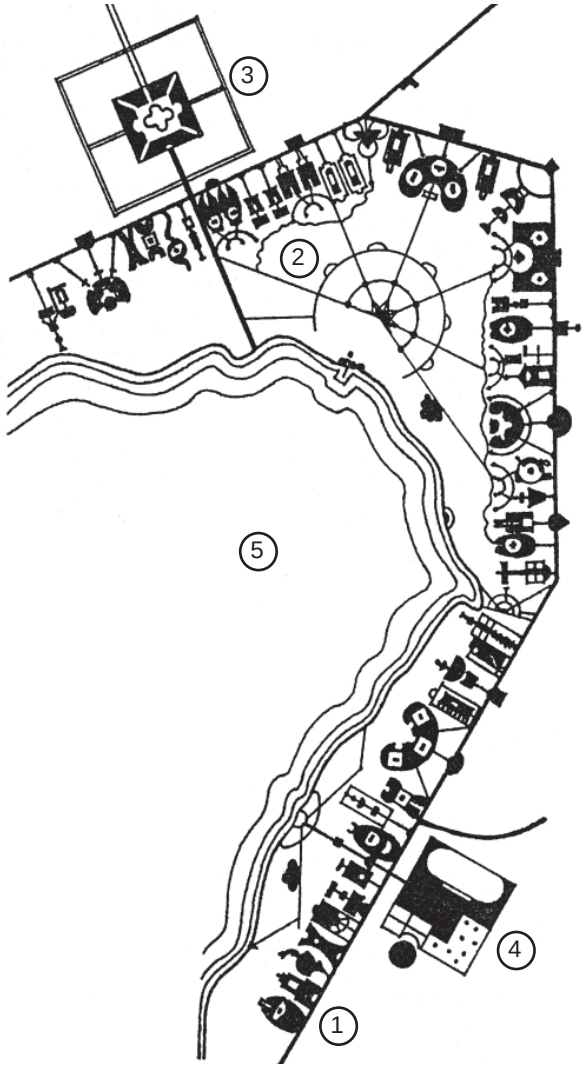
The realisation of the Krasny Kamen project advanced with less success than the construction of

the Vagonka district. In the pre-war period, only three buildings that could be seen from any point animated the picture: two residential 5-storeyed buildings and a semi-circular kindergarten that soon became a hospital (fig. 2.77). The authorship of these buildings has been prescribed to Vesnin brothers, although the documentary proof of it is not found yet.[70]

For the outer streets, situated in the green coastal zone, a cottage settlement was proposed in the plan of Standartgorproekt; it formed a transition from multi-storeyed buildings to nature. The Klyuchiki settlement was designed for the managerial personnel of Tagil's industry.[71] It was not built, but is worth our special attention: it was Ivan Leonidov who developed the concept of the general layout of that settlement (fig. 2.78).[72] Leonidov outlined a park in the picturesque bend of the Tagilsky pond coast; behind it, he formed a thoroughfare line that followed the bend of the coast. Along the thoroughfare, on a coastal side, about a hundred plots of land with residential houses of "advanced" type were situated. Connection between the settlement Klyuchiki and the remote districts of Greater Tagil was provided, in addition to a motorway, also by water transport and a railway. Similar to his competition entry for Magnitogorsk, in his project for Klyuchiki, I. Leonidov created a synthesis of the concepts of urbanism and desurbanism.

As is well known, virtually none of Leonidov's projects were realised, and Klyuchiki was not an exception. Nevertheless, this is one of his outstanding town-planning works, though, up the present time, this project has remained little known in the professional circles.

fig. 2.78



1 - thoroughfare with residential houses
2 - park
3 - social-and-cultural facility
4 - sport facilty
5 - Tagilsky pond

Kamensk's Industrial Hub

At present, there is neither industrial task, nor project for the plant. Strict and short time-scales for staring the plant require super-American rhythm of work, but I have no doubts that we shall cope with the task of constructing it at such a pace [...}. In the course of extending the industrial complex and settlement, rural houses in Kamensk should be substituted by big modern ones; in the future, Kamensk will turn into a big socialist city."
L. Trautman[73]

As early as 1682, the monks of the influential Dalmatovski Monastery that controlled vast territories in the Urals at that time learned about rich deposits of iron ore near the river Kamenka. There is evidence of the fact that at the end of the XVII century there existed a small iron-manufacturing facility there.
The city of Kamensk-Uralsky was founded in 1701 at the decree of Peter I. In the first two centuries of its existence (the XVIII and XIX centuries) it was called the State Kamensk's Iron Works, and was known for producing the best canons in the world (fig. 2.79).

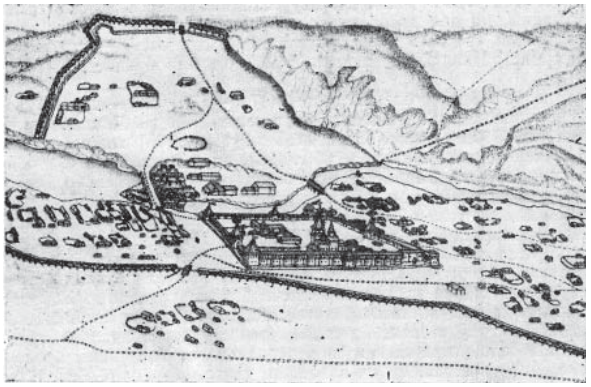


fig. 2.79
Kamensky iron works,
1720-30s

At the time of the October Revolution and the Civil War, Kamensk's plant found itself in the area of military activities and suffered a great deal. The situation was aggravated by the fact that by that time, the plant equipment had become completely outdated, and in 1923, the first-born of the Ural metallurgy stopped production. For many years after that, disputes on whether metallurgical production should be revived in Kamensk went on. When in April of 1929 the first five-year plan was adopted, Kamensk was not included in that plan. That is why in 1930 Gosplan refused to accept the application of Uralobcom for the construction of the plant.
However, Kamensk did not give up: the city had not only the old iron works, but also mines that continued to produce ore. In 1929, the town of Razgulyayevsky, and Sinarsky and Matyushinsky mines produced 70 thousand tons of iron ore. This output was big enough to send a prospecting expedition to the settlement of Kamensk. Geologists confirmed the existence of large deposits of brown iron ore, bauxites, coal, peat, and fire and brick clays. One more circumstance played into Kamensk's hands: thanks to the construction of the main line Chelyabinsk-Sinarskaya, Kamensk became a hub of the Siberian main line with a railway that connected it to the South and North Urals. Due to these factors and the persistence of the Uralobcom representatives, in February 1931, the Soviet of the People's Commissars allowed the construction of the Kamensk-Sinarsky metallurgical integrated works. Two months later, on the 1st of May, the official foundation of the plant took place.
The Kamensk-Sinarsky industrial complex was planned to have a complete-cycle ferrous metallurgy production together with non-ferrous metallurgy, machine-building as well as cement, refractory, brick and fuel-producing industries based on local raw materials. The organisation Sinarstroi that was part of the Vostokstal association was given the task to perform the plan. The start-up of the complex was planned for 1933, but it was actually started one year later.

The planning scheme of the Kamensk industrial hub was made by the team of the 1st Architectural-and-Planning Workshop under the leadership of L. Salischeva within the shortest time possible (fig.

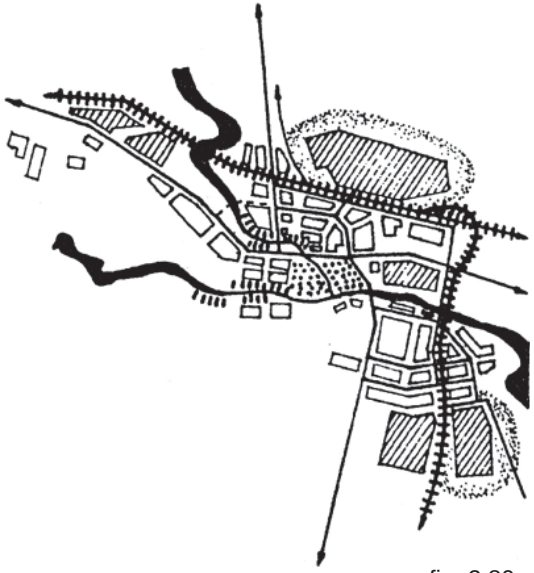


fig. 2.80

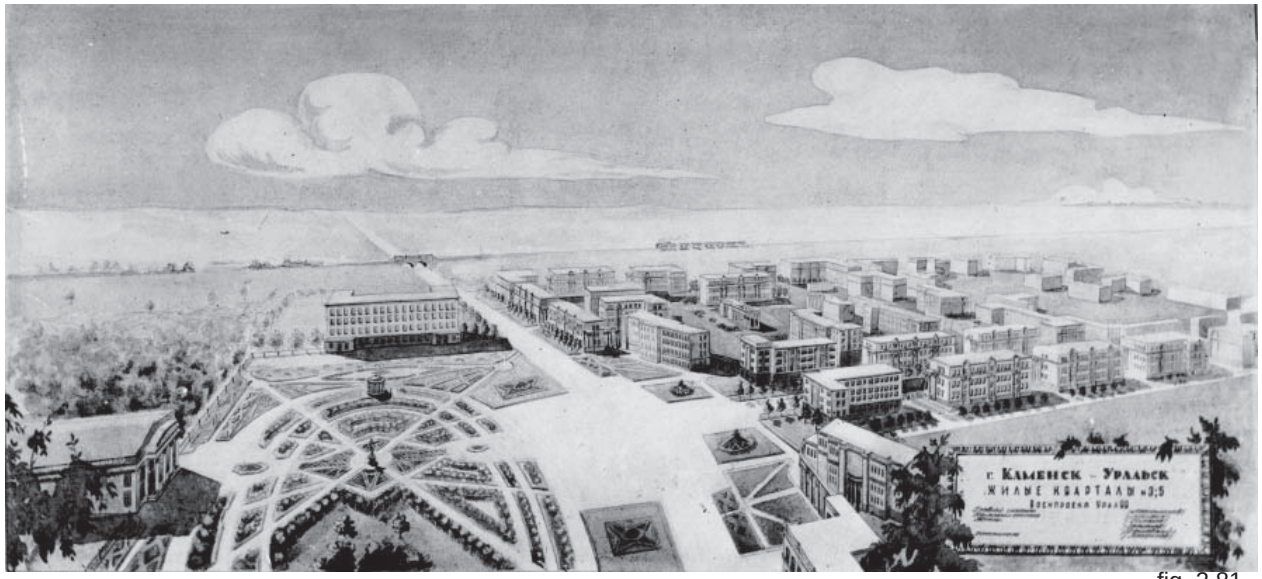


fig. 2.81

fig. 2.82

fig. 2.83

2.80).[74] Taking into consideration the development of industrial and transport construction, the planning scheme anticipated 2.5 increase in the population of the Kamensk hub. The project focused on the organisation of the territories of the area, elimination of the drawbacks of the existing layout, and the main problems of water supply, sewage system and transportation. The architectural part of the project outlined the choice of the main city territories and inter-district communications, without any development of thoroughfares.

Due to a considerable territorial dispersion of industrial sites, mines and green areas, the planning project proposed the establishment of not one, but two main residential areas. The first, the Severny (northern) residential area, was planned to be developed on the basis of the old city of Kamensk and the settlement of the Novotrubny plant (the New Pipe Plant) – the sotsgorod of the pipe-plant workers; the second, the Yuzny (southern) settlement, was also formed according to the principle of sotsgorod.

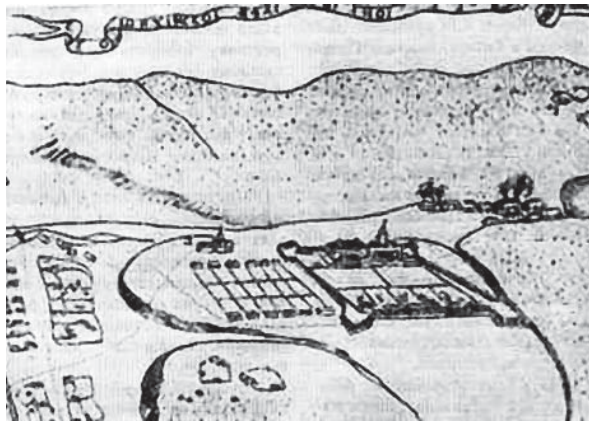
Alongside the reconstruction of the old city, a site in the Severny district, between the old city and the pipe-casting plant, and another area to the east of the left-bank sector of the old city, were allocated for a sotsgorod. Between the Severny and Yuzhny residential districts was the Central Park of Culture and Rest that had been established on the base of an existing forest. Two main residential areas of the industrial site, together with the green areas along rivers, had to form a single, naturally connected architectural-and-planning structure.

Of particular interest is the project of the development of the pipe-plant workers' sotsgorod. It was made by the Sverdlovsk Voyenproekt, by the team of Desyatkov (fig. 2.81). It combined the features of both avant-garde and neoclassical town-planning. The street system of the sotsgorod has a certain deviation from the meridian to the north-east. The facades of buildings of the main streets were located frontally, but inside residential blocks of buildings, there was comb development. The buildings strictly followed the meridian there, and were turned, accordingly, at an angle to the street buildings. The district square, with its oval shape, was built in a classical manner. The architecture of the buildings in the sotsgorod also combined modernist forms and a socialist realist decor.

In spite of the fact that industrial construction had to be realised in a rapid rhythm and took the main resources – as is always the case – it became possible to realise the largest part of the town-planning project of Kamensk rather quickly. As early as 1932, there were 2 big residential buildings, a polyclinic, a bathhouse, a department store, a nursery, a school, and a kitchen-factory in Kamensk. In 1935, a second hospital was built and a hotel was opened (fig. 2.82). All these buildings were designed in a modernist style with elements of neoclassicism (fig. 2.83).

The fact that the parts of the city were dispersed became the main drawback of the new Kamensk: the new construction sites were stretched out over 13 km within the limits of the city.

fig. 2.84
Yegoshikhinsky copper-smelting works, 1723



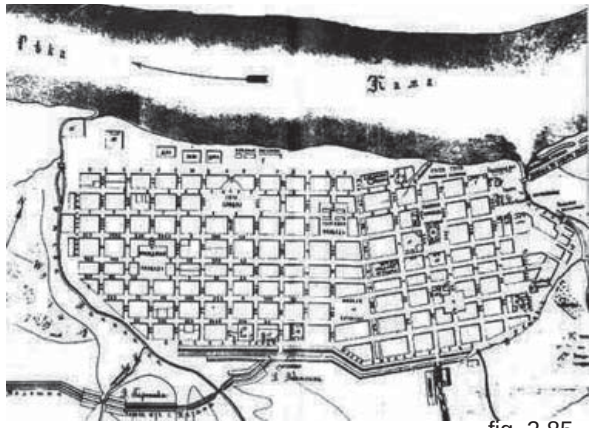


fig. 2.85

Greater Perm

"Die Planierung des Permer Rayons stellt insofern eine ideale Aufgabe dar, als sich in diesem Gebiet in seltener Weise alle Elemente des Aufbaues einer sozialistischen Planwirtschaft durchdringen :Bodenschätze, Schwer- und Leichtindustrie, Energie-Ressourcen, große Flusschiffahrt und ein wichtiges Bahnnetz, ein altes Kulturzentrum und ein vollwertiges agrarisches Hinterland."
H. Meyer[75]

Perm is a successor of such ancient settlements as Prikamye, Cherdyn and Kungur. In 1568, when the Stroganovs became owners of the lands along the river Chusovaya and Kama, Russian settlements began to emerge there.
In 1723, in the period of Peter's industrial reform, the State Yegoshikhinsky copper-smelting works and the workers' settlement of Yegoshikha, with its fortress, were founded in the place where the river Yegoshikha flows into the river Kama (fig. 2.84). A narrow valley of the river Yegoshikha did not allow locating the growing quarters of the residential area near the plant. That is why, on the upper terrace of Kama's bank and along Yegoshikha, a new residential area began to emerge. The development of the city was influenced by the ever-growing importance of Yegoshikha as a trade and transportation-and-dispatching unit of Prikamye and Priuralye (areas near the river Kama and the Ural-River). On the lower terrace of the bank, piers and long rows of stalls were built. They had a good connection to the plant and a convenient exit to the piers.
At the end of the XVIII century, in the course of an administrative reform, the Perm region, ruled by a governor-general, was formed in the Urals; it included in itself the Perm and Ekaterinburg regions. The settlement of the Yegoshikhinsky plant that had acquired the status of the main city of the *gubernia* (or the principle town of a province), and the name of Perm, was chosen to become the main city of the region. A grand opening of the city of Perm took place in October 18, 1781. This event determined the further development of the city. Perm lost the significance of a mining-and-metallurgical centre; with regard to its specific economic conditions, it gradually turned into a city that had primarily transportation, trade and administrative functions (fig. 2.85).

The Civil war that twice rolled through Perm, caused considerable damage to the economy of the city. Changes in the administrative status of the city also influenced the development of the city. In 1923, when the Ural Oblast was divided into regions, its centre was transferred to Ekaterinburg (Sverdlovsk). The same decree transformed Perm from the main gubernia city into the centre of the Perm okrug.
In 1922-23, work on determining the city limits was carried out. In 1922, the city Soviet issued an edict to join Perm's suburbs to the city in order to improve their sanitary situation, servicing the population, carrying out the work on improving their territories and fire prevention. Eighteen suburban villages and settlements were thoroughly studied: the nature of their planning, the degree

fig. 2.86

of available conveniences and connections of the residents to the city were determined. At the same time, topographical surveys of Perm and the areas around it were carried out as well as a study of the trans-Kama side between the Upper and Lower Kurya. In 1925, the data received allowed the extension of the territory of the city even more, from the village Bolshaya Iva to the Nizhnyaya Kurya site that was used as a holiday resort. It was necessary not only because the population of the city increased, but also to improve water protection and water supply, and to establish a protective green belt.

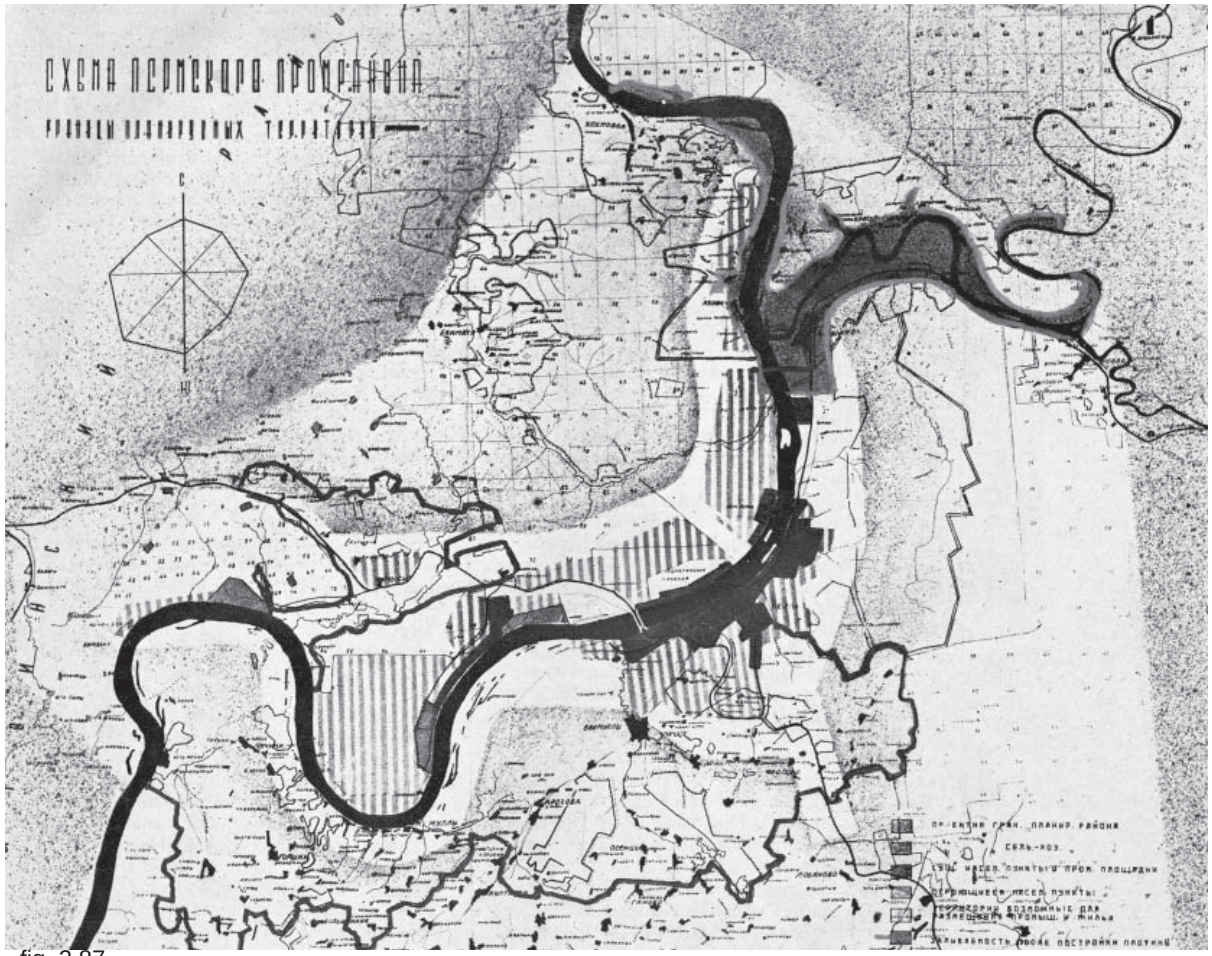


fig. 2.87

In 1929, the first project of the Greater Perm layout, that took into consideration the development of the whole industrial hub, was completed.[76] Academician V. Semyonov, the apologist of the garden-city concept, was the head of that development (fig. 2.86). Semyonov proposed strengthening the significance of the right-bank side of the city. The isolation of the Zakamsk side (the side over the river Kama) from the centre had to be overcome with the help of satellite cities on the rivers Balmoshnaya, Chusovaya, and the right bank of the river Kama. According to the diagram of land distribution, satellites were separated from the city with forest stretches. To introduce greenery into residential areas, green ways between sports structures, parks and gardens as well as a protective forest area were proposed. The transportation problem had to be resolved by building a ring railway on the right and left banks of the river Kama. The General Layout covered 15, 30 and 45-year period of Greater Perm development.

The problem of merging Perm and the town of

fig. 2.88

Motovilikha became imminent long before the time described; to solve it, the construction of the new centre on Gorodskiye Gorki (City Hills) was proposed. In addition, the project of detailed planning made it possible to design new buildings. The project was never realised, although certain important proposals were put into practice.

The specialists of Leningrad Giprogor continued the development of the Perm industrial hub. In 1931, the City Executive Committee concluded an agreement on the project for regional planning with them. In that work, the issues of the economic profile of the industrial hub had to be resolved. The project had to determine its territorial limits, to reveal internal and external economic ties, to develop the layout of roads and the form of city transport. A group of specialists headed by professor L. Ilyin carried out that work. Hannes Meyer also played a very important part in that project; he carried out surveys on site and made some plans. At the beginning of 1934, a technical-and-economic survey of the industrial area was carried out; the task for planners was determined and system for distributing the territory was devised (fig. 2.87).

The Giprogor project proposed the development of the city territories on both banks of the Kama. On the left bank, administrative and cultural districts were situated, as that bank had already been sufficiently developed. On the right bank that was more flat, the new industrial sites were located. Near them, such satellite cities of Perm as Gaiva, Zakamsk, Nizhnaya Kurya and Krasnokamsk were established.

Planning of the satellites gave the possibility for autonomous everyday life, without long journeys to the centre that were needed only for visiting cultural institutions. Communication among the satellite-towns was provided along the main road, that went along the bank, as well as with roads that had a new form – they followed the bends of the local relief – the Landstraße, Meyer's invention (fig. 2.88).

It was under the above-mentioned project that an intensive development of Perm started. By 1936, the Motovilikhinsky plant had been started in the outskirts of the city; the Ordzhonikidze and Dzerzhinsky plants were under reconstruction. The settling in the Perm industrial region acquired a clear ribbon structure. The work of Giprogor contributed to the proper location of residential and industrial districts and the quick growth of enterprises. The city stretched along Kama for 60 km and agglomerated a number of settlements and plants. In 1939, Perm and Motovilikha, which had almost merged with it, with a total population of more than 300 thousand, became the centre of the developing city agglomeration. Professor L. Ilyin considered that this stretched system met the principle of uniform settling.

Perm

With the extension of the territory of Perm and increase of the number of its inhabitants, a necessity for dividing the city into administrative districts emerged. When in 1938 the Perm Oblast was separated from the Sverdlovsk Oblast, the volume of the development of new and reconstruction of old districts increased, and the period of construction had to be shorter.

The project for planning Perm was carried out in 1938 by the architects of Leningrad Giprogor – A . Suborov, V. Yakovlev, M. Shtipelman and K. Zaichenko. Giprogor also carried out the project of the Perm industrial hub (fig. 2.89).[77]

The general plan incorporated the most rational

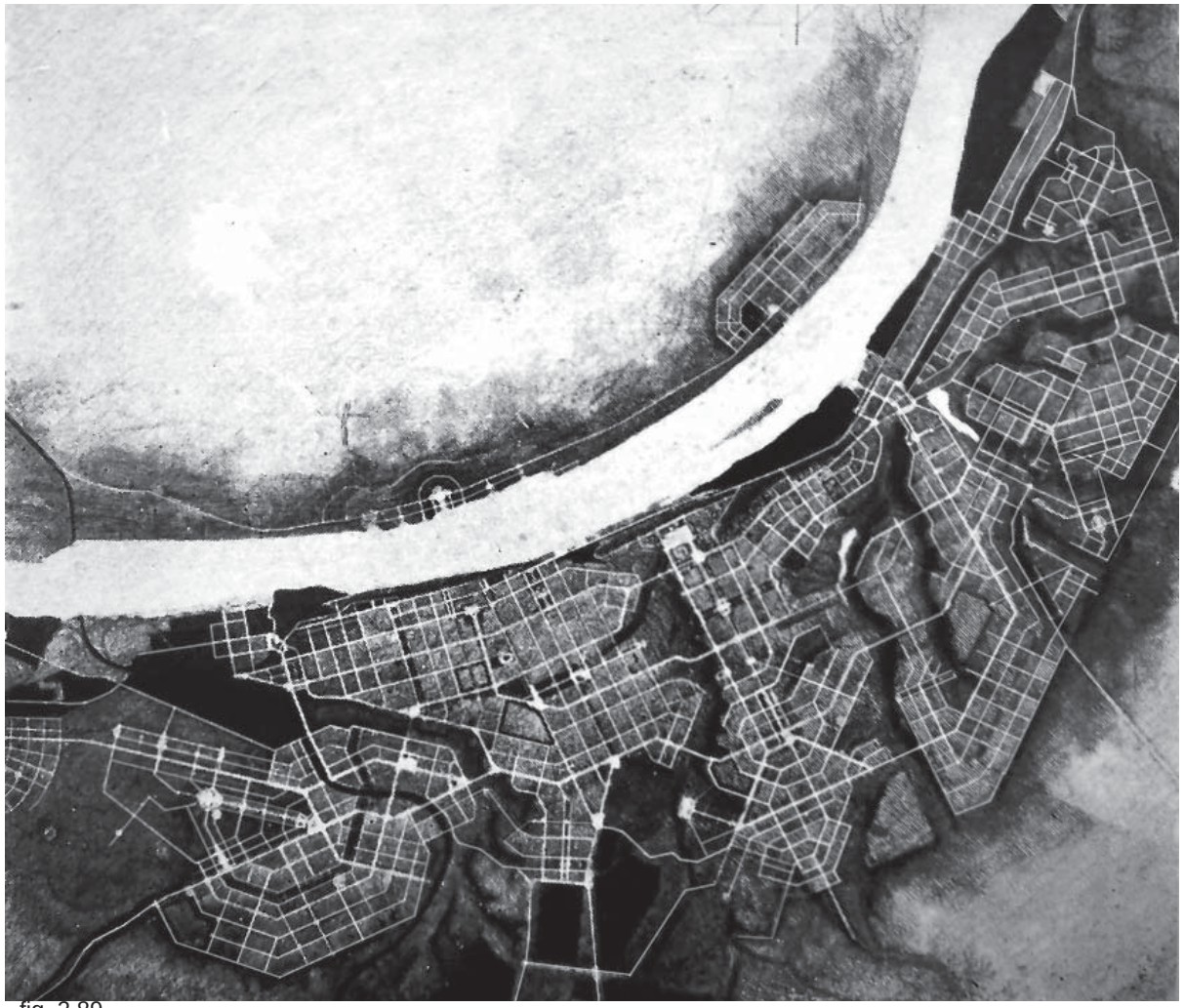


fig. 2.89

proposals that had been developed in the previous works. An example of this was the merger of Perm and Motovilikha (Molotov) into a single industrial-and-residential zone by establishing a new centre on Gorodskiye Gorki. Before that, Perm and Molotovo were independent administrative units, divided by the ravine of the Yegoshikha River.
At the time of the development of the project, Perm had a rectangular planning structure. Its central part had 2 and 3-storeyed stone buildings.

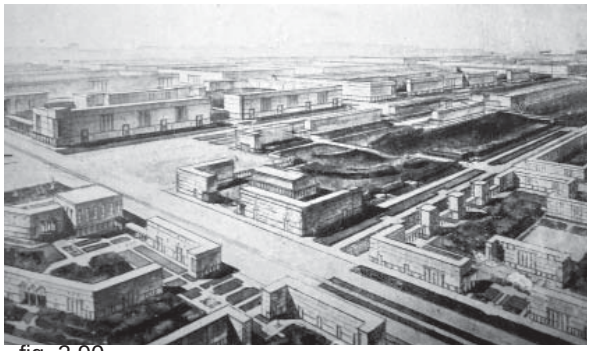


fig. 2.90

There were also a few 5 and 6-storeyed apartment buildings of the 1920s and 1930s. In contrast with it, Molotov consisted mainly of run down wooden houses, which were randomly located. There was a workers' settlement there, where in 1930-32 four blocks of 4-storeyed houses had been built.

"Starting the layout of these towns, designers had to find out to what extent administrative and planning isolation of them was expedient. They came to the conclusion that, from the planning point of view, the separation of the cities of Perm and Molotov would not be expedient in the future. [...] That is why, the idea of creating a single centralised city with a common administrative centre became the basis of planning.[78]

In the project, all major institutions of cultural and consumer services (theatres, hospitals, parks) were situated so as to service the residents of both Perm and Molotov. It was planned to build dams and bridges across the Yegoshihinsky ravine.
Under the project, a whole city had to be situated

fig. 2.91

on the high left bank of the river Kama. A highly ragged terrain abounding in ravines was a characteristic feature of that locality. To develop the city territory, sites to the south-west, south-east and east, with fewer ravines, were chosen. Under the project, the existing rectangular system had to be retained as far as possible, with radial-and-ring planning in certain parts of the city, where it was dictated by the features of the relief (fig. 2.90).
The combination of the above-mentioned planning methods achieved the optimum correspondence to the principles of a compact city. The project was successfully realised.

Gorodskiye Gorki

The construction of the city centre at Gorodskiye Gorki was proposed as early as 1929, in the project of Greater Perm. In 1930, within the framework of that project, Semyonov submitted a competitive project for planning the residential area of Perm (fig. 2.91).[79] The project solved three tasks: the merge of Perm and Motovilikha (Molotovo) that had become imminent long before that time; and creation of a new developing city and a large residential area at the growing production complex.
The site for the single city centre of Greater Perm was chosen at the main road that connected Perm to Motovilikha. The central group was formed by a city square that had a circular shape, public buildings, and development on both sides of the main road. The district centre of Gorodskiye Gorki was situated on a different main artery that connected the city to a recreational area in the south. It was formed by a wide boulevard with a group of buildings for cultural and consumer services.
Under the project, the inter-district thoroughfare divided Gorodskiye Gorki into two almost equal planning zones: on the southern side, the zone of capital development; and on the northern side – the zone of individual development. The Central boulevard, in its turn, divided the capital development into its eastern and western parts. In the eastern part, the development consisted of blocks of low-storeyed buildings; it was combined with individual cottage-type houses. The northern part of Gorodskiye Gorki was planned as the zone of individual residential houses with adjoining plots of land of different size. The main planning axes were distinguished by cottage development.
Semyonov created the layout of Gorodskiye Gorki according to the principles of a garden-city; in his project, we find division of the city into a number of zones with different types of development. He took into consideration local conditions, and worked on all the issues of the settlement development in detail; he differentiated the sizes of

fig. 2.92

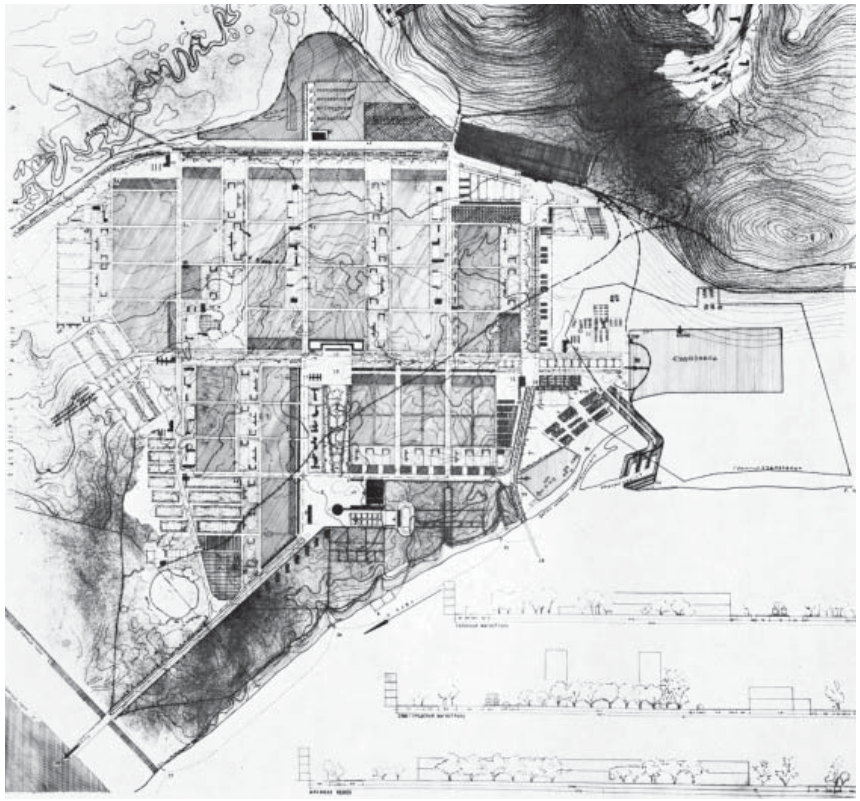
fig. 2.93

plots of land, determined the types of residential houses, the number of their storeys, their set back, and the extent to which the existing forest had to be cut down.

In 1932, in the process of developing the project of the Perm industrial hub, Meyer, together with the team of Standartgorproekt, devised the general layout of the "Na Gorkakh" sotsgorod with a population of 48 thousand (fig. 2.92).[80] The construction of the sotsgorod began as early as 1928, that is why Meyer's project had certain planning elements developed by Semyonov. Like Semyonov, Meyer considered Gorki as a link between Molotov and Perm. In Meyer's opinion, the location of the new district on a plateau, between the valleys of two tributaries of Kama, was a successful choice. The development of the sotsgorod began when the tramline Motovilikha-Perm II was laid down. The district centre of Gorki was located in the place where the main thoroughfare of the city, built along a meridian, and the tramline crossed. Such buildings as a circus for 3 thousand people, a large technical college, a kitchen-factory, and a group of public buildings formed the centre of the district. The comb of residential blocks of buildings was situated on both sides of the city thoroughfare (fig. 2.93). The southern border of the city was marked by a forest park – the future Park of Culture and Rest.

Meyer's project was partially realised. Residential blocks of buildings in the southern part as well as a number of public buildings, including a factory-kitchen and a technical college, were built. The developed part was called the "Rabochiy poselok" (Workers' settlement). The main planning ideas of the sotsgorod of Gorki were realised.

fig. 2.94



Nizhny-Kuryinsk

The project of the satellite-town of Nizhny-Kuryinsk was also developed by Hannes Meyer with the team of Standartgorproekt in 1932 (fig. 2.94).[81] Nizhne-Kuryinsk was an element of the Perm industrial region; it was located 18 km downstream of Kama, together with major industrial enterprises: a chemical plant and a factory that manufactured rayon fibres. The project was designed for a proposed growth of chemical production of up to 40 thousand working places, and a shipbuilding plant – of up to 20 thousand working places. Thus, the population of the sotsgorod was to become more than 230 thousand. In the general plan, the satellite-towny was located between those two enterprises. The residential area and industrial area were divided with protective green belts. In the west, on the side of the chemical production, the width of the protection belt reached 1.5-2 km; in the east, where the shipbuilding plant was situated, the strip was 400 m wide. To the north of the residential area, there were a railway station, with its area of warehouses, and small enterprises of food and light industries. The latter, by words of Meyer, were important "um durch diese Arbeiten die wirtschaftliche Unabhängigkeit der Frauen sicherzustellen."[82]

The residential area was divided into five districts, with 40 to 50 thousand inhabitants each. Each district had an autonomous system of servicing that included a trade centre, a post-office, a bank, a pharmacy, and a park. Blocks of buildings were situated in such a way that one side of each of them faced the main streets of the district, and the other one – school parks.

Udarnikov Street connected the administrative and cultural centres of Nizhny -Kuryinsk, to its green zones in the centre of the satellite-city. The Park of Culture and Rest was located on the bank of Kama, along the residential area. Transportation was organised in the form of a figure of eight that connected two main approaches to the industrial zones, the railway station, the centres of each district, the centre of the city and the Park of Culture and Rest. Thus, any important area and institution was accessible to the inhabitants of each block of buildings.

It is worth noting that later, the majority of enterprises were transferred to a different site, and only a part of the satellite-town was realised.

Greater Berezniki

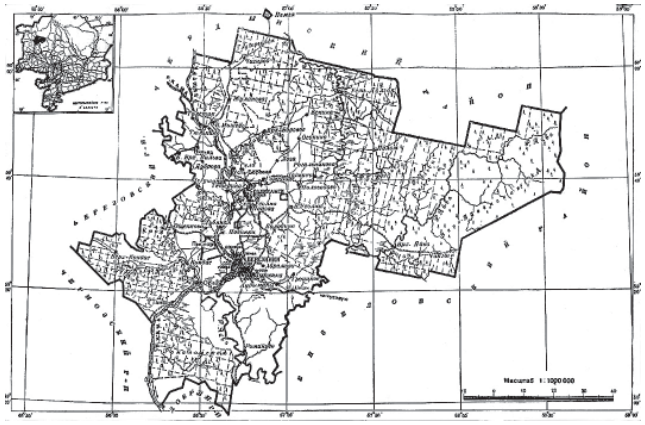


fig. 2.95
Bereznikovsky administrative subregion on the map of the Ural region, 1932

"The proximity of phosphorites in the upper reaches of Kama and Kizel coal, and the existence of an exclusively rich raw-material base in the area determine development of the Berezniki area along the following lines: a) development of the existing enterprises; b) development and establishment of the new enterprises that work on the waste products of the main chemical industry; and c) organisation of the new productions in the region that are based on local raw materials."
The Ural Soviet Encyclopaedia[83]

The river Kama territories, lying to the north of Perm, became one more stronghold of Soviet industry. Boundless forests and inexhaustible water resources, together with the abundance of mineral and power resources, became an optimal base for the establishment of an industrial complex. An industrial area that was established there was formed by the towns of Solikamsk, Berezniki, Kizel and the territories of all the north-west Urals; its population worked in the chemical, wood-chemical and wood-working industries (fig. 2.95).

The "giant of world chemistry" and the enterprises of the potassium industry that formed the hub of Greater Berezniki, occupied the leading position in the region. In 1937, Sverdloblproekt created the project for planning Greater Berezniki (fig. 2.96).[84] The project was needed, as at that time, the city of Berezniki consisted of individual settlements, the majority of which represented sporadically formed groups of temporary development around industrial enterprises; their population increased 10 times during the period of two five-year plans:

"Old settlements that formed the city of Berezniki, emerged as early as the XVI and XVII centuries on the basis of salt-works that belonged to the Stroganovs, Shuvalovs, Golitsinys and others; they played the role of colonies in tsarist Russia. The Soviet power transformed them into a major industrial centre for the chemical and potassium industries. Semi-dilapidated wooden huts surrounded a few merchants' and nobles mansions in the trade part of the cities of Usolye, Dedyukhino and others, with a huge ring. [...] At present, this poor panorama is changed into the ensemble of a newly-created socialist city with cultural and improved residential districts, new avenues, boulevards and squares."[85]

The left bank of the river Kama, in the area of Churtan, was chosen as the construction site for the new city. Greater Berezniki was formed by five regions: Churtan, the Second Potassium Mine, Central, South-east and Northern ones. The plan was based on the following conditions:

- Connection of enterprises of all the industrial regions to railways and waterways;
- Location of industries with harmful products and residential areas with due consideration of the prevailing winds; establishment of green sanitary protection zones;
- Organisation of the territories of industrial enterprises, taking into account the possibility of their extension;
- Location of residential areas within the radius

of half-hour accessibility (2-4 km) to working places;

The planning composition of the city was based on two mutually perpendicular axes: north-south and west-east. The city was situated along them in the form of a compact site (fig. 2.97). The main centre was located in a high, well-visible place, in the middle of the planning site. Public centres had buildings that serviced both the city and the districts, and the main streets were accented with 4-5-storeyed development. Large park zones were established in the regions of Churtan and Severny (North Region). On the whole, the city was designed as a system of ensembles (fig. 2.98).
For the period of the two first five-year plans, certain sites were developed and individual public buildings were erected in the regions of Churtan and the Potassium Mine. Designers included them into the general layout of Greater Berezniki, that is why we find linear development there. As far as the main part of blocks of buildings is concerned, they have development along the perimeter. It is of interest to note that the project used an avant-garde concept of zhilcombinats:

"As far as development in the territory of a block of buildings is concerned, dwellings are united into residential complexes there. Alongside the residential buildings, a number of structures of the public sector are envisaged in those blocks."[86]

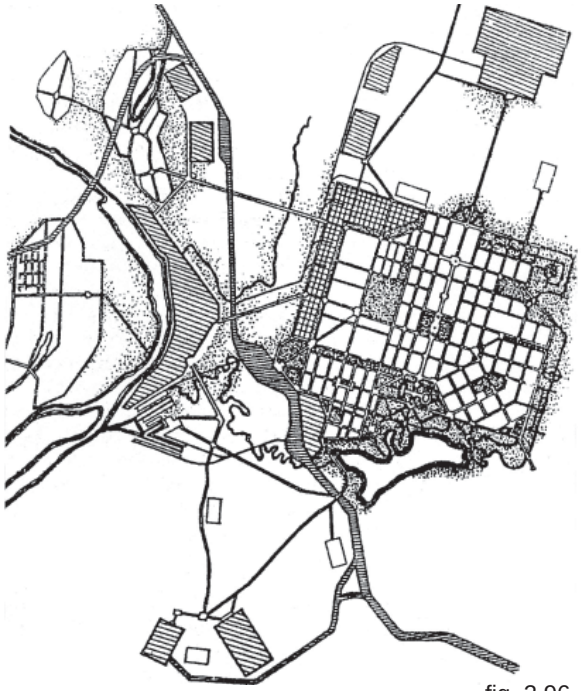


fig. 2.96

The project covered a 15 to 20-year period of city development. It also envisaged the reconstruction of the Kama-Pechera waterway, the construction of an industrial port and a civil airport.
Many ideas of the Greater Berezniki project have been realised.

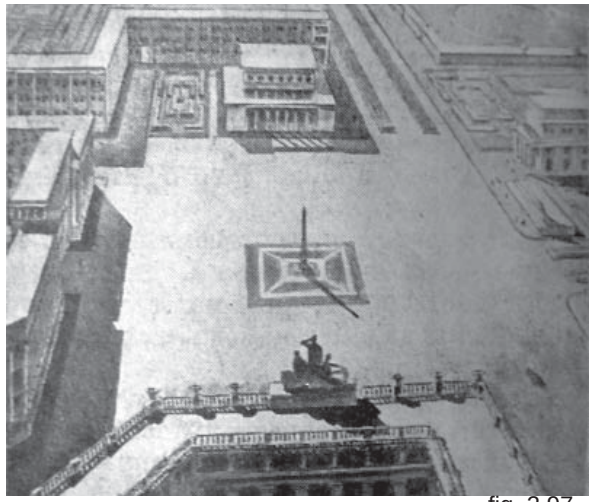


fig. 2.97

fig. 2.98

Summary of the second chapter

Let us sum up what has been discussed in this chapter. On the one hand, during the period of industrialisation, the Ural Region became a stronghold of the country. A great potential for its industrial development had been revealed, and Russian and foreign architects and designers were presented an excellent opportunity to try out new concepts in practice. On the other hand, the innovations had to take into consideration certain peculiarities of the historical development of the Urals that dictated their own rules to the new projects. As a result, designers could test whether the new theories were flexible enough and whether they could be adapted to the existing situation.

That means that not only was the Urals a proving ground for the realisation of avant-garde theories, but it also gave the picture of their viability both in realisation as such and in co-existence with other systems. Let us recall again the specific milestones of the development of the Ural town-planning.

Pre-revolutionary period:

- The Urals has a long-standing town-planning tradition rooted in ancient times
- After the middle of the XVI century, in the process of the colonisation of the Urals by the Russians, construction of trade-and-administrative cities and tsarist *ostrogi* (tsar's palisades) began – the system of fortress-cities was created.
- In the XVIII century, in the process of industrial development of the Urals, a new type of settlement around "Peter's" factories took shape – factory-town. It represented not only the new town-planning principles, but also types of buildings and structures that were new to Russia. Factory-towns were built according to general layouts that used three main planning principles: rectangular, radial and combinations which included both types.
- General plans made at the beginning of the XIX century determined development of many plant settlements and industrial cities of the Urals in the course of the second half of the XIX century. By the beginning of the XX century, "regular" general plans had been almost completely realised in old cities.

Soviet period, the first half of the 1930s:

- During the period of industrialisation, the functional-and-typological nature of the Ural cities began to change. The cities turned from administrative, economic and cultural centres of the region that they had become at the end of the XIX century into industrial centres on the state scale. In 1920s-30s, the Ural cities that we discussed became the centres of major town-forming bases of the country: the Ural-and-Kuznetsk industrial complex (Chelyabinsk, Nizhny Tagil, Magnitogorsk); Orsk-and-Khalilovski industrial region (Orsk, Mednogorsk); Kama-and-Pechera waterway (Perm, Berezniki). The establishment of the Ural-and-Kuznetsk industrial complex initiated the development of a qualitatively new system of settlement and a further growth of cities around industrial enterprises.
- The first five-year plan for town planning in the Urals was marked by innovative ideas and avant-garde theories. Projects for the Ural cities used the main progressive town-planning concepts of the end of the XIX and the beginning of the XX century, with due consideration of regional conditions. Many of these projects have been realised.
- When a system of settling of an economic region had been established, planning was carried out at three levels: regional planning, hub planning, and the planning of individual populated areas. Designers paid special attention to the issues of hub planning. Establishment of architectural-and-planning structures of the cit-

ies on the basis of the "Greater cities'" concept is a characteristic feature of the period under consideration. The concept is very important for the practice of town-planning in the Urals, as it combined an all-embracing solution for settlement tasks at regional, city and district levels; development of a group type of an architectural-and-planning structure, and the use of functional zoning through all the planning levels.

- Two main types of settling systems were developed: centralised and group systems. The group system became the main method for locating the elements of industrial hubs in the Urals, as due to the Urals specific nature, many industrial hubs were established on the basis of old industrial centres. Such forms of the group settling system as dispersed (federative) – Chelyabinsk, Nizhny Tagil, Berezniki; broken linear – Perm, Kamensk-Uralski, Orsk, Ufa; and continuous linear – Mednogorsk, Magnitogorsk, became the leading ones
- In the system of the city, sotsgorod became the main element of settling. A compact and regular planning structure is the most typical of the Ural sotsgorod (Novy Orsk, the settlement of ChTZ in Chelyabinsk, and the settlement of Vagonstroi in Nizhny Tagil). Less typical was a linear sotsgorod (the settlements of ChEMK and ChGRES-1 in Chelyabinsk). The idea of a garden-city still existed: in the Urals, a few "dormitory" or "sleeping" low-storeyed settlements (without any public buildings, enterprises or offices) for the most high-ranking persons, were built (the settlement of Klyuchiki in Nizhny Tagil, and the settlement for the Bakal administrative -and-technical personnel).
- Establishment of industrial-and-residential complexes and city blocks of buildings took place according to the principles of an all-embracing solution of planning and development; the new treatment of architectural-and-spatial and functional organisation of a block of buildings was practiced. To organise new city blocks of buildings, a comb development was widely used. Organisation of a block of buildings on a grand scale was another popular – monumental – method.
- When making the first projects for the Ural industry, Soviet architects worked along the avant-garde lines. Even the aim at the development of classical heritage did not have much influence on the industrial branch of architecture.
- In the first half of the 1930s, foreign specialists took an active part in the work on architectural and town-planning projects.
- At the stage of realisation of town-planning projects, certain difficulties arose. As often as not, the initial data of projects were changed due to the priority of industrial construction and shortage of funds for social and cultural conditions of life. The violation of zoning regulations made the subsequent development of cities as well as the establishment of the transportation and engineering systems difficult. The aim at having the shortest possible distance between housing and industries and lack of an accurate forecast for the development of industrial enterprises led to an insufficient size of sanitary protection zones. Later, all these created an unfavourable ecological situation in many Ural cities (Nizhny Tagil, Magnitogorsk).
- Ural construction sites also became laboratories for the new construction technologies and materials. Construction materials that were in short supply were successfully substituted for local ones. An effort was made to solve housing issues with the help of prefabricated elements and large-block house building.

Soviet period, the second half of the 1930s:

- In the years of the second and third five-year

plans, the issue of the nature and quality of city construction was raised again. It was undoubtedly the change of aesthetical direction and, consequently, a moving away from the avant-garde ideas in architecture and town building that caused it.

- During this period, less attention was paid to regional planning. General plans of the second half of the 1930s were based on the systems of settling of "Greater cities". Design was carried out on the level of a city and its components. In the desire to improve town-building compositions, functional-and-planning issues were sometimes moved to the background.
- From the middle of the 1930s, neoclassical ensembles of the main city prospects and squares began to emerge; their development continued up to the end of the period of Stalin's empire style of the 1950s.
- The directives for raising the quality of town building also referred to housing construction.
- Builders turned again to the issues of prefabricated-industrial house building: large-block and frame building as well as pre-cast reinforced concrete.

Notes Chapter II

1 Tvardovsky, A., the poem *Za Dalyu – Dal'* (Expanse after Expanse), Moscow, 1962

2 From author's notes of a course of lectures on history of architecture given by Prof. A. Yu. Kaptikov at the Ural Academy of Architecture and Arts in 1993-94; Starikov, A., "Architectura" (Architecture), *Uralskaya Istoricheskaya Entsiklopediya* (Ural Historic Encyclopaedia), Ekaterinburg, 2000, http://www.ihist.uran.ru/index/ru/ency/encyclopaedia,%C0,100.html

3 The data was taken from: Lakhtin, V., *Systema Rasselenia i Arkhitekturno-Planirovochnaya Structura Gorodov Urala* (The System of Settling and Architectural-and-Planning Structure of the Cities of the Urals), Moscow, 1977, p. 17

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CHAPTER III

Sverdlovsk in the Years of Big Construction

From the very beginning, Ekaterinburg was conceived of as an industrial centre. It was born of the necessity for metal and to strengthen the national defence system under Peter the Great. Under Stalin, Ekaterinburg underwent a similarly dramatic transformation, a virtual rebirth of the city. At that time Ekaterinburg also achieved important administrative status that allowed the transformation to reach a high level of implementation: the architecture infrastructure built there was permanent rather than temporary. For these reasons the story of Ekaterinburg-Sverdlovsk deserves a separate chapter. Here we shall focus on the topics of town-planning and architecture, as well as new typologies and technologies. In short, Sverdlovsk gives us a complete picture of the Ural avant-garde.

Planning under Conditions of a Building Boom

"It should be noted that we were late with the planning of the Greater Sverdlovsk. Owing to that, the shortcomings that occurred during the construction of the city are not a surprise, as they are undoubtedly, and in the first place, a natural extension of the absence of a layout for the Greater City of Sverdlovsk. On the other hand, it would have been absurd if Gorsovet had held back the rapidly growing city construction, due to the absence of a plan"
N. Labzenkov [1]

Similar to other Ural cities, such as Nizhny Tagil, Kamensk, Bogoslovsk, a metallurgical plant formed the historical core in Ekaterinburg as well. The plant and settlement behind the fortress walls were built in 1723 by the order of Peter the Great.

Building of a new city-plant went according to a layout designed on the base of German, Dutch and French fortification practices. The town-planning techniques borrowed from Western Europe and tested in building St. Petersburg found ample application there. The result was a unique combination of progressive achievements of science and

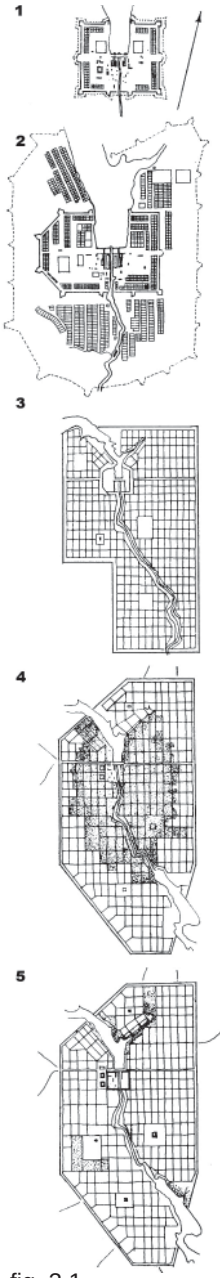
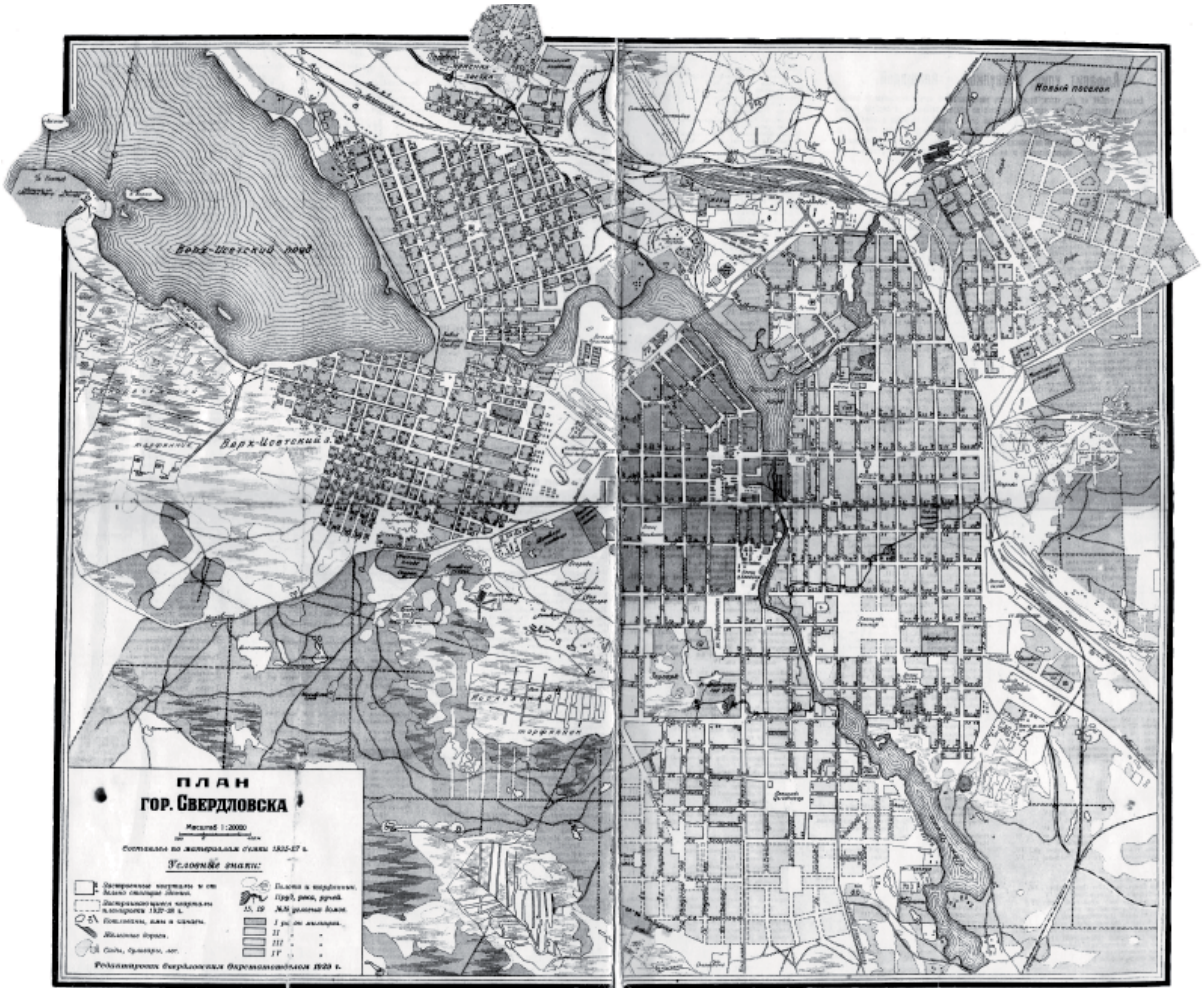


fig. 3.1

fig. 3.2



technology of the time (fig. 3.1).

"In Western Europe, due to the increasing guns power, medieval stone fortresses with towers became ineffective; they were replaced with regularly-shaped (of regular geometric outline) earthen ramparts with bastions at corners and entrances. However, the fortress-city of Ekaterinburg differed radically from its European and Russian prototypes in that a gigantic (for those times) metallurgical plant came to be the city hub. Ekaterinburg was unlike other fortress-cities also because it had the features characteristic of administrative centres: besides regular planning, there were spacious squares with churches, and representative civil buildings. Such a unique combination of industrial and urban features gives us the right to call Ekaterinburg one of the first industrial cities in the history of world culture."[2]

The 20s-30s of the 20th century were the period that had most strongly influenced the Ekaterinburg city layout. In 1923, when the Ural administrative region was founded, Ekaterinburg was proclaimed its capital. In 1924, the city was renamed Sverdlovsk, after the resolution passed at the congress of the Communist (Bolshevik) Party of the Soviet Union in 1925. The same resolution ordered to make Sverdlovsk the largest administrative and economic centre of the Soviet Country. So, large-scale construction works unfolded there in the years of the first, the second and the third five-year plan periods. Since the new city of Sverdlovsk was contemplated as the heart of a big industrial organism, need was felt for an essentially new city planning project to transform the provincial merchant's image of the city into the one of a capital city – progressive-minded and based on intensive industrial development.
Construction activities within the industrialization

program could not begin in Sverdlovsk immediately after the revolution. The city, like other Ural cities, lived through a period of recession caused by the post-war situation. In their first reorganization steps, the new administration limited itself to renaming the main streets "in honour of the leaders of the proletarian revolution" in 1919. The city needed to be put in order first.

"The city revival began immediately after Sverdlovsk was released from the rule of the White Guard. On 7 March, 1920, an all-Ural subbotnik (day of voluntary labour on Saturday) took place as the first Ural workers' and peasants' attack on ruin as the main enemy," wrote the papers of that time."[3]

The "attack" tactics in restoring the city, beside inherent dynamism, displayed its negative aspects as well, such as disorder and lack of coordination. The wide-range building boom did not mean quality either. A few more years had to pass before the process might go into a phase of progressive planned development.

The official beginning of the process of organized construction dates back to 1924. Engineer-architect N. Boino-Rodzevich and her project team commenced than the first planning works in different parts of the city. Construction in Sverdlovsk of a number of large industrial enterprises, including such a giant plant as Uralmash and an Electromechanical combine (in the primal phase), concentration of educational and design institutions, along with other factors, caused active inflow of the population and development of new territories (fig. 3.2). These factors necessitated working out a new city layout, which in view of the task of creating an image of a "capital city" of the second coal-and-metallurgical base of the Soviet country received the name of "the Greater Sverdlovsk layout."

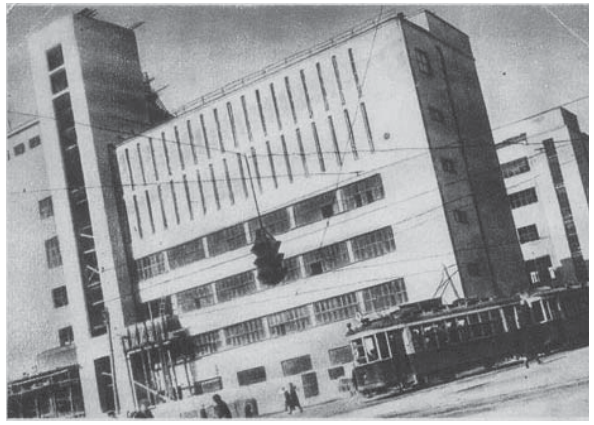
In that period, the modernist architecture had an official status. The majority of public buildings in Sverdlovsk were erected to avant-garde principles. For example the program of capital housing construction brought the six "Gorsovet Houses" designed as zhilkombinats; the practices of building housing complexes were broadly adopted.

The new Sverdlovsk layout structure was organized as a network of reference sites in the central part and industrial enterprises, around which administrative, residential, and public-and cultural complexes and recreation areas concentrated. Reconstruction of the centre and development of new industrial areas went with the use of experimental architectural and town-planning units. Among the typological novelties implemented in the Greater Sverdlovsk construction were:

- Sotsgorods – such as Uralmash (Ural Heavy Machinery plant), Elmash (Electric Machines Engineering plant), and others;
- "Blocks" and "Houses" – housing complexes built and organized for residents belonging to certain professional groups: Gorodok Chekistov (Security Officers' Block), VTUZgorodok (Technical Educational Institutions District), Medgorodok (Medical Institutions District), Gorodok Militsii (Militia Block), Gorsovet Houses (City Soviet), Specialists' Houses, Gosprom (Industrial Engineering) Houses, etc.;
- "Houses" – public and servicing institutions: Offices House, Communications House, Press House, etc.;
- as well as sports complexes, parks of culture and rest, kitchen-factories, clubs and some engineering structures;

The named reference sites were linked with communication lines and roads making the city canvas. The main streets played the role of the main city development axes. The administrative, public and housing complexes, as well as stand-along build-

fig. 3.3



ings became reference points for such axes. So, the EW axis was traced between VTUZgorodok in the east and Medgorodok in the west, while the NS axis was supposed to pass between the Dom Svyazi (Communication house – central post office) (fig. 3.3) (south), Central railway station and the Pervoy Pyatiletki square (north). Even though this line has never been implemented, for the location of the Uralmash plant territory made it impossible, the central avenue of Uralmash, Ordzhonikidze avenue, was laid on the continuation of the axis of Tolmachyova street. Special attention was given to rebuilding the central part of the city, particularly its main avenue.

It should be noted that active development of Sverdlovsk also went according to programs other than the one's from the administration. Private initiative played a certain role in new territories development. Multiple housing construction cooperatives appearing in the city started building compact housing colonies to orders of different enterprises and institutions. The construction of these colonies went along with working out of the city layout. So, Oktyabrsky urban settlement appeared in the northern city outskirts, in the east rose urban settlements Novyi and Krasnaya Zvezda, etc. All of them represented the garden city concept. They were regularly planned, though were definitely inferior to the former in the availability and level of services and cultural and community facilities. Buildings in such urban settlements were usually low-rise, wooden – mainly cottages and barrack-type houses

Since 1929, the first year of the first five-year plan, elaboration of the Greater Sverdlovsk layout began. The first variant of the Greater Sverdlovsk layout was completed in 1930 by workers of the Ural oblast design-and-planning bureau, with the participation, among others of architects S. Dombrovsky, engineer-architect N. Boino-Rodzevich, and engineer V. Stepanov (fig. 3.4). In this layout an attempt was made to coordinate civil and industrial construction activities, which in the majority of cases went chaotically. The authors tried to resolve the problem of "plant sites distribution as a guide to organizing the entire of the future population of Sverdlovsk."[4] They saw Sverdlovsk as an "organized city-combine," formed with the use of the above typological units. The layout was notable for its extensive character: it provided for increasing the territory from 14,000 to 100,000 hectares, arranging isolated sotsgorods around the old city centre (fig. 3.5). Already at the stage of a sketch, an attempt was made to use city-development methods to unite three major parts of the city, which later merged in one central district. A special drawing was made of the territories of VIZ, old Ekaterinburg and future VTUZgorodok, in which they communicated with each other through a modernized and partly newly traced rectangular grid of streets. Population was not expected to exceed 770,000 people. This variant lacked sufficient feasibility study.

The drawbacks of the latter layout were taken into account, and on its base an improved version appeared. In fact, real work on the Greater Sverdlovsk layout proper began after publication of Ordinance of the All-Russian Central Executive Committee concerning Sverdlovsk housing estate of 30 May 1931. In November 1933, the design team of Uralgiprogor led by S. Dombrovsky, presented documentation of a new layout with a more compact scheme. Later, the authors themselves confirmed that, like in the case of draft variant, the last scheme "lacked appropriate construction surveying materials, and that had brought about

fig. 3.4

fig. 3.5

fig. 3.6

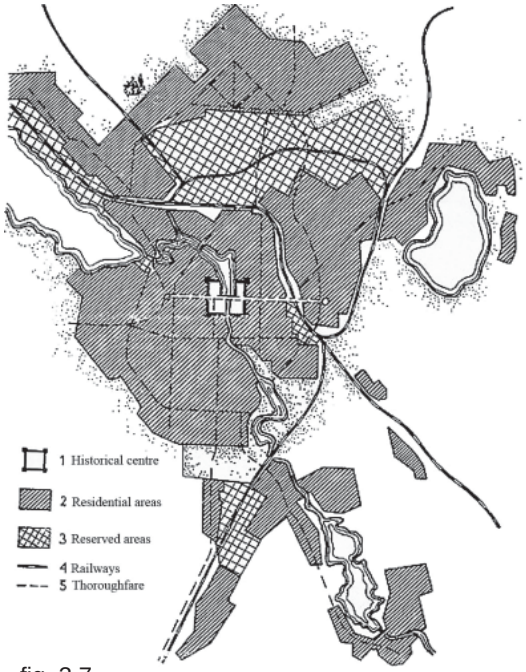


fig. 3.7

gigantomania in city territories development planning and city housing colonies design."[5] The plan received general approval of the Science Board of Narkomkhoz RSFSR (Committee for National Economy), with recommendations to further elaboration of some of its parts.

Works on creation of Greater Sverdlovsk, which were carried out mainly in accordance with the original "desurbanist" variant, were discontinued in 1934. It was in that period that the vast Ural Region failed to keep its positions, and split to several oblasts, which for Sverdlovsk meant loss of the privileges of an administrative and economic centre of a giant region, accordingly with construction financing cut-down. Many civil and public construction projects, among them the House of Industry, the House of Defence, the Kitchen factory, were suspended.

In 1937, next Sverdlovsk layout was proposed.[6] It was more precise in determining spheres of industry, establishing industrial and residential zones; it envisaged moving enterprises from residential areas and communicating districts with the city centre (fig. 3.6). The area between the railway station and the centre and the Gorky embankment were proposed as the first stage of the city centre reconstruction. Narkomkhoz RSFSR declined this variant as well.

Further layout elaboration was assigned to the design group of Leningrad Institute of city design Giprogor led by engineer V. Yakovlev. In 1939, the city draft layout was completed.[7] This time, the Narkomkhoz planning department accepted the proposed solution, and forwarded the Sverdlovsk layout, with some corrections and alterations, for approval to the SNK RSFSR (Council of People's Commissars). The main target set by general scheme of development designed for 15 years was resolving the problems of the city built in the period of rebuilding and big construction (fig. 3.7). "By the end of this term, Sverdlovsk as a city of significant organizational, economic and political importance, the centre of the Industrial Urals, will have a population of 720 thousand people." In the period of the first and second five-years plans, the specific features of Sverdlovsk as a big industrial centre became most clear; however, it still lacked sufficient communication between the districts and the city centre. The general scheme put forth a program of uniting isolated city parts in one whole through a grid of new streets with city transport, without radical rearrangement of the available streets grid. The scheme also envisaged establishing two principal compositional axes of the city: the Lenina avenue and the Iset river flood-lands, as well as the central sites – squares, with special attention being given to the 1905 square, the Parizhskoy Communy (Paris Commune) square, the Uralskikh Communarov (Ural Communarians) square, the square in front of the UPI (Ural Polytechnical Institute), and the Narodnoi Mesti (People's Vengeance) square. The war that broke out in 1941 suspended this project implementation.

Perspectives of the Greater Sverdlovsk

"During 1929-1930s hundreds of buildings arose in the city. The dynamic construction started simultaneously in the several districts. Due to the dearth of dwellings, construction took place on sites that required little or no demolition of the old Ekaterinburg shacks. Recognition must be given the builders as the majority of buildings were erected in the centre. A view from above shows most obviously that all the significant buildings are located in the strip of blocks between Malysheva street and Pervomaiskaya street. Lenina avenue became the core of the new city centre structure."
P. Volodin[8]

The new status of Sverdlovsk as a capital city opened promising perspectives for creating the city an image appropriate for a capital. Within the scope of this program, All-Union competitions were organized one after the other. Architects were offered a broad scale of activity for application of all kind of innovations in the field of administrative and public buildings construction.

For group OSA this was an opportunity to test in practice the functional method as adapted to local conditions. Ilya Golosov, who did not belong to the group of constructivists[9], in some period of his activity, formally investigated the aesthetic capabilities of this style. He designed several buildings in modernist shapes for Sverdlovsk.

However, the image of tomorrow's Sverdlovsk was not created by Moscow architects only. An important part played a group of graduates of the St. Petersburg Arts Academy: I. Antonov, G. Golubev, S. Dombrovsky, P. Oransky, V. Sokolov. They came to work in Sverdlovsk as formed professionals and delivered the most fruitful creative contribution. It may be said without exaggeration that their projects virtually determined the modernist picture of Sverdlovsk.

Local architects competed with them successfully. A bunch of reputable professionals, such us: S. Dombrovsky, G, Valenkov, E. Korotkov, G. Golubev – one by one came under the standard of the modernity. K. Babykin, a prominent figure in Ekaterinburg's architectural community, did not adhere to any architectural style, but he successfully used formal elements of new architecture in some of his creations.

Another source of new ideas were the graduates of the Siberian Technical Institute in Tomsk taking an active part in architectural life of Sverdlovsk. They showed great enthusiasm in relation to the ideas and methods of constructivists, and even initiated creation of the Ural section of OSA.

Last but not least, the foreign architects also took part in architectural life of the Ural's capital. Bela Scheffler, a graduate of Bauhaus, worked in the architectural office of sotsgorod Uralmash. American Abraham Luline of New-York was employed in 1935 by the Steelbridge Construction Trust of Sverdlovsk. His compatriot Louis Harry Friedheim of New-York was employed by the Sverdlovsk Gorsovet.[10]

The program of realization of the Greater Sverdlovsk project envisaged great changes in the centre of the city, with emphasis on its main street, Lenina avenue. The preparatory period of the Lenina avenue reconstruction began from the first days of establishing Soviet power – almost ten years before the "Greater Sverdlovsk" construction commenced. Firstly, the Bolsheviks marked the points of application of potential efforts. They were the squares lined along the main avenue: Drovyanaya (east), Yekaterininskaya and Kafedralnaya (centre), Verkh-Isetskaya (west). The new names given to the squares demonstrated the Bolsheviks' strategic interest in them. Later, several objects in the squares coming in dissonance with the new order ideology were also demolished.


fig. 3.8


fig. 3.9


fig. 3.10

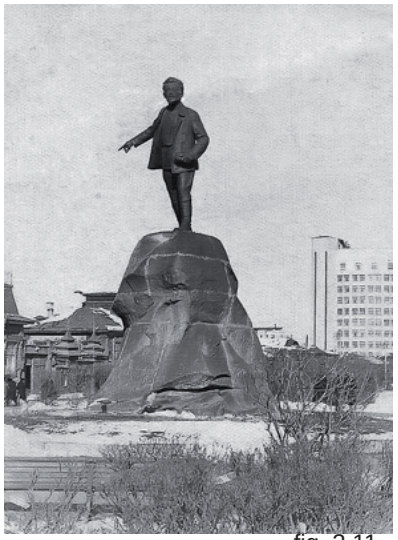


fig. 3.11

A symbolic beginning to socialist reforms in Ekaterinburg was laid already in spring 1917, with removal of the monument to Alexander II cast in iron from its tall pedestal in the main Kafedralnaya square. On 6 November, 1919, the streets and squares in the city centre received new names: Glavny avenue (Main) became Lenina avenue; Kafedralnaya, the 1905 square; Yekaterininskaya, the Truda (Labor) square; Verkh-Isetskaya, the Uralskikh Communarov square; Drovyanaya, the Parizhskoy Communy square. The next important step followed on 1 May, 1920. On that day, revolutionary monuments appeared in the four squares: the monument to Paris Communitarians rose in the Parizhskoy Communy square; the "Great Smith of Peace," in the Truda square; the "Released Labor," occupied the vacant czar's pedestal in the 1905 square; the "Liberated mankind" appeared over the common grave of soldiers of the revolution in the Uralskikh Communarov square. The last two monuments designed by sculptor Stepan Erzya were distinguished for audacity of creative approach. The "Liberated Labor" was presented by the author in a marble statue of a naked worker unbending with relief in all his six-meter height (fig. 3.8). The allegory of the "Liberated Mankind" was implemented in a statue of a woman cast in plaster, also nude, lying on a large painted metal globe with a flying banner in her hand (fig. 3.9). The common people's level of artistic perception, unfortunately, did not allow them to understand adequately the metaphoric meaning of nude body compositions: they met the monuments with animosity. The one in the city central square was treated with most scorn: it was scornfully nicknamed "bare Van'ka" and suffered from multiple acts of vandalism.

In 1926, when the newly renamed city development started gradually to turn to an organized process, the first revolutionary monuments were removed from the squares: room was wanted for other purposes. A building of Sverdlovsk Oblispolkom was supposed to occupy the highest point of the Truda square. The pyramidal obelisk with sculptor I. Kambarov's plaster bas-reliefs commemorating Paris communitarians was to be replaced by a monument to Yakov Sverdlov. The announced competition for monument projects attracted such celebrated architects as N. Trotsky, P. Rudnev and I. Fomin (fig. 3.10). Work by Leningrad sculptor M. Kharlamov won, and the monument to "comrade Andrey" was opened on 15 July 1927 (fig. 3.11).

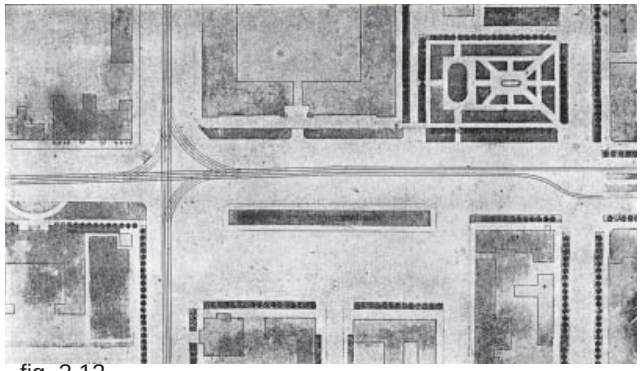


fig. 3.12

fig. 3.13

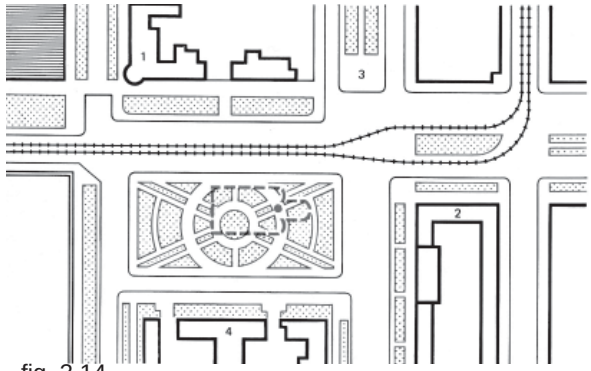


fig. 3.14

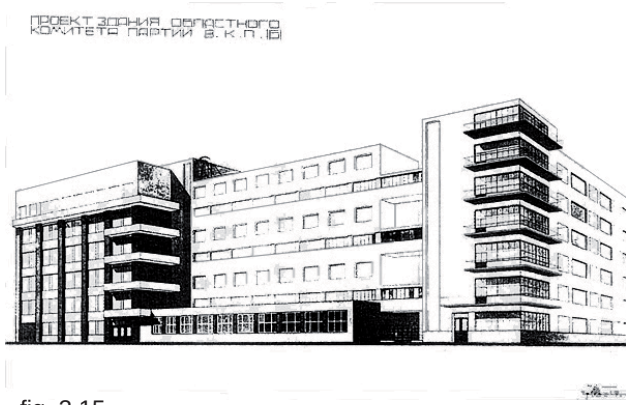


fig. 3.15

fig. 3.16

fig. 3.17

The time of global changes in the Lenina avenue falled on the period of late 20s, with the beginning of implementation of the "Greater Sverdlovsk" plan. The two-section complex of Medgorodok (Medical institutions district) crowned the western end of the avenue, the Uralskikh Communarov square. On the other end, the city's main street stretched further, beyond the boundary of the Vostochnaya (Eastern) street, and in 1929, construction of VTUZgorodok (Technical higher educational establishments district) began at its eastern end, with the main building of the Ural Polytechnical Institute placed right on the street axis.

Intensive changes went in the Truda and 1905 squares. Before the revolution, they were named after the churches standing in them: on the western side of the city lake stood the Cathedral Church, on the eastern side, the St. Catherine Church. In 1930, both churches were pulled down. Work began on creating new compositional accents of squares.

The unfinished stone Gostiny Dvor (Arcades) complex on the southern side of the 1905 (main) square (fig. 3.12) served as the ground floor basis for the Gorsovet (City council) building. The new city hall, constructed after the project of A. Makarov (1928), in manifested the new architecture (fig. 3.13). The ground floor accommodated shops, while the Gorsovet occupied the floors above.

In a similar way, buildings on the southern edge of the Truda square were rebuilt (fig. 3.14) – it was there that, in the course of construction, the complex of buildings of the Sverdlovsk Oblispolcom replaced several stone estates. In the competition, the project of architect S. Zakharov (1931) was finally chosen (fig. 3.15); his project proposals, however, displayed the influence of the Oblispolcom variant by Ya. Raikh, awarded back in 1927.

Global remaking plans in the central part of the city envisaged broad-scale demolition of the existing estates, which meant loss of a considerable part of the city historical and cultural fund. In some cases, however, "pre-revolutionary heritage" found productive application in reconstruction. Some public buildings underwent rebuilding, or their building was completed in new forms. For example, construction of the Tovarnaya Birzha (stock exchange building) by architect K. Babykin had begun back in 1916, and was completed only in 1925 (fig. 3.16). Traditional architecture was practiced in post-revolutionary Ekaterinburg as well, but it was mainly resorted to in refurbishment of the buildings erected shortly before the change of power, or completion of abandoned projects. Examples of such practice may be found in the Peasant's House, rebuilt from the former modern-style building and opened one year of Lenin's death; or the Delovoy Club (business club) building (today, the Philharmonic Society building), whose construction began in 1915 after the project of K. Polkov and completed in 1926 after the project of G. Valenkov and E. Korotkov. In the last case, the authors used the compositional techniques of neoclassicism in the final variant (fig. 3.17).

The scope of ambitions of the new capital city of Ural industry exceeded the capabilities of proposed measures. The "Greater" city wanted a big administrative and business centre implementing the latest achievements in architectural typology. The Parizhskoy Communy square was selected as a site for implementing the conceived ensemble.

The Parizhskoy Communy Square

Before we start with this topic, let us make a little case study. In Ginzburg's book *Zhilishche* the author included a story notable for some vague rendering. It is a story of a project described in the chapter on the problems of socialist settlement.[11] The author discloses the basic principles of the

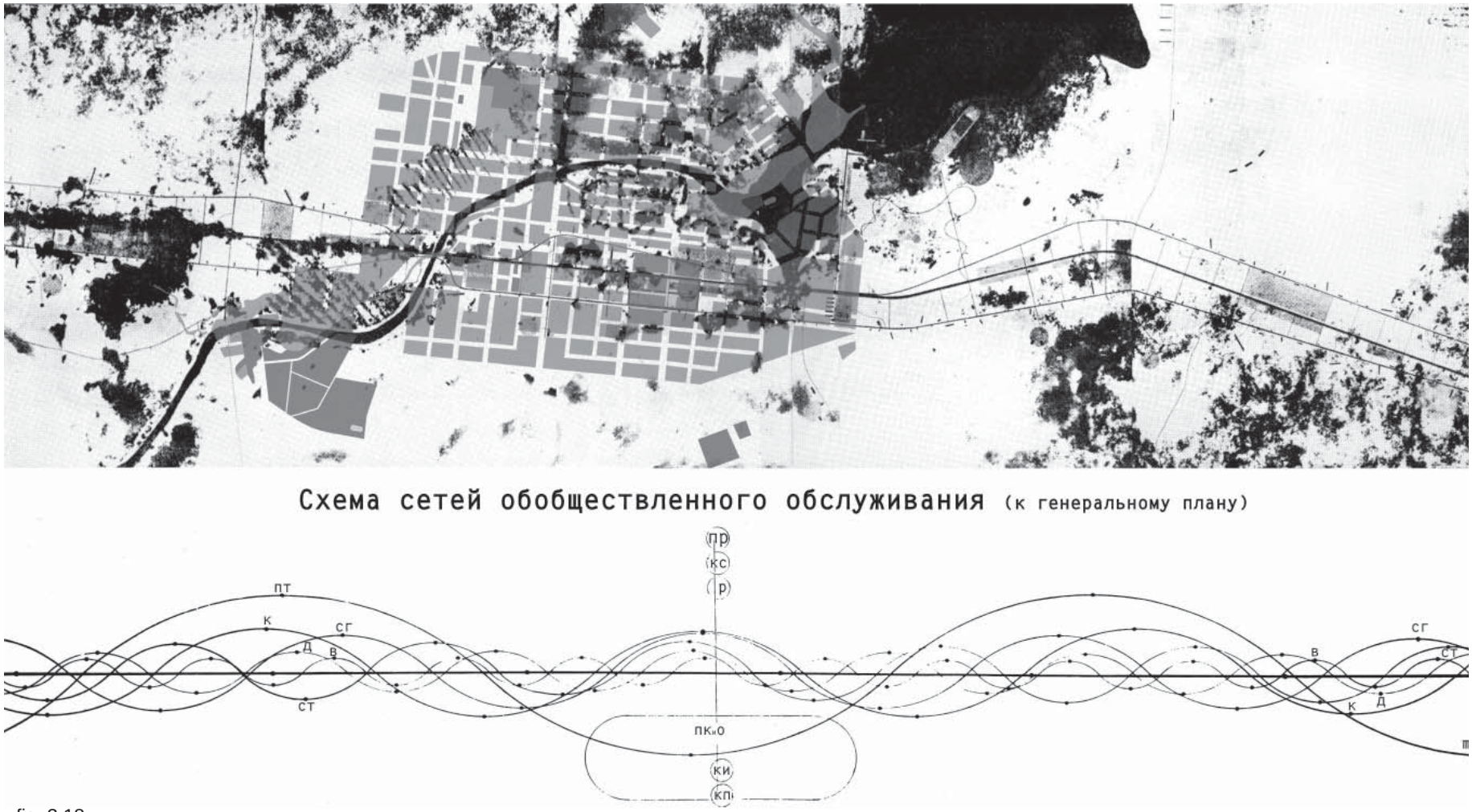


Схема сетей обобществленного обслуживания (к генеральному плану)
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fig. 3.18

"new treatment of the dwelling problem" worked out by Ginzburg with colleagues in the period of their research work in the section of settlement of Gosplan RSFSR (State Planning Committee) in 1929-1930. Projects "Magnitogorye" and "The Green City" are described by Ginzburg in detail as variants of desurbanizm concepts application. In the illustrative supplement to this chapter the author gives one more example marked as "Settlement strip layout. Arbitrary geographical site." The anonymity of such a name looks artificial against the background of other clearly defined projects. The layout scheme shows a settlement strip along an arterial road, with hedges of roadside plants on both sides.

"Park strips up to 150 m deep, depending on the terrain, stretch on both sides, presenting an organized part of a natural site crossed by the road. All public services institutions are located in this strip (see service networks scheme). Houses of various types stand behind the vegetation strip."

The shown natural zone is distinguished for an expressive landscape. A narrow winding river crosses the depicted patch of land with rises of the relief convenient for putting a dam upstream. Despite rigid attachment to the road, Ginzburg's scheme perceptively reacts to the presence of a river. This interconnection shows most clearly in the central part of the plan, where the dam forms a lake. Below the map, in orthogonal projection, is given a scheme of services networks, with a legend showing the place of a large public-recreation zone:

"The road passes by a Park of culture and rest located in the best, in terms of natural conditions, area. The park houses a club, an auditorium, a cinema, rooms for circles for public and technical-research activities, with laboratories, a sports base, a water station, libraries, samples displays, etc."[12]

The outline of the lake, and the curves of the river downstream beak a strong semblance of the outline of the Sverdlovsk city dam on the Iset.[13] The effect of similarity is not lost even after Ginzburg's map was turned clockwise by an almost right angle. In order to verify this hypothesis, the map of Sverdlovsk of approximately the same period was superimposed on Ginzburg's map, with subsequent rotation and scaling in compliance with the scheme (fig. 3.18). The obtained result confirmed the supposition completely. Without doubt, the "arbitrary geographical site" was the floodplain of river Iset, and the settlement strip central part was based on the eastern part of the Sverdlovsk centre. River outlines coincidence was relatively poor, while the outlines of the strip proper and the internal layout of the park zone repeat quite clearly the Sverdlovsk streets grid. Ginzburg's arterial road "linking the objects of industrial and economic application" is, in fact, the one linking with a solid line (with negligible shifts) the Turgeneva, Krasnoarmeiskaya and Belinskogo streets. The Turgeneva street ends at the Voznesenskaya (Ascension) Church complex and does not continue further to the north. But the Belinskogo street ensures direct communication with the present districts of Uktus and Vtorchermet. Accordingly, at the point where the Belinskogo street crosses the river, the river Iset and the river in Ginzburg's map get superimposed. Here, in the vicinity of the bridge in Belinskogo street, near the park zone, develops a "waistline" separating the "real" central part of the strip and the "abstract" one across the river. The external border of the settlement strip lying away from the river passes along the Lunacharskogo street; in a similar way, Ginzburg included in his scheme the existing transit road to the north, leading to Uralmash and Elmash districts. The internal border of the strip unites with a schematic curve the Karla Libknekhta, Rosa Lux-

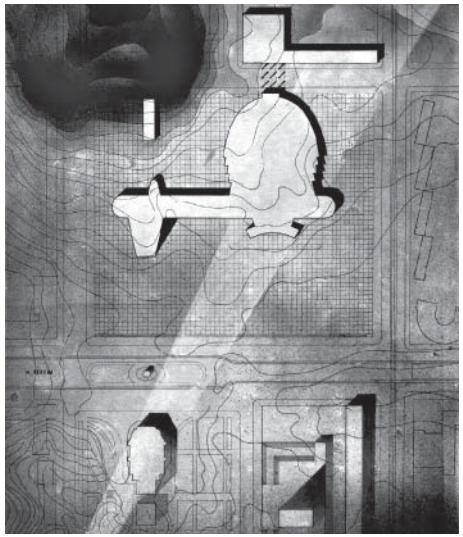


fig. 3.19

embourg and Belinskogo streets.

In what concerns transverse layout of the park zone, the most accurate coincidences of the scheme with the map are observed along the Kuibysheva, Lenina and Azina streets; the streets between them are also mapped, with without observing the proportions. The section of the scheme coinciding with the Kuibysheva street is limited with the park strip an fails to reach the river bank. However, at the point where the Malysheva street crosses the Iset, the outlines of the two rivers again coincide. On the contrary, the section beginning along the Azina street is longer and terminates at the cape on the lake. The lake on Ginzburg's map considerably exceeds in size the Sverdlovsk city lake, however, parallels may be found even there: the city lake spit, as well as the then non-existing Dynamo stadium are shown in Gunzburg's map in a transformed shape.

But the most notable result of superimposing the two maps is found in the fact that the site in the "Park of culture and rest," indicated by Ginzburg as allocated for building a club and a movie theatre, coincides with the location of the Parizhskoy Communy square, and even the point on the scheme denoting a movie theatre is marked exactly at the place where construction of the Big Synthetic Theatre was planned.

Thus we find sufficient coincidence making unquestionable the relationship between Ginzburg's plan and the reconstruction layout of the centre of Sverdlovsk. It remains unclear why M. Ginzburg had deliberately coded in his desurbanist project his interest in the Greater Sverdlovsk layout, within the scope of which he had designed several objects. It may be that the object he had built in Sverdlovsk stimulated him to creating an "abstract plan" on the base of the city layout he had studied. The multiple arising questions may become a subject of a separate investigation; for the purposes of our story it is sufficient for us to realize that the Parizhskoy Communy square was really looked upon by specialists as a strategically important city site.

The huge town-planning potential of the location had been known back in the tsarist times. Shortly before the 1913 revolution, an Opera House designed by V. Semyonov was built. Accordingly, for some short period of time, the square was known under the name Teatralnaya (Theatrical). In the early 30s, the Parizhskoy Communy square became the centre of gravity in a system of a much larger scale. Being located at the crossing of the Lenina avenue and the city arterial road, the Lunacharskogo street, the square in question served as a focal pint of communications of the centre with all new district construction sites of Sverdlovsk. In the north, the Lunacharskogo street continued as a communication with Uralmash and Elmash districts, its southern end led to the Vtorchermet and Uktus districts. The western end of Lenina avenue adjoined the Verkh-Isetsky plant site and the adjoining residential district: in the east, it terminated in VTUZgorodok.

The Greater Sverdlovsk project envisaged expanding the limits of the square, initially limited by the Lenina, Krasnoarmeiskaya, Malysheva and Mamina-Sibiryaka streets (fig. 3.19). By that moment, the square had grown beyond the main avenue to the Pervomaiskaya street, and became wider, bordering on the Lunacharskogo street. The square expansion was necessitated by the fact that it was destined to allocate the most impor-

fig. 3.20

tant buildings of the city's business centre. The scale of the designed buildings signified their importance. The Big Synthetic Theatre and the House of Industry dominated in the composition of the square. At the sides of the square, rose the ensemble of housing blocks, and administrative, public and industrial buildings enframing the two dominating structures – the Big Synthetic Theatre and the House of Industry. The western edge locked on the Dom Pechati (press house) on the corner of the Lenina and Turgeneva streets (fig. 3.20). The latter building was constructed in 1930 after the design of Sverdlovsk architect G. Golubev. In 1933, printshops of Ural newspapers moved into the building. At the eastern side of the square, Gorodok Chekistov and the Builders Club rose, along its southern edge, the buildings of the Bolshoi Ural hotel rose, while the northern edge was given to clubs of flourmill and education workers.

Not all of the planned objects were implemented. Yet the result of the attention to Sverdlovsk was the heritage of multiple projects designed by architects Moscow, Leningrad along with their local colleagues. Neither the new materials, nor the advanced technologies have found proper application in the constructed buildings. But these buildings definitely present an interest from the point of view of manifestation of avant-garde in local interpretation. Let us consider the most notable, both implemented and non-implemented, elements of ensemble of the Parizhskoy Communy square.

Bolshoy Sinteticheskiy Teatr – the Big Synthetic Theatre

Due to the idea of building the Big Synthetic Theatre the Parizhskoy Communy square was very near its renaming after the theatre. If the theatre were to appear on the side of the square opposite to the Opera House, it would have changed its name to a Square of Two Theatres.

Already the name of the new theatre itself bore the idea of a multi-profile theatre designed to hold all kinds of shows, official functions, meetings, and propagandist events.[14] The Theatre was supposed to play the role of a mass cultural-and-educational centre of the Industrial Ural region. The main space of the building belonged to a big auditorium seating 4 thousand people, which got easily transformed into a mass events auditorium holding up to 8 thousand people. Besides, the program envisaged construction of a movie-and-concert hall for 1 thousand people, classes and assembly and service rooms. The multi-functional design of the main auditorium, with capabilities for its transformation, required equipment at the highest technical level.

The competition of theatre projects was announced in 1931. It attracted the attention of representatives of various schools and directions of new architecture: OSA, ASNOVA, ARU, VOPRA, the Leningrad Society of artists-architects, team SASS. Sverdlovsk architects S. Dombrovsky, G. Golubev, E. Korotkov competed successfully with the celebrities: I. Golosov, M. Ginzburg, N. Ladovsky, brothers G. and M. Barkhins, D. Fridman and G. Glushchenko. In the Sverdlovsk competition architects seized the opportunity to improve and even push to the limit their experimental designs of synthetic theatre that they had previously proposed in competitions for the other cities. Altogether the eleven projects were submitted. The special council of XVII party conference delegates gathered in order to choose the winner. Below we will describe the best-known projects submitted for competition.

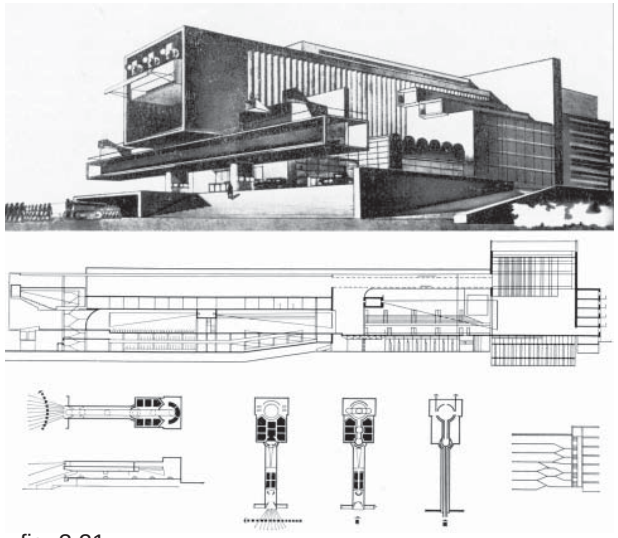


fig. 3.21

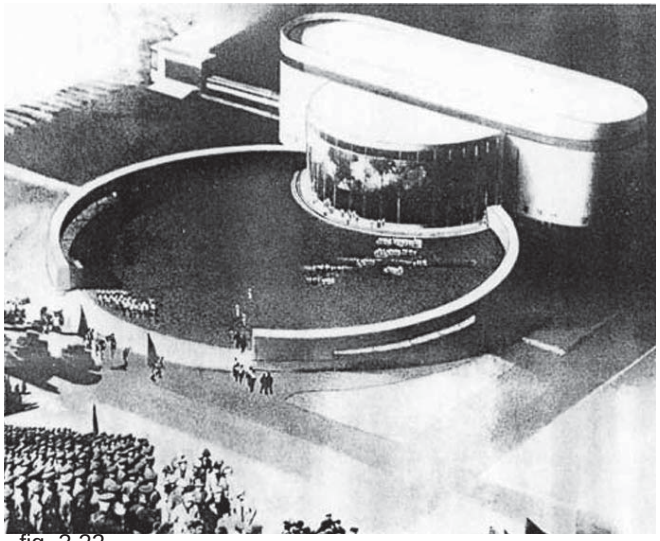


fig. 3.22

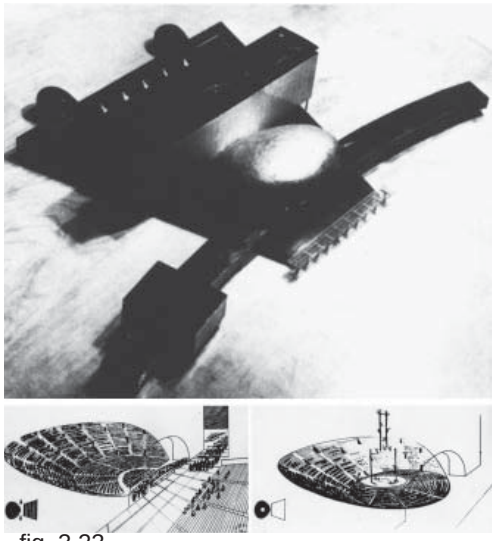


fig. 3.23

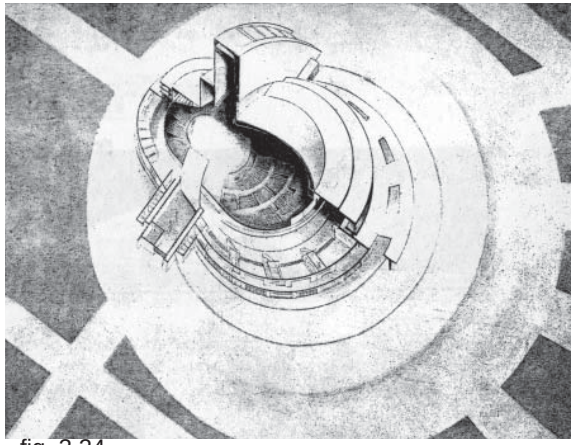


fig. 3.24

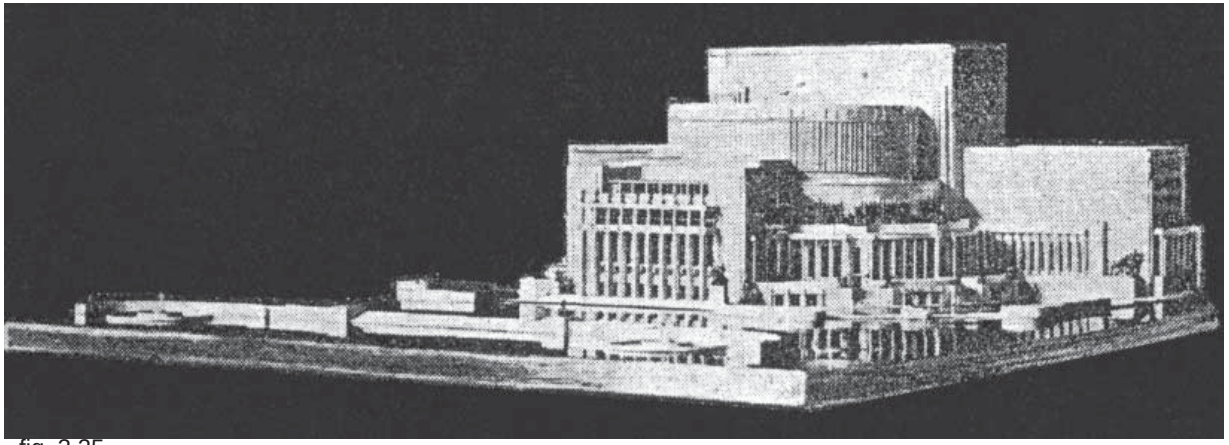


fig. 3.25

In the project by Ilya Golosov, the idea of a synthetic theatre for Sverdlovsk was characterized by laconism in selecting elements for symmetrical plan arrangements and the façade, as well as the dynamics of space solutions (fig. 3.21). The theatre prototype was a similar project in Ivanovo-Voznesensk. Ilya Golosov proposed a three-sector stage, developing in space. The middle sector presented a mechanized platform extending into the centre of the square stalls. The central element of the main façade spatial composition is a console prism of the spectators' stand hanging over the entrance. Columns of workers and machines would march in the direction of the main entrance and pull in under the console and into the depth of the theatre. The forms of the spectators' stand and the main entrance, as well as other elements of spatial composition resembled engineering communications: their square-section "boxes" of various sizes were oriented square to the Lenina avenue, with orifices facing the square. The industrial design conveys the constructivist solution of the project. The theatre was one of the last works before I. Golosov's final retreat from his modernist experiments. Even in the theatre project manifests the symptoms of that retreat: almost mirror symmetry of composition; symbolic expressiveness of the object image, with stringent conceptual programming of its perception by spectators and their interaction (the tribune); as well as the stressed dynamism of image.

In many aspects, Ladovsky's project of the Sverdlovsk synthetic theatre repeats his MOSPS theatre project in Moscow designed in 1931 (fig. 3.22). His theatre lost almost all traditional features. An effective tool to dispose of "traditional" was assimilation of theatre and stadium. Because of this, the project consisted of two main elements: a covered theatre and a mass performances square. Inside the theatre the three semicircular amphitheatres sitting 1 thousand spectators surrounded a rectangle stage. The 180x60 meter stage was supplied with a multipurpose track for jogging and motor racing and a scene with ten superposed circles and décor ramps. An overhead gallery connected the theatre complex with the box-shaped cinema-concert hall located further off. In front of the main theatre entrance was a square surrounded by a circle foyer. According to Ladovski's idea, the 170 meter diameter foyer ring was supposed to serve simultaneously as a tribune and a background for the action, which would take place on the square, and at the culmination moment would move inside the theatre. The walking demonstrations entered the stage via the eight stairs of vestibule. The cars and cavalry had access through the gateways adjoining the stage. The architectural embodiment of Ladovski's idea was found to be quite schematic, owing to the combination of a solid volume of theatre and the thin foyer ring, which was lifted on pillars, and to the detached concert hall.

Ginzburg's project was at first named the best (fig. 3.23). The plan took into account all factors of functioning of a new theatrical building. It also gave an original solution to organizing the entire arrangement and the internal space. The functional method here is displayed in balance of size and form of the trapezium-shaped auditorium and the amphitheatre located on the other side of the scene portal, which, with the given parameters, had optimal spectators' capacity. The author made a wide passage between the two auditoriums designed as a mass shows stage. It was supposed that on holidays people's columns marching along the Lenina avenue would at this section move inside the theatre and through it, and spectators would watch the holiday march from their seats in two halls. Ginzburg also took into account the factor of spectators' seats remoteness from the scene. In another situation, the proscenium sector would

turn through 180 degrees and make an arena in the middle of the hall. The author scrupulously calculated the size of the dome over the auditorium-amphitheatre to reach the necessary acoustic effect. Later the building, like other projects as well, was criticized for its spatial solution. For example, the competition commission did not like how the view of the above mentioned ellipse-shaped dome.

Architects D. Fridman and G. Gluschenko proposed a compact centripetal composition (fig. 3.24). Professor Fridman was one of the leaders of ARU (Architects-Urbanists), which in 1928 separated from the group ASNOVA for considerations of "the need for putting forward the questions of architectural layout."[15] The parts of Fridman's building were concentrated around a stage-core: "The stage with its ancillaries cut across an egg-shaped plan as a high semi-disk partially smashed into the ground. A similar smaller form is attached to the semi-disk on the backside." In fact, two amphitheatres were attached to the stage, which allowed for 8 thousand spectators, including the mechanically operated temporary seating. The jury appreciated the building for its architectural expression, well-emphasized auditorium space and also "the size and significance of the structure." On the other hand the jury concluded that the authors were too involved in the solution of specific theatre-building questions, which made them loose the site of "ideological aspect," the task of finding new architectural tools to manage the masses of spectators.

The Sverdlovsk competition revealed the impracticability of many of the requirements for the creation of a huge and all-purpose "mass-act" theatre. In the same year the competition program was revised. The option of mass parades including people, military troops and machines was eliminated; the auditorium capacity and grade of transformation were reduced as well as the size of the stage and its mechanical supplies.

Finally, Fridman's group, including Prostakov and Neiman, were permitted to continue to the definitive design stage.[16] This design differed remarkably from the competition proposal (fig. 3.25). According to the project, the theatre overall volume was 246 thousand cubic meters and cost approximately 25 million roubles. The symmetrical planning composition develops in parallel with the main street and occupies practically the whole of the plot. The main entrance is oriented to the old Opera House. At its front, from the side of Lenina avenue, the theatre has stairs with two fountains at the sides, ramps lead to summer and winter entrances. The central elements of the theatre building spatial composition are vertical lines "giving the theatre the look of a high-rise building." The auditorium for 3 thousand spectators is circular truncated with the box of the stage. The auditorium is divided into five sectors, each having a foyer, a snack bar with terraces, toilets, a smoking-room, a vestibule, a cash desk and an exit. "Thus each sector had been given all servicing elements encircling the auditorium." The scene was mechanized, with a large rotating circular platform. A rigid horizon was installed on the platform, creating with its spherical surface an illusion of space.

Fridman's group resorted mainly to the methods of traditional architecture. Everything in the building, except for its scale, was based on classical rules, from the mirror-symmetrical composition of plan view to façades decoration with plasterwork and sculptures, "in forms attributing lightness to the entire building." A similar combination of features was characteristic of the design submitted to the competition of projects of the "Palace of the Soviets" in Moscow, which was a turning point in creative orientation of Soviet architecture.

The Big Synthetic Theatre project was never implemented, construction did not even begin. The real capacities of the construction base of Sverdlovsk were unable to meet the requirements of such an ambition and complex building with expensive engineering structures. In the middle of the 30s, the process of search for a new type of a theatre stopped due to a complex situation on the Soviet architecture and crisis of the idea of mass shows. The territory allocated for the theatre project remained unused until the 1950s.

Dom Promyshlennosty – the House of Industry

The building of industrial headquarters of the Ural region was by right given the dominating role in the composition of the entire ensemble of the square. With its size it would have presented a sufficient counterbalance to the mass of the Big Synthetic Theatre. In 1927, the Oblast Soviet passed a decision to build a large offices complex able to accommodate simultaneously administrative, business and trade institutions, among them Uraloblsovnarkhoz, Uralpromstroi, Uralzoloto, Uralplatina, Lespromtrest and others. Such concentration of organizations and trusts of oblast level under one roof served the purpose of raising the efficiency of interaction between them.

A piece of land between the Lenina, Malysheva and Lunacharskogo streets and the Parizhskoy Communy square was allocated for Dom Promyshlennosti. The building cubical content was 600 thousand cubic meters, to allow room for scores of various organizations, events, meetings, together with the administrative bodies of Ural industry, also various trusts, a bank, and design organizations. The building staff was expected to be about 2,500 people, the building throughput capacity allowed for presence of at least 500 visitors every day. Each floor had a conference room for 50 people, a library with a reading-room, and a Red Corner (club room). The project assignment also included providing modern means of communication, show-room areas to demonstrate the achievements of industry, shopping areas and a garage for 20 automobiles.

For financing construction of Dom Promyshlennosti, a bank loan was obtained and a stock company organized, where the partners were government organizations: Gostorg (trade), Gosstrakh (insurance) and Khlebprodukt (bakery). The Oblast Soviet organized a closed competition for the bets project and personally invited to participation the leading architects of Moscow and Leningrad. Sverdlovsk architect A. Kats was also invited. The competition was organized in two tours. Among the participants of the first tour in 1927 were A. and L. Vesnins; A. Burov, M. Sinyavsky and M. Barshch; I. Fomin. At the second tour, in 1930, among the competitors were architects I. Golosov, K. Afanasyev, I. Milinis and Ya. Kornfeld.

Here are a few projects from those submitted to the first tour.

The project by A. and L. Vesnins features both analytical and emotional approach to the process of design.[16] The town-planning importance of the Parizhskoy Communy square and the Lenina avenue were stressed both on the layout and in the buildings cubical content. The general idea consists in grouping building blocks around a large internal garden area, with shopping and servicing zone location on the ground floor around the perimeter of the building (fig. 3.26). From the side of the square the building is moved in from the frontage line by the width of a lane stretching along the sidewalk. The prevailing meaning of the city main street is reflected in placing a deep court d'honneur on this side, in front of the entrance to Uraloblsovnarkhoz, with vegetation and parking areas, permitting the same time to extend the length of shop windows. The same hierarchy is reflected in the increasing number of floors in the

fig. 3.26

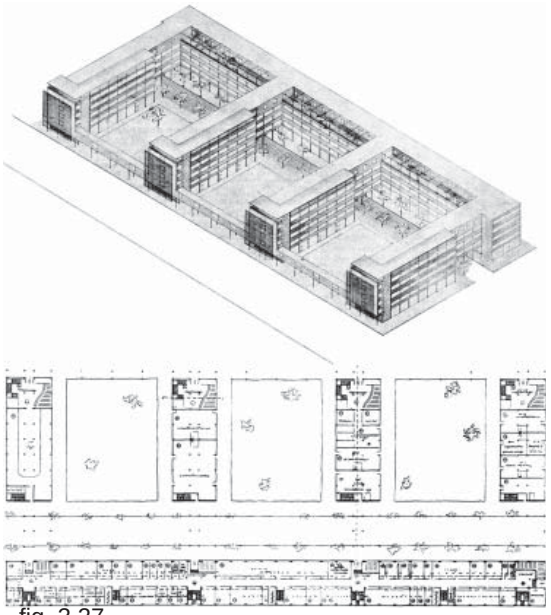


fig. 3.27

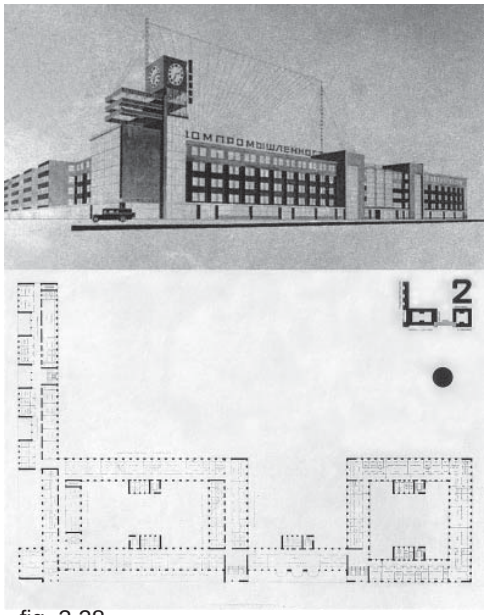


fig. 3.28

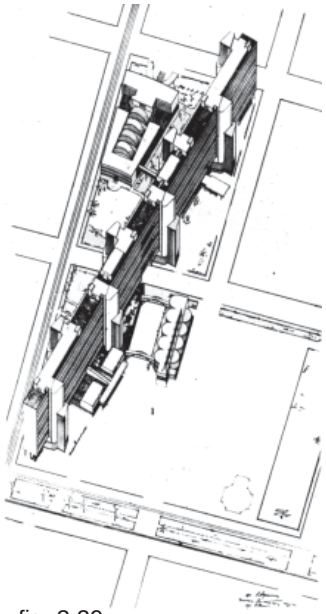


fig. 3.29

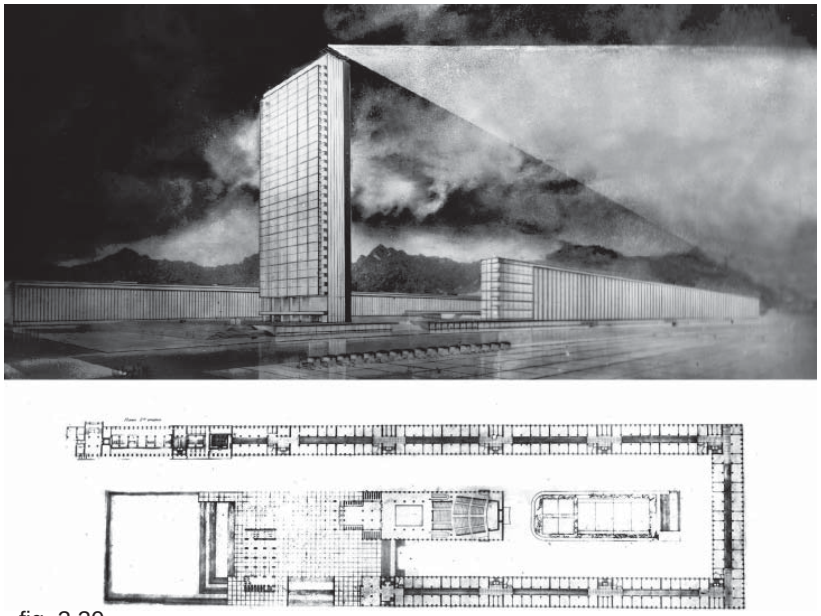


fig. 3.30

building along the important directions: spatial composition reaches its peak at crossing of square with the Lenina avenue, growing from four floors in the remote part to an eight-floor tower pierced by a ten-floor pillar at the intersection point. The authors also give special attention to ensuring access of natural light to the building corridors through openings in the building end walls, staircases and special recesses. Perimetral building arrangement serves the same purpose. Remarkably, the bulk of building in the Vesnins' project is about 160 thousand cubic meters, which was even less than a half of the limit specified in the terms of the competition.

The team of A. Burov, M. Sinyavsky and M. Barshch presented the project of the House of Industry in the form of five-storey blocks placed so as to form a comb structure.[18] The longest block is placed along the square, with four other blocks placed square to it (fig. 3.27). A more convenient access to the longitudinal block is ensured over pedestrian lanes on the internal area side. All transverse blocks in this part are raised on pillars, which permits to open additional entrances to the main building. The upper storey of the main building is made narrower to allow room for terraces opening on the internal side. Transverse blocks communicate through a gallery on "legs" joining the building ends on the side of the Lunacharskogo street. Like in the above Vesnins' project, the ground floor here also accommodates shops, however the building other features are a direct opposition to the former. The building occupies the allocated land, but it does not respond in one way or the other to the city buildings around. The designs of similar façades on all its sides bears no information about the organizations inside the building either. Entrances arrangements follow the logic of the plan and norms of accessibility only, without an attempt to use any architectural-compositional accents. The mechanical repetition of standard elements of the comb that might continue to infinity clearly manifests the influence of the ideas of West-European functionalism.

Of all submitted projects, the work by a group of Leningrad architects, including G. Simonov, A. Gegello and D. Krichevsky was finally chosen (fig. 3.28). *Uralskii Rabochii,* a local paper, wrote about the plans to build Dom Promyshlennosti after the design of Leningrad architects, and illustrated the information with a drawing of the building perspective.[19] Construction was to be completed in 1930-1931, for which purpose five million roubles were allocated. But unexpectedly, in 1931 the second tour of the competition was announced.

The distinguishing feature of all projects of the second tour was gigantomania as a program. High-rise buildings prevailed, not as a mean to reveal the spatial dominant as such, but as a feature of the project in general.

Architects K. Afanasyev, I. Milinis and Ya. Kornfeld implemented in their project an image of an industrial enterprise of the future (fig. 3.29). In their project, a fifteen-storey 400 meter-long slab of the main building, facing the square and the Lenina avenue, crossed the plot diagonally. Strong supports of stair-and-communications wells raised the block above the ground in the middle, where it passed over the Reshetnikova lane. The slab accommodated service institutions. The lower public blocks were scattered over the territory, passing under the slab, or communicating with it through overhead passages. The project impressed both with its scale and the futurist image. Apparently, this was the reason the project received the first price.[20]

In his variant of design for DomPromyshlennosti, I. Golosov resorts to the functional method, it is probably for this reason that a "comb" is also

found in his project (Fig. 2.20). As distinct from the strictly pragmatic plan of A. Burov, M. Sinyavsky and M. Barshch, his "comb" is only included in the complex, forming the body of the composition. Separate groups of institutions are accommodated in its blocks, connected with an eight-storey block, passages and common entrance-halls. The "head" of the composition is formed by two fifteen-storey slabs arranged at a right angle one to the other. The group of underlying and overhanging spaces at their foot forms an internal area – a representative entrance of the bigger slab. One of the blocks in this group of spaces, the overhead gallery, passing along the square edge to the Lenina avenue reminds of the box-like prisms of the Big Synthetic Theatre building.

The construction commission of VSNKh and management of Domgospromural chose the design by architects D. Fridman, G. Glushchenko and engineer P. Pasternak, that was originally awarded only second place in the competition (fig. 3.30). Evidently, the thorough study of town-planning aspects from the artistic standpoint undertaken by Fridman's group had influenced the final decision of the commission.

The project composition was based on a spectacular contrast of a 140-meter tall tower on a giant stylobate and a seven-storey block stretching along the Lunacharskogo street, drawing the border line of the territory at the back of the tower to the Malysheva street. The building designed for 12 thousand workers was divided in three parts. The one and two-storey parts accommodated conference and display rooms. The seven-storey block was to house trusts, companies and the State bank. The composition was crowned by a fifteen-storey tower standing in the Lenina avenue; it was meant "exclusively for design institutions."[21] The list of service systems included telephone, mail and telegraph, which also delivered correspondence to trusts by special electric couriers. From the side of the Lenina avenue one could watch the lifts moving in the tower. Horizontal communications in the complex were ensured by main corridors in the second and fifth floors. According to design, the building outside perimeter was equal to 1 kilometer, its cubical content was 500 thousand cubic meters, which exceeded the size of the House of Industry in Kharkov 1.5 times. The Sverdlovsk House of Industry was destined to become the tallest building in the USSR.

The construction part of the project was elaborated by specialists from the Moscow design institute Giprostroi under the supervision of P. Pasternak. For the first time, the project envisaged use of standardization methods, lightweight structures and other novelties. Among them was, in particular, substitution of reinforced concrete slabs in the seven-storey part for decking placed over reinforced concrete grillage assembled on site from standard beams. Besides, stair elements designed without bridgeboards and brick external pillars gave economy on metal. The principal engineering solution for the fifteen-storey reinforced concrete scheme was standard. Wind loads were taken up by reinforced concrete diaphragms in the building end walls, due to which architects had a chance to design normal-size internal columns. The system based on standard construction blocks and elements (10 standard blocks for the seven-storey part, 14 standard floors for the tower, etc.) made simpler construction jobs. Ribbed reinforced concrete slabs were used in the foundation.

Fridman treated very seriously the competition project assignment:

"The composition must create the architectural centre of the city, mark the reference point, set the scale for construction of the new city of Sverdlovsk. The broad square with stairs leading to the platform raised 3 meters above ground level, which would carry the 15-storey and the 7-storey blocks, the latter partly forming a background


fig. 3.31


fig. 3.32


fig. 3.33

for the 15-storey part, must become the most important element of the building architecture. With regard to style, the composition in general is designed to create at effect of lightness of the architectural form."

Construction started in 1931, but was stopped after the fire of 1935. The conserved part of Dom Promyshlennosti was completed in the 60s only – respectively, it bore the features of style of the later period.

The Bolshoi Ural Hotel

The fact that the House of Industry concentrated multiple parent organizations of Sverdlovsk Oblast meant that it would have to meet an intensive inflow of visitors from different regions. Therefore the competition organizers also envisaged construction of a hotel as part of the business ensemble. The Bolshoi Ural hotel complex was allocated the territory on the southern border of the Parizhskoy Communy square, along the Reshetnikova lane. The plot occupied the block between the Mamina-Sibiryaka, Malysheva and Krasnoarmeiskaya streets. Construction of two equivalent blocks facing the Reshetnikova and Malysheva streets was planned, enclosing an internal area between them, with priority being given to the block facing the square.

Initially, in the competition held in 1930, the project of Ilya Golosov was selected (fig. 3.31). Two mutually perpendicular nine-storey slabs made an accent on the corner of Mamina-Sibiryaka street and the square, i.e., the side facing the House of Industry. The angular composition was enhanced by loggias at the end of the block facing the Mamina-Sibiryaka street. Loggia verticals served to compensate the pronounced horizontal character of façades composition. Simultaneously, they presented spatial reference points: entrances were easily found at the base of each column of loggias. In a similar manner, the entrance group was marked: it was made at blocks intersection and faced the square. Entrances were organized as box-shaped spaces open at ends and stretching inside the building. Golosov used similar "boxes" in his projects of the Big Synthetic Theatre and the House of Industry. In all projects, they are oriented to the Lenina avenue with their open ends, "pulling in" masses of people. Evidently, the author used this shape as a common element of design for the whole ensemble of the Parizhskoy Communy square.

However, the choice of the Gorkomkhoz commission fell on the project by Sverdlovsk architects V. Smirnov and S. Zakharov (fig. 3.32). According to conclusions of the commission, "under conditions of acute shortage of iron and cement, the project if architects V. Smirnov and S. Zakharov is more feasible, since it requires minimum reinforced concrete structures." Indeed, the building load bearing structures were designed in brick, on cobblestone foundation, with reinforced concrete columns being used in only a few rooms. Double timber floors were laid over metal beams, with only at places they were made reinforced concrete. Thrifty approach of local architects to

fig. 3.34

fig. 3.35

use of scarce construction materials also had a negative side: the hotel capacity did not meet the specifications of the competition assignment. The project was returned for completion, and in the final variant it became enriched with the concepts of Golosov's project. The influence of Golosov's project also appears in the following comments by the authors: "The main entrance and the vestibule are deliberately moved off the façade centre towards to the House of Industry."[23]

The first phase of the hotel construction was terminated in 1932, the second block was never built. However, the fact of hotel erection in the ensemble of the square demonstrated one significant change: raising of the town-planning role of this type of a building. Before the revolution, hotel buildings were normally located among common buildings of residential areas; now they came out to key positions in street structure: their location would now be selected in a square, like hotel Bolshoi Ural, or spanning a street, like hotel Tsentralnaya (Central) built in 1928 after the project of architect V. Dubrovin (fig. 3.33). The hotels scale also increased.

Club Stroiteley – Builders' Club

The corner of Lenina (its southern side) and Lunacharskogo streets was reserved for Club Stroiteley. Also its design was competition based. The competition was held in 1930. One of the main conditions was that the main façades and entrances of the club would look-out over Lenina avenue and the House of Industry.

The project of architect Ya. Kornfeld was found the best (fig. 3.34). The architectural composition proposed by one of the OSA leaders was so extraordinary that it was rumoured that Le Corbusier had lent a hand. The project reproduced all principal postulates of constructivists concerning typology of public buildings, namely, "workers' clubs." Club Stroiteley presents the type of a pavilion building. This type was first proposed by Alexander and Leonid Vesnins, and became recognized as a type in the 20s. The principle of a pavilion consists in that the building is broken-up to separate functional zones grouped so as to ensure valuable functioning of all kinds of club activities.

The club's spatial composition is based on functionally independent parts of the club and entertainment sectors. Their intersection forms a small square in front of the entrance to the entertainment sector. The kind of spatial arrangement of the club displays strong influence of the neighbouring spaces of the House of Industry. With its shape, orientation to the west, towards the square centre, the square in front of the main entrance to the House of Industry determined the position of the square in front of the club. The entire complex is divided in two sectors: club and entertainment. The club sector consists of two blocks. The three-storey block facing the Lenina avenue is distinguished for its extended hall space in the second floor bearing on pillars over the entrance from the side of the square. The corridors behind the hall accommodate rooms for circle activities and classrooms: beside others, the club was used as a training and skills improvement centre for builders. The training block communicates with the second block stretching to the inside area through an overhead gallery. The two-storey block performed a more recreative function, it also had

a small hall, and a sports and children's playgrounds adjoining it (later, this area was built-up). The entertainment sector was located in a compact three-storey block along the Lunacharskogo street. The centre of gravity in its planning was a large assembly hall in the heart of the building. The multifunctional scheme of the club determined the compositions of its façades. The author made use of a wide spectrum of proportions and sizes of window openings, effectively alternating with smooth wall surfaces. Additional rhythm is added to façades by balconies and semicircular bay windows. Flat roofs and balconies also played the role of observation platforms and solaria. The building was constructed from brick, on cobblestone foundation, with reinforced concrete floors laid over beams, partially timber floors with filling. The assembly hall ceiling was suspended laid over timber trusses. In 1933 Club Stroiteley was completed.

One of the participants in the competition was architect V. Sokolov (fig. 3.35). His solution was based on separate prisms, cutting across each other.[23] Each prism accommodates one of the club functions: theatre, club and administration. In that and other respects Sokolov's design resembles the idea of Kornfeld.

Club Stroiteley is one of the many club buildings that had appeared in Sverdovsk in the 20s-30s. The club stands apart from its own typological kind in that, in its construction, the functional method had not just found ample application in its designing, but had also been implemented in practice. Not many constructivist projects could boast of such a fate.

Gorodok Chekistov – The Security Officers' Block

The Ural security officers needed comfortable dwellings. The fact that Gorodok Chekistov housing complex had been included in the ensemble of the new business centre demonstrated the growing influence of NKVD-OGPU (People's Commissariat for Home Affairs – Unified State Political Department), the complex customer. In that period, all organizations in charge of administrative, economic and, industrial development of the Soviet Urals were kept under vigilant control of this organization. Ideological work in such institutions had to be carried out systematically and thoroughly, and punitive organs kept watch of that.

The project designed by architects I. Antonov, V. Sokolov and A. Tumbasov (art design) was implemented from 1929 to 1936 (fig. 3.36). The importance of the customer told positively on the quality of work. The project was provided with all necessary construction materials named by the authors in the project, as well as with an adequate level of construction works. The complex architectural planning was well thought-out: on the one hand, it proceeded from the kind of activities of its residents; on the other, it used the latest achievements in housing construction and socialist life standards.

The Gorodok Chekistov was designed as a single ensemble. An image of an impregnable fortress was created at the expense of reserved and balanced character of its elements, combined with their asymmetrical arrangement. The selection of perimetral scheme of the estate was dictated by the customer's requirement that the block be sufficiently isolated and protected. The possibility intrusion to the inside territory was excluded, as the entries were guarded round-the-clock. The impregnable walls of the block-fortress hid behind them a system of cultural and community facilities: a kindergarten and day nursery building, a medical block with a drug-store, a laundry, a barbershop, a public canteen, a boiler house and communal services shops, conveniently arranged in an

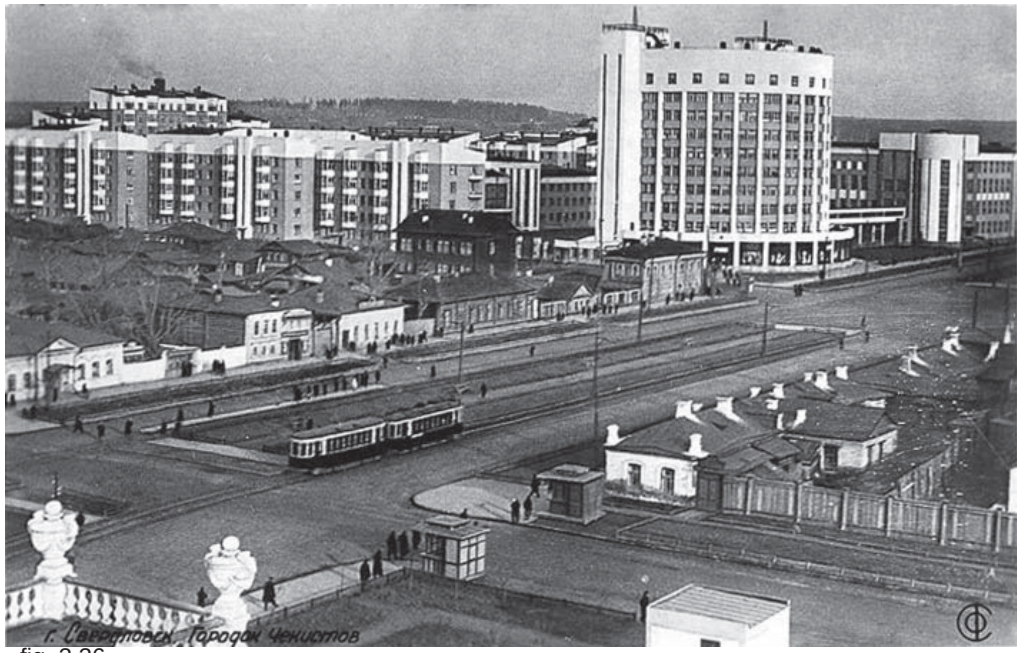


fig. 3.36

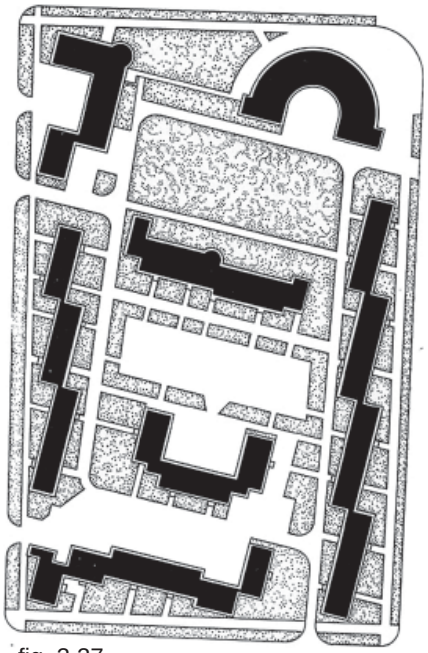


fig. 3.37

fig. 3.38

fig. 3.39

internal park, side by side with recreation areas, sports and playgrounds. A local public announcement system kept residents informed of the day activities, such as the menu options offered in the canteen and chess tournaments in the club.

Although the composition of Gorodok contains the same elements as the other similar projects of the time, its compositional entity is unique. The famous enclosed scheme emerged, however, not at once. Following the completion of the draft for the master plan, architect Antonov asked his old acquaintance from his times in the Imperial Academy of Arts, L. Rudnev and his colleague I. Fomin for a critical review. Owing to his remarks the master plan gained its definitive shape (fig. 3.37). The layout was so complicated and forms so intricate that, once the construction was accomplished, a popular belief was born that the bird's eye view of Gorodok Chekistov resembles crossed hammer and sickle (Soviet State emblem).

Layout orientation was an important feature of the complex planning characteristics. All buildings in the block are strictly oriented to the cardinal points, with the apartment houses standing meridionally, and service houses, latitudinally. The block deviates by 12.5 degrees from the city centre coordinate grid turned NW. Thus parts of the five-storey apartment houses along the Kuznechnaya and Lunacharskogo streets instead of standing in a solid wall along the frontage line, formed a zigzag. In the building in general, the zigzag effect was even more enhanced with single-pitch roofs (fig. 3.38). Recesses formed in the walls served as niches for green plantations both on the street and the internal area sides. Due to the zigzag form of Gorodok Chekistov side buildings, people called them "saw-house." The side along the Pervomaiskaya street, opposite to the Lenina avenue, is closed with a monumental apartment block of varying height. Its eight-storey body in the centre drops down in cascades of six- and five-storey sections to the periphery (fig. 3.39). The fourth π-shaped five-storeys-high apartment block stands parallel to it, on the inside territory. Asymmetry and complex architectural rhythms of apartment blocks are compensated by common elements of façades design: smooth walls with window openings alternate with vertical lines of bay windows and glazed bands of staircases. End façades are rounded-off with balconies.

Special attention in the complex composition was given to the public group on the SW side, presenting two blocks and an overhead gallery between them, looking on the square and the main street (fig. 3.40). Use of cylindrical shapes in the space

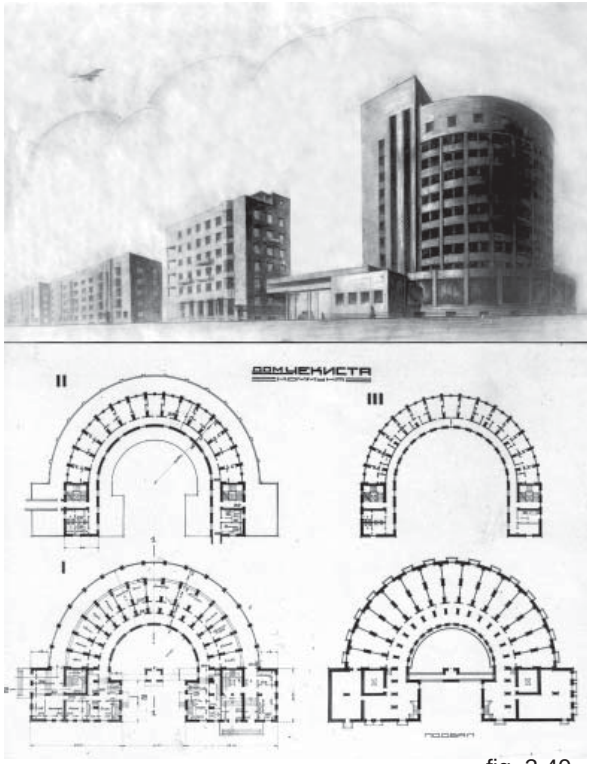


fig. 3.40

of these buildings underscores the importance of their position in Gorodok. The corner of the Parizhskoy Communy square was accentuated by the most prominent building in the complex, the ten-storey apartment hotel for the singles (today, the Iset hotel), designed in the form of a semi-cylinder bearing on two massive pillars. Like other buildings of the complex, the apartment hotel was built of brick, which was raised to the level under construction manually, without the lifting crane.

The Dzerzhinsky club building, with the adjoining shops blocks on the Kuznechnaya street side

continues the Lenina avenue line. The club is known primarily for its spiral stair projecting as a cylindrical structure into the Lenina avenue. Since the stairway bears on an external structure, a light atrium is formed in its core part over the whole staircase height, opening a view of a unique beam ceiling in the form of a five-pointed star. The staircase accentuated the right-angle intersection of the club and entertainment parts of the building. In the club part, rooms for circle activities are grouped around light-filled foyers of semi-functional application. Such a method of planning allowed the architects to reduce the depth of the corridors for circle room groups, and this told positively on spatial perception of the interiors. On the inside, the public buildings group of Gorodok is separated from the dwelling zone with a service yard.

The dwelling units typology and their arrangement in Gorodok took into account the varying social status of its residents. Planning characteristics of dwellings change in the direction from the Lenina avenue to the Pervomaiskaya street, and accordingly, the transfer may be traced from the new, communal to the private, family, way of life. The everyday life standards in the apartment hotel was completely oriented to the system of social and communal services: a gallery system of rooms with minimum conveniences; mechanical cores, staircases and lifts located in the end pillars; a large shopping centre with a universal selection of consumer goods and foodstuffs, a barbershop, a bathhouse and a laundry in the ground floor. The apartment hotel residents had privileged access to a large public canteen located in the ground floor of the club building. The club and the apartment hotel communicated at the second-floor level via an overhead gallery on reinforced concrete pillars. On the other side of the Lenina avenue, right opposite to Gorodok Chekistov, stood Club Stroiteley. It was rumoured that such vicinity had been deliberately organized: young unmarried security officers could thus attend mass events in the Club Stroiteley and find girlfriends among the great number of workers of building organizations.

Married couples then received apartments in the apartment blocks. Designers took into account the everyday needs of married couples, placing a kindergarten, a clinic outpatient department and service shops. However, even there reigned the idea of a socialist way of life, relieving apartment residents of housework and cooking. Spacious apartments of the “saw houses” had only a small recess for a kitchen space, because the large canteen was designed to serve the entire population of Gorodok. The residents of the “saw houses” and the latitudinal apartment blocks were the first in the city to use gas, which was produced from coal in the local boiler house. The apartment blocks had a total of 280 apartments, the apartment hotel had 150 single-room units.

Construction of Gorodok Chekistov was the major finale in the symphony of creation of the Greater Sverdlovsk business centre. “Everything in it was new and unusual for the Ekaterinburg city-development tradition: the project scale, the buildings style, the layout of the whole block designed to serve a collective way of life, and the ensemble character of architectural planning.”[24]

OSA and Housing Construction in Ekaterinburg

"Beside enhanced comfort of dwellings and enhanced hygienic conditions, provided by a free open layout and by interchanging of apartment blocks and the green courts between them, allowing the sun in and ventilation, – new workers dwellings with improved community facilities created conditions for life standards reconstruction, based on socialism"

Ural Soviet Encyclopaedia[25]

Sverdlovsk offered a wide choice for constructivist activity, and constructivist ideas found multiple implementations in this city. In the program of capital housing construction several projects of OSA, were implemented. Many local authors based their designs on constructivism methods.

This division considers in more detail the work of Ginzburg's group in 1928-1929, since the practical lessons of the standardization section of Stroikom RSFSR found ample application later, in housing construction practices in Sverdlovsk.

The result of Ginzburg's group work was a series of housing complex designs completed in 1930. These experimental projects called *doma perekhodnogo tipa* (transition type houses, meaning transition to new life standards) were meant to combine with the development of the "industry of everyday life" and working out of standards and principles of industrialized dwelling construction. In all, four projects were worked out for Moscow, one for Saratov, and one for Sverdlovsk.

New housing construction presented an important part of a program of reconstruction and rehabilitation of the central part of Sverdlovsk, to be carried out in compliance with government directives. In 1930, the TsK VKP(b) issued an ordinance "On everyday life reorganization" dedicated to the problem of improving the living conditions of the population, with simultaneous criticism of phantasmagoric theories like total collectivisation and social and life processes regulation in a house-commune.[26] Theses of the VKP(b) Central Committee address to All-Union problems were specified in more concrete terms in relation to Sverdlovsk in the ordinance of the Presidium of the All-Russian Central Executive Committee "On urban economy in Sverdlovsk" of 30 May 1931, in which the city soviet ordered to take control over the final Greater Sverdlovsk layout from the point of view of its compliance with the social and living requirements of workers.[27] Following these two ordinances, an optimal type of dwelling was selected to be used in construction under the Greater Sverdlovsk plan. It was the "transitional type house" in which the elements of new and traditional living standards were combined.

The Uraloblsovnarkhoz House

The residential complex Uraloblsovnarkhoz House was noted for original composition and functional organization. It was built in Sverdlovsk on the corner of Malysheva and Khokhryakova streets in 1933 after the project of Ginzburg and Pasternak (fig. 3.41). Structure design belonged to engineer S. Prokhorov, head of Tekhbeton, a cooperative project organization in Moscow. Tekhbeton was organized on the initiative of Prokhorov with the purpose to introduce novel technologies on important construction objects.

The Uraloblsovnarkhoz House consisted of four apartment blocks forming a square composition, with a garden in the internal area. The functional core of the complex was the eight-storey apartment hotel (block nr. 1) facing the Malysheva street. It comprised type F dwelling units arranged in a two-corridor system (fig. 3.42). A canteen with facility rooms and a terrace were located on the top storey. One part of the ground floor accommodated office rooms; the other part left un-

fig. 3.41

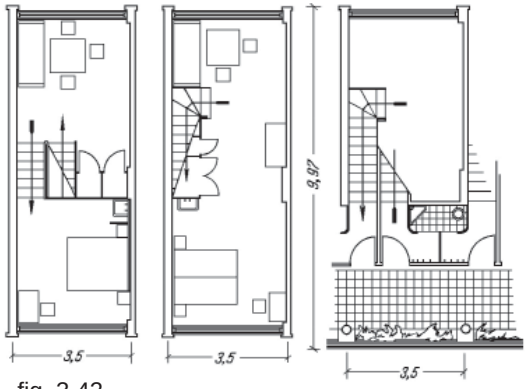


fig. 3.42

fig. 3.43

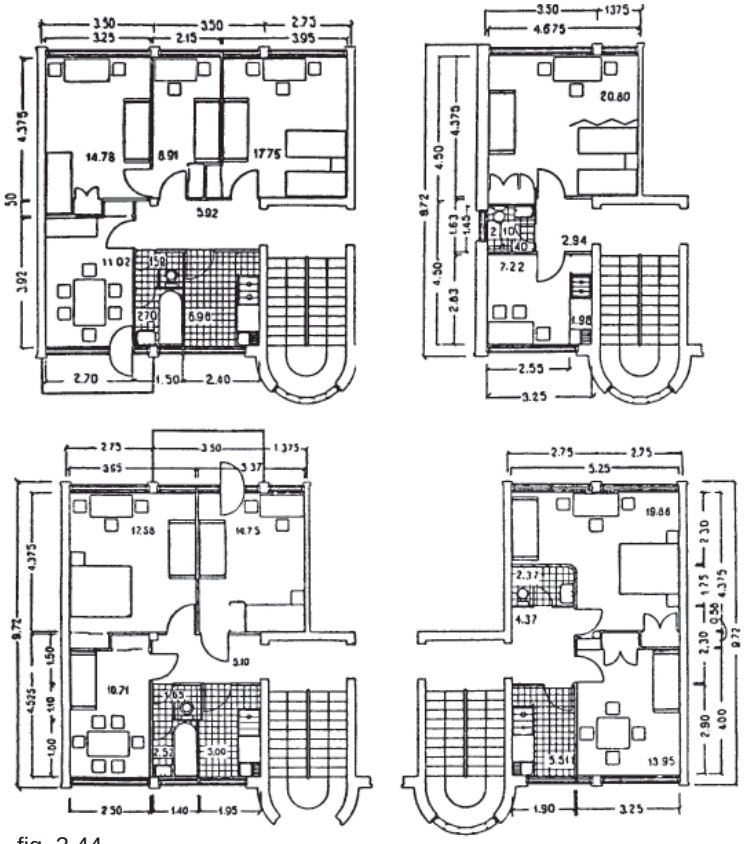


fig. 3.44

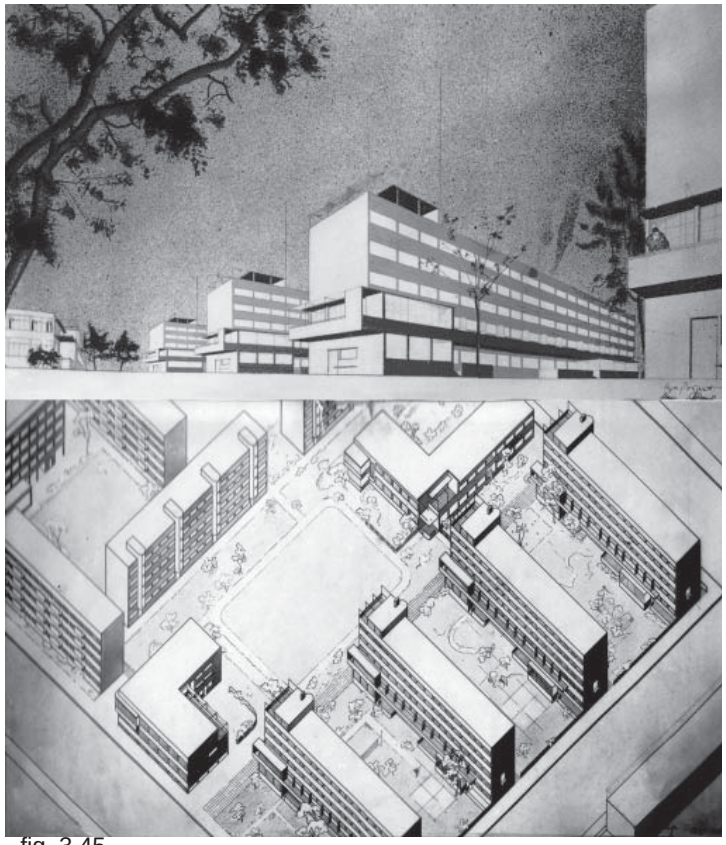


fig. 3.45

disguised reinforced concrete supports.
Along with a few other engineering solutions used in the block nr. 1 (e.g., the basic design solutions), this method was borrowed from the design of the Narkomfin House in Moscow, where the dwelling block was raised on columns opening free access to the space of the garden (fig. 3.43). In the engineering design part of the Narkomfin House an attempt was made to use new materials and structures: it had a reinforced concrete frame with light fillers. Round reinforced concrete pillars braced with longitudinal and transverse beams took up static loads.
With all the functional and planning identity of the two houses in general (use of type F units in the block main part), the apartment block of the Uraloblsovnarkhoz House had its own individual features. One-level apartments in the Narkomfin House occupied the second floor, while in the Uraloblsovnarkhoz House they were located at mid-level landings at building ends. Other differences were: an additional terrace of the floor above the offices in the Sverdlovsk complex, while in its Moscow prototype, only the roof on top of the building was available for use; washing and toilet rooms at ends of corridors, etc. Differences were introduced in compliance with the ordinance "On changes in the process of construction."[28] Five-storey standard-section blocks Nos. 2, 3 and 4 had units type A-2, A-3 and A-4 presenting traditional 2, 3 and 4-room flats, slightly amended with account for the design features of the project (fig. 3.44). One of the standard-section blocks accommodated a kindergarten.
Apparently, the success of the Uraloblsovnarkhoz House led to erection of a similar complex on the adjacent site. The project of further complex expansion was designed by architects I. Robachevsky and M. Reisher – by the way, founders of the Ural branch of OSA. Only one block identical to block nr. 3 of the complex was finally built (Fig. 3.35).

The Uraloblsovnarkhoz House presented a direct implementation of work of the OSA group in Sverdlovsk. Indirectly, results of constructivists' research in the field of new types of dwellings were implemented in the multiple housing complexes designed by Sverdlovsk architects. For example, constructivist methods were borrowed to a certain degree by S. Dombrovsky for his series of housing complexes the Gorsovet Houses (city soviet houses), representing the idea of zhilkombinat. In the period between 1927 to 1929, the Gorsovet Houses Nos. 1, 2, 3, 4 and 6 were built after his design in the city centre. The nr. 5 house of this series was designed by V. Dubrovin in

fig. 3.46

1928 (fig. 3.46). All six complexes are united by application of new architectural style forms and introduction of a system of local consumer services. The ground floor of each complex had either shops or facility rooms. Residential floors presented combinations of corridor and sectional systems of apartments arrangement, which points to the author's adherence to the "transitional-type houses" concept in their design.

The Gospromural Houses

The most illustrious application of zhilkombinat idea as well as of the research of the standardization section of Stroikom RSFSR may be found in the Gospromural Houses complex. The complex received its name after the construction-cooperative partnership "Gospromural." The project was designed in 1930 by architects G. Valenkov and Ye. Korotkov. Two parts of the complex were placed on the even-numbers side in the eastern

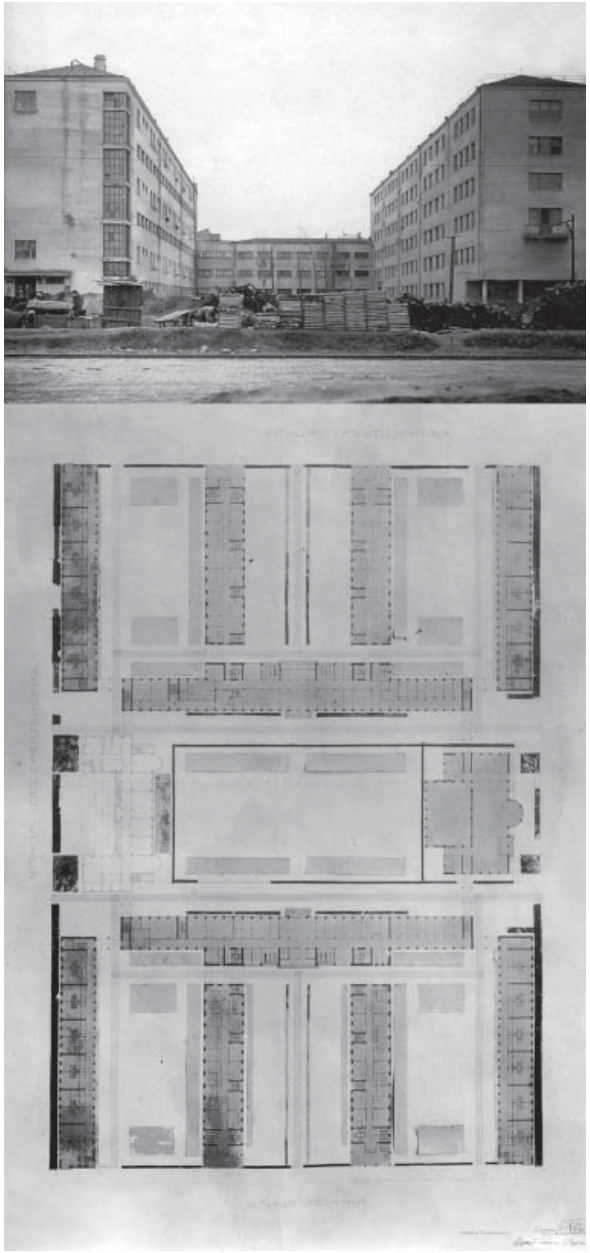


fig. 3.47

part of the Lenina avenue (Nos. 52-54). They were separated by the Bazhova street, each occupying a whole block. The main task of the project, building economical and comfortable dwelling, was solved by introducing spatial dwelling units. By way of collectivisation of everyday-life and social processes, authors tried to set an algorithm of functioning to the whole of the residential community. In its layout, each part uses the "comb" structure, so much favoured by both constructivists and functionalists. The head principle of the zilkombinat's layout lied in that a row of residential blocks were placed with their ends to the main street, and one block (with accommodating a service system) connected their ends on the other side. Thus an optimal level of aeration and lighting was reached in the formed courtyards; at the same time, the private zone of the internal area opened to public space of the street that carried the ideology of socialist way of life.

The first part of the complex (section nr. 1, 52 Lenina avenue) was located in the boundaries of the Bazhova, Morozovoi streets and the Reshetnikova lane (fig. 3.47). Blocks construction went in two phases. First the comb facing the Lenina avenue completed with a clinic outpatient department were built in 1930-1934. Then a similar comb and a kindergarten facing the Reshetnikova lane appeared (the initial idea was building a gymnasium and a canteen). The consumer services system also included a shop, a bathhouse, a laundry and a club. Dwelling blocks communicated one with the other through a system of overhead and underground passages, and courtyards between blocks were interconnected through specially provided passageways at junctions of elements of the comb. The courtyards also were included as components of the servicing system: they facilitated active social contacts. Buildings height goes down from the edges towards the centre. Blocks facing the streets are six storeys, the connecting blocks three storeys, and the auxiliary buildings two storeys high. In a similar way the planning design varies: six-storey blocks have two-level apartments arranged in sections; connecting blocks combine corridors and sections; the clinic outpatient department and the kindergarten have corridor arrangement.

The territory on the other side of the Bazhova street stretching to the Michurina street was occupied by the second part of the Gospromural House complex (section nr. 3, 54 Lenina avenue). Like the first House, erection of this section also went two phases: 1935-1941 and 1945-1948. On the length of such a long period of construction, the complex

fig. 3.48

absorbed the features of all styles that had been replacing one another with changes in the political system of those years (fig. 3.48). The comb block in the Lenina avenue that had appeared first preserved in its looks the reserved style of constructivist forms. On the contrary, blocks along the Bazhova and Michurina streets, with their ends looking into the Reshetnikova lane, already have stucco-moulding décor. The last to appear was the hotel block in the heart of the block. Its façades are abundantly decorated with order compositions, with even a rotunda gracing one of the entrances. Despite that the styles mix had distorted the original view of the Gospromural House, its conceptual core based on a new way of life remained unchanged. In designing dwellings, architects proceeded from the considerations of sufficient lighting and aeration of rooms. Six-storey blocks had lifts and three-four flight stairways, which brought a new degree of comfort to housing construction practices in Sverdlovsk.

New Typology in the City Centre Reconstruction

"In 1933, a semi-circular glazed building of a water station appeared on the spit of the city lake. Later, the structures of the Dynamo sports stadium were erected nearby. This changed the lake: it now looked much more home-like. It is impossible to imagine the city lake without this building of original architecture now."

N. Berdnikov[29]

Certainly, the Parizhskoy Communy square ensemble was an object of special attention of new architecture designers. But it should be remembered that intensive construction also went on many other sites in the city centre. Sverdlovsk was expanding its boundaries at the end of the 20s beginning of the 30s, and welcomed the initiatives of architects-city planners in all experimental forms. The time has come to tell about the representatives of new types in architecture, which, along with Business centre ensemble, had created the architectural image of the new centre of Sverdlovsk. It would be difficult to name all buildings of the city, therefore let us consider the most significant of them from the point of view of their typological classification.

fig. 3.49

Fabrika Kukhnia – the Kitchen Factory

In 1928, the first part of Fabrika Kukhnia building was built in the Sverdlova street (fig. 3.49). The project was designed by the atelier of architect G. Valenkov. The construction was executed by the Ural construction-industrial association Uralpromstroi, an organization formed in 1925 with the purpose to unite all kinds of construction activities in the Urals and organize them on a planned basis.

The kitchen factory of Zheleznodorozhny (Railway) district was designed with account for its perception from two points: from the Sverdlova and Karla Libknekhta streets. The two streets form the main entrance to the city, communicating the railway station with its central part. The factory two-storey building accentuateed a slight break at confluence of the two streets. The angular plan arrangement of the building respectively determined the duality of its spatial solution. In the range of the Sverdlova street it looks like a massive block cut across with different-height rows of window openings. The elements of architectural composition drew attention to the public entrance on the corner. A corner balcony served as the main entrance canopy; gravitation to the corner was enhanced with big letters at the top of two building façades. At the point where the Sverdlova street meets with the Karla Libknekhta street, the factory building swung on a glass hinge of the stairway semi-cylinder, and following the terrain relief, went down in two steps.

This interesting typological and stylistic example of socialist avant-garde remained virtually the only implemented kitchen factory in the city centre.

Physical Culture and Health Institutions

The Vseobuch (General compulsory education) program had played an important role in bringing health care and physical culture in the working people's everyday life. At the turn of the 20s, multiple bath-and-laundry combines were built in Svredlovsk: in the Kuibysheva street in the centre, in the Sverdlov street near the Central railway sta-

tion (fig. 3.50), in VIZ district. Sverdlovsk also took an active part in physical culture movement. Multiple sports societies were organized. In the years of the first five-year plan, as well as in the later period, sports societies Dynamo, Locomotive, Spartak, Trud sprang up, and their existence called to life several interesting specimens of buildings of citizens' sports activities. Two of them are especially valuable.

The society DOSAAF (Voluntary Society for Assisting Army, Air Force and Navy) started construction of a military-sports complex in 1933 (fig. 3.51). It was planned that Dom Oborony (House of Defence), so the complex was named, would become the largest sports complex in the city. The site allocated for its construction occupied a block between the Lenina avenue and the Malysheva street, and the Voyevodina and the 8-Marta street. Architect G. Valenkov designed the complex so that its public-residential part looked on the Malysheva street, while the compositional centre presenting a large domed pavilion with multiple gymnasiums was turned with its main façade to the Lenina avenue. Construction started from the part facing the Malysheva street. Thus the buildings of the club, sports school and an apartment building turned with their end sides in the direction of the Malysheva street were realized. The sports pavilion building, which was supposed to occupy the site of monuments of architecture of the 18th-19th centuries, was never built due to cutback in the project financing.

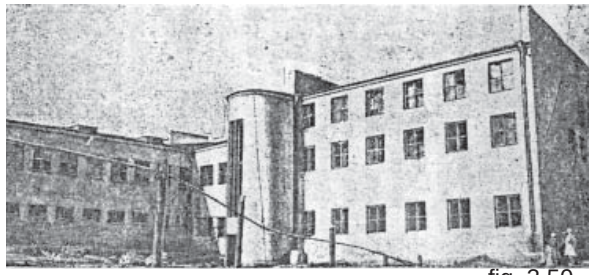


fig. 3.50

It seems that the Dynamo sports society organized under the personal patronage of Felix Dzerzhinsky had sufficient weight in Sverdlovsk, which allowed it to secure one of the most picturesque sites in the city centre for its club. The city lake from the first years of its existence had played a role of an organizing hub of city development. The first buildings, ad later the most beautiful houses, appeared on its banks. The Dynamo water-and-ski station (also known as the House of Physical Culture) built on the spit of the city lake in 1933 after the design of architects I. Antonov and V. Sokolov became an elegant addition to the landscape outline of this place, occupying by right the central position. Without fault, one easily recognizes outlines of a ship in the building spatial design.
The station complex built from brick consists of two parts. The front five-storey part looking over the lake belongs to the hand of Antonov and is particularly rich in terms of its rhythmic design (fig. 3.52).[30] Similarity with a ship is enhanced with a triangular jutting glazed stairway in the "bow" of the façade. Also, like a compass pointer, the jutting stairway points to the city lake dam, underscoring the building orientation in the system of the main planning axes of the historical centre development. Semi-circular loggias, terrace on roof and "captain's bridge" were initially conceived as viewing places for aquatics fans, from which they could watch competitions on the surface of the lake. It was even proposed to place a restaurant on the roof, but the idea was abandoned because of

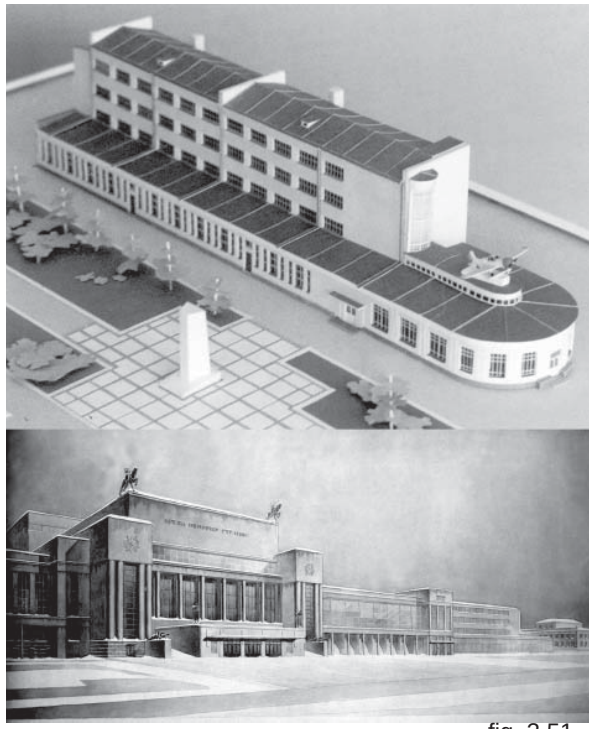


fig. 3.51

fig. 3.52

fig. 3.53

stable wind from the water. Two tall steel masts at the "bow" and "stern of the building (the mast near the bridge was meant as an elevator to the viewing platform) had not been executed. The remaining four-storey part of the first block had rooms for administration, medical services, household sector arranged in a corridor. Communication with the second block was ensured through an overpass at the second floor level.

The second block, designed by Sokolov accommodated gymnasiums and changing and shower-cubicle rooms adjoining them (fig. 3.53). Its façade divisions rhythm is quieter than in the first block, but the naval theme is continued here as well. A line of portholes stretches along the ground floor, and the whole complex ends in a rounded-off "stern."

The dynamic, emotion-filled shapes of the water-and-ski station are an example of practical implementation of symbolic romanticism in new architecture. In the same period another sports society The Trud (Labour) also built its water station on the bank of the Verkh-Isetsky lake.

Stadiums construction was understood by Sverdlovsk architects as a task of primary importance. The network of sports stadiums in the Urals was undeveloped, and this gap had to be liquidated in the process of the Greater Sverdlovsk growth. The socialist type of a stadium had been worked out by then and realized in the 20s in Moscow, Kharkov, Odessa and several other cities of the USSR.[31] It was based on the knowledge of the history of sports constructions and their types development and the practice of stadiums designing on foreign countries. In this case, stadiums in the countries of the West and America presented both positive and negative experience for the Soviet practice of such structures building. Among the positive aspects were quality of works, technical level, functional zoning and amenities. The negative side of a "capitalist stadium" was seen in creating an ideologically hostile show in spectators' seats arrangement:

"A capitalist stadium, with its multi-tier spectators' stands encircling the demonstration core from all sides works as a commercial enterprise, directing and fixing the spectators' attention exclusively on the scene of action. It absolutely excludes from view the surrounding nature, it isolates nature from the spectator, building up a feeling of confinement, stopping every initiative, activity and manifestations of mass collectivism."

Proceeding from this, the features of a "socialist

fig. 3.54

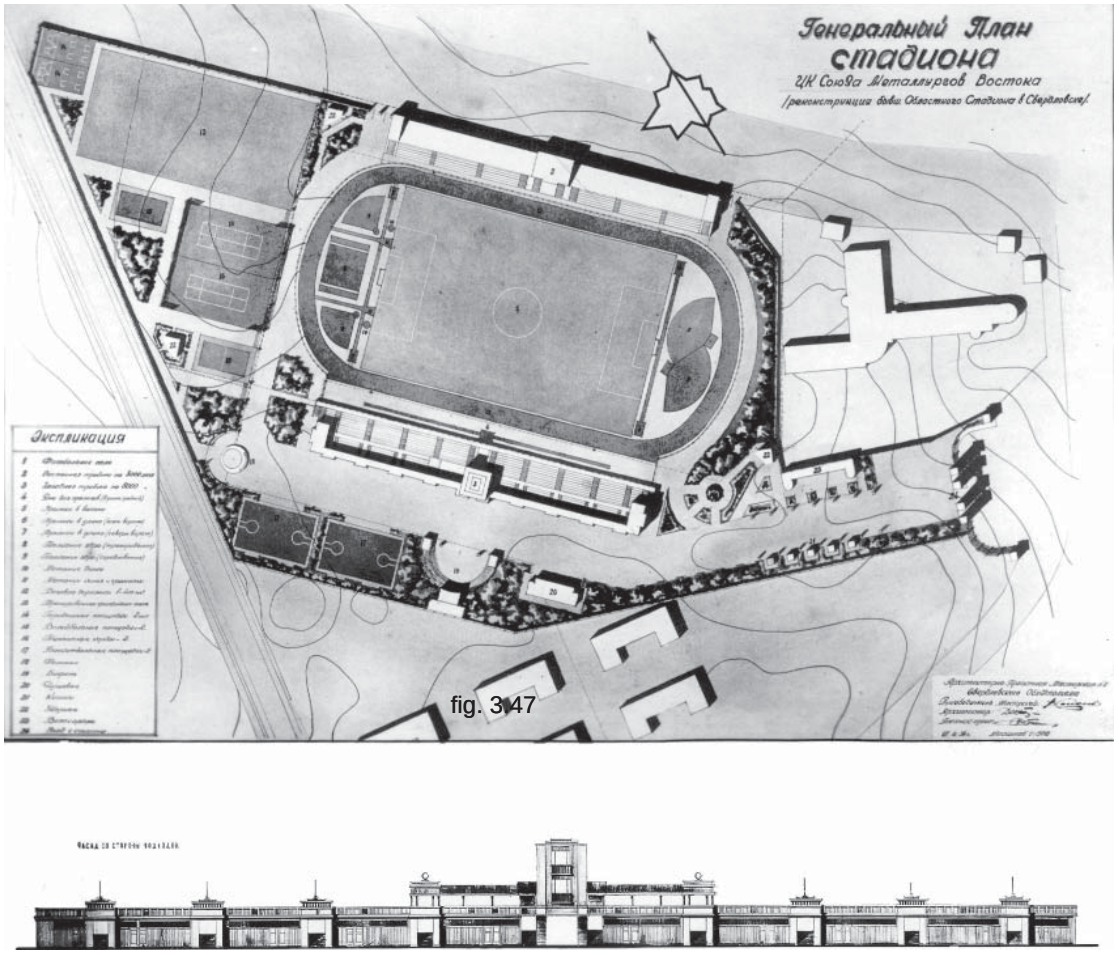


fig. 3.47

stadium" for involving labourers in physical-culture activities:

- a stadium must be equipped to host various-scale mass cultural events;
- it must provide opportunities for consulting work and personnel training;
- it must offer elements of entertainments and sports activities and recreation of labourers;
- it must provide facilities for training and passing examinations for GTO badge (Soviet fitness complex "Ready for Labour and Defence");

The task was to design a socialist type of a stadium to function under the natural and climatic conditions of the Urals. Selecting an appropriate site for building a stadium was very important. For example, a site located near a natural water body allowed to concentrate cultural activities near and on water, and in winter, to cut down expenses on making open skating-rinks. Natural relief of the terrain eliminates the need for building concrete spectators' stands: "this brings economy on material resources, cement and iron in particular." A unique implementation of such type of design is represented by the "Metallurg Vostoka" (Metallurgist of the East) stadium complex built in 1935 in place of a cycle track, near the western end of the Lenina avenue (fig. 3.54). Avant-garde style shapes were executed in timber. After the fire of the timber stadium, the city Central stadium was built in its place in the 50s. It presented a striking example of the architecture of late neo-classicism.

Medgorodok – The Medical Institutions District

With the Medgorodok complex began the development of the western end of the Lenina avenue. It also became an important landmark in the practice of hospital construction in Sverdlovsk. According to the Greater Sverdlovsk layout, Medgorodok

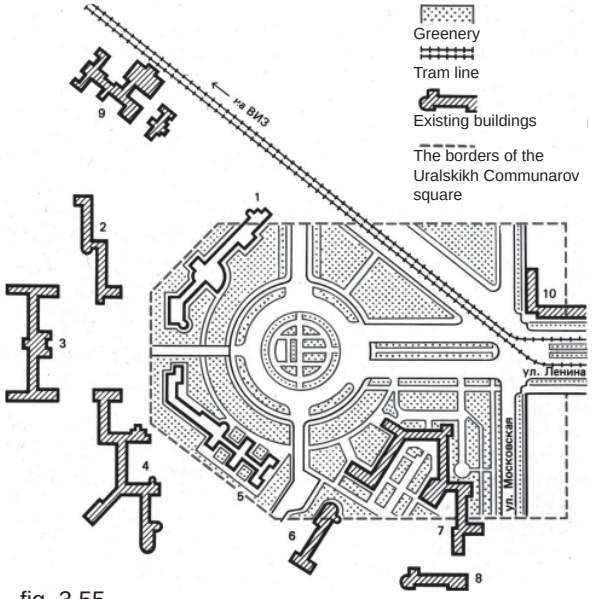


fig. 3.55

had to play a role of a town-planning hub in this part of the city (fig. 3.55). The layout and the basic concept of complex design belong to the known Sverdlovsk architect G. Golubev and his partner E. Kats. In their project, the territory of Medgorodok ocuupied the area within the Moskovskaya and Popova streets, and the Verkh-Isetsky plant site. The Repina street cut the complex in two major parts, the Institute of Physiotherapy and the Greater Sverdlovsk city hospital.

Medgorodok construction began in 1929, and already in March 1930, the ceremony of opening the Institute of Balneology and Physiotherapy took place (fig. 3.56). Later construction of the complex continued, but according to a reduced plan, with

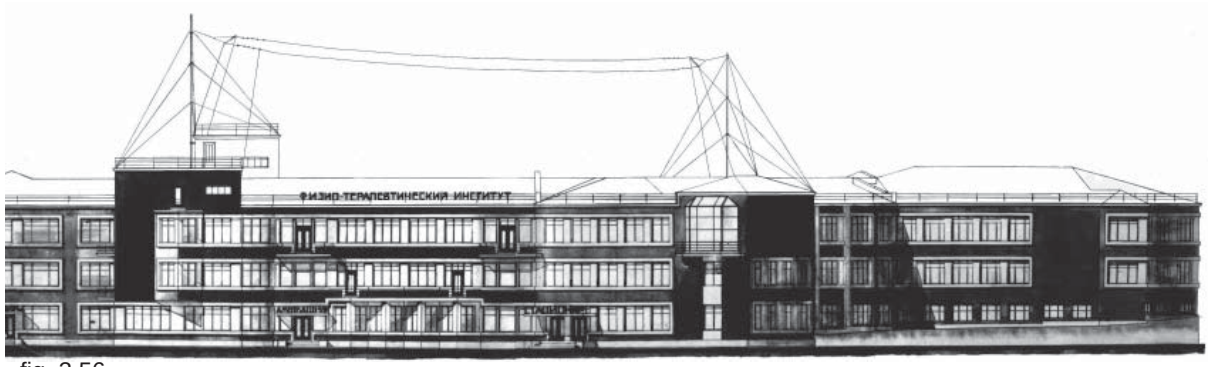


fig. 3.56

significant changes. Thus the fact that the project of the Institute of Physiotherapy was executed completely as per the project is explained by the fact that it had been the first significant object of the "health factory." The multi-specialist medical institution was based on the latest architectural design ideas, as well as on a new approach to medical treatment "technology." Beside medicines and the proficiency of medical personnel, the healing effect was enhanced by the environment proper, which revived in patients the joy of life.

"Everything in this sunlit house has been very tactfully planned, beginning from rooms layout to wall painting, furniture and shapes of tableware used by patients. Flowers, a piano for the patients, elegant tables and chairs in the dining-room, comfortable arm-chairs in the air-bath rooms, mirrors in corridors, a library and thousands of other "brightening-up" strokes make the image of a hospital totally different'. Those were the years when socialism had really been an underlying idea in creating a social structure worthy of man."[32]

The complex of the Institute of Physiotherapy consists of an administrative and medical-treatment block, a laboratory block, and a living block. A garden in the internal area was had a square ground in the centre with four semi-circles at its sides. Combinations of semi-circles and rectangles are the main composition elements of the whole complex plan. The design of the administrative and medical treatment block is based on the scheme of communicating spaces. In the living block of the hospital, the types of patients' cells vary from spacious wards to isolated apartments. The complex overall design is dynamic. Varying height and complex cutting of blocks combine with asymmetrical rhythms of façades; window openings of different sizes and proportions are either grouped or separated with stucco bars contrasting with the background colour of the walls. Asymmetric accents are achieved with the help of balconies and

triangular bay windows grouped both vertically and horizontally. Despite the prevailing compositional and program features of modernism, the stylistic influence of early Soviet neo-classicism may be felt.

The features of Stalinist empire style are even more vivid in the architectural image of the city hospital built later. The site layout strongly reminds the specimens of palace architecture of the 18th century. The site of complex polygonal shape is divided into zones by regular planning; in their turn, each of thee zones allows of its regular planning. An entrance esplanade of the hospital block is aligned with the axis of the Lenina avenue. A broad lane leads to the main entrance to the surgical building which was the first to appear in the hospital complex. Two symmetrical wings adjoining the central building form a classical court d'honneur. The entrance lane is flanked on both sides with identical in size end façades of a gynaecological block on the left, and a therapeutic block on the right. Today, they belong to the Mother and Child Care Institute (fig. 3.57) and the Occupational Diseases Institute, respectively. They plan view changes in the directions away from the central lane, acquiring less restrained configuration. The spatial composition of the buildings brings forth a semblance of an order system in avant-garde forms. This allows us to classify them as a specimen of a formalistic variety of new architecture. From the side of the Verkh-Isetsky boulevard, Medgorodok embraces the old Verkh-Isetsky hospital built back in 1824-26 after the project of architect M. Malakhov. The architectural plan of the hospital ensemble featuring symmetrical buildings arrangement in relation to the central axis is based on traditional principles of Russian classicism. The complex borders on the Repina street (then, the Moskovskii post road) with its building of the Medical Institute. The ensemble project included apartment houses for medical personnel and service buildings.

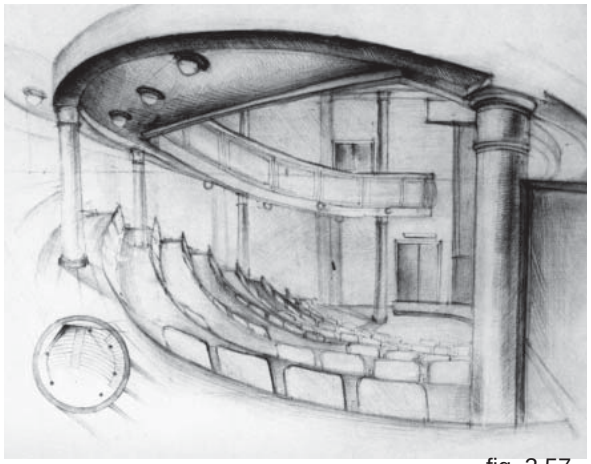


fig. 3.57

fig. 3.58

Gorodok Justitsii – the Justice Block

Gorodok Justitsii is a nonofficial but adequate name of a complex built around the same time in the immediate vicinity of Medgorodok, on the opposite side of the Repina street. Like Medgorodok, the complex presented a poly-functional structure of closely related elements. The block nucleated around the already existing city jail: this was reflected in the contrast of its modernist forms. Dom Justitsii (House of Justice) built in 1930 after the design of architects I. Antonov[33] and S. Zakharov (fig. 3.58) rose above the whole complex as its meaningful and compositional dominant. Since 1935, the building has been on the list of the best buildings of the city. The effect of spatial composition was enhanced by the projection of a massive semi-cylindrical tower rising to the full height of the parallelepiped of the principal eight-storey building. The authors dampened the effect of collision of two contrasting shapes by using banded glazing in the semi-cylinder and using the same banded glazing in the composition of the façade plane. The tower accommodateed the cen-

tral entrance stressed by the concentric steps of the porch and the circular canopy-balcony. Dom Justitsii occupied an elevated point of the terrain. Its entrance group faced the range of the Malysheva street. These factors taken together allow the building to dominate in the panorama of one of the two main streets of the city.

On the left of it a five-storey apartment house with a kindergarten in the inside area were built. The apartment house composition accentuated its corner part facing Dom Justitsii. The glazed vertical of the staircase semi-cylinder was balanced with the horizontal tiers of large corner loggias hanging over the pillared entrance portico.

The buildings of the Oblast Public Prosecutor's Office and the hospital for officers of the Department of the Interior were added a bit later. The Prosecutor's Office building plan view is distinguished for the variety of shapes and forms used simultaneously. At a first glance, the eye recognizes three major parts in the composition: the core with offices along a gallery, and entrance groups attached at the sides. The middle part resembles half of a horseshoe, the side pavilions are, however, difficult to describe in a word. The composition of one of them is based on various superimposed rectangles. The other pavilion presents a combination of rectangles, semicircles and circular sectors. The building general view is one of exaggerated partitioned structure disproportionate to its size: it has only two storeys, but the semi-cylinder of one of its staircases protrudes from the façade, separating in its turn the smooth and the rounded parts of the façade. It is interesting to notice that such examples of formalistic extremism, which had been in its prime in the early 20s, were still met in the building practice of the 30s.

The design of the hospital building in the Repina street was reiterated in the architectural concept of Dom Justitsii: the same combination of cylinders and cubes, with similar banded glazing along a smooth wall.

Due to the large city development projects at the beginning of the Lenina, Malysheva and Repina streets realized in the 1920s-30s, this part of the city might be justly called one of the main reserves of modern Ural architecture.

VTUZgorodok – The Technical Institutes District

The main street development in the opposite direction, to the east, was completed with the Ural Polytechnical Institute complex (UPI). Its construction started in 1929. The educational and other buildings within its structure gave rise to VTUZgorodok, one of the largest complexes in the practice of building higher educational establishment complexes in Russia. Beside UPI, VTUZgorodok had several technical higher educational establishments and an industrial academy on its territory. In 1934, part of technical higher educational establishments joined the UPI as faculties. So the Sergey Kirov Ural Industrial Institute was formed, and so it functioned until the war.

fig. 3.59

The location for erecting the campus was selected in the Zelenaya Roshcha (Green Grove) forest, where along the main street axis, back in the 1916, erection of the Mining Institute complex had been started (fig. 3.59). The project was abandoned during the revolution. But the Lenina avenue grew in length by a kilometer. Later, the name VTUZgorodok became the name of a whole residential district that grew along the Lenina avenue beyond the Vostochnaya street and the railway.

The Government's decision of 1927 on erection of a single complex of the UPI on the site of the

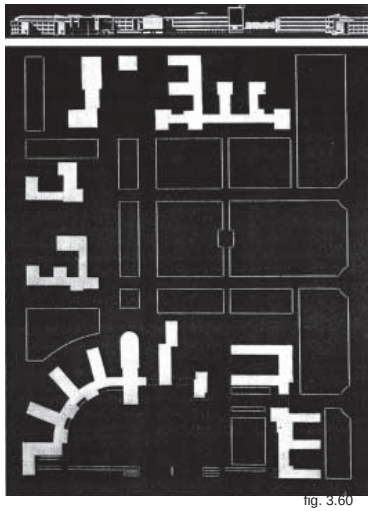


fig. 3.60

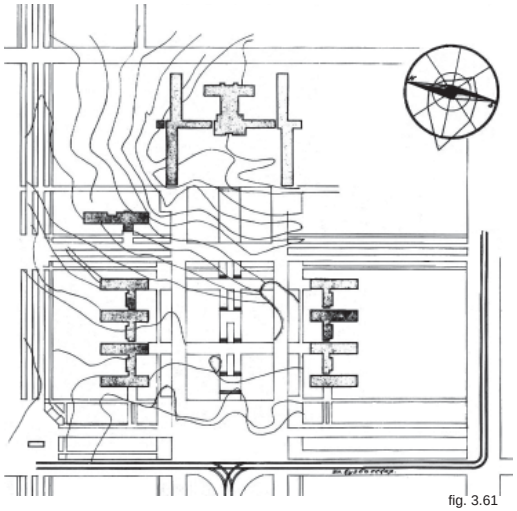


fig. 3.61

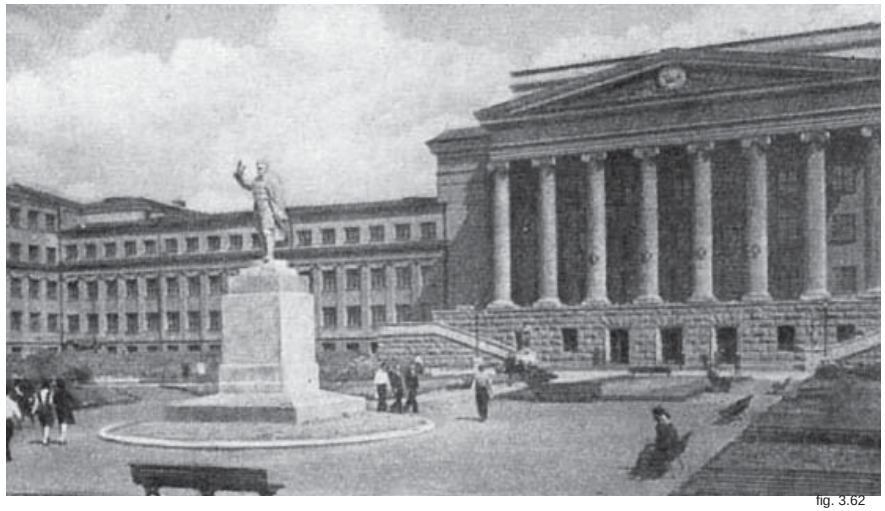


fig. 3.62

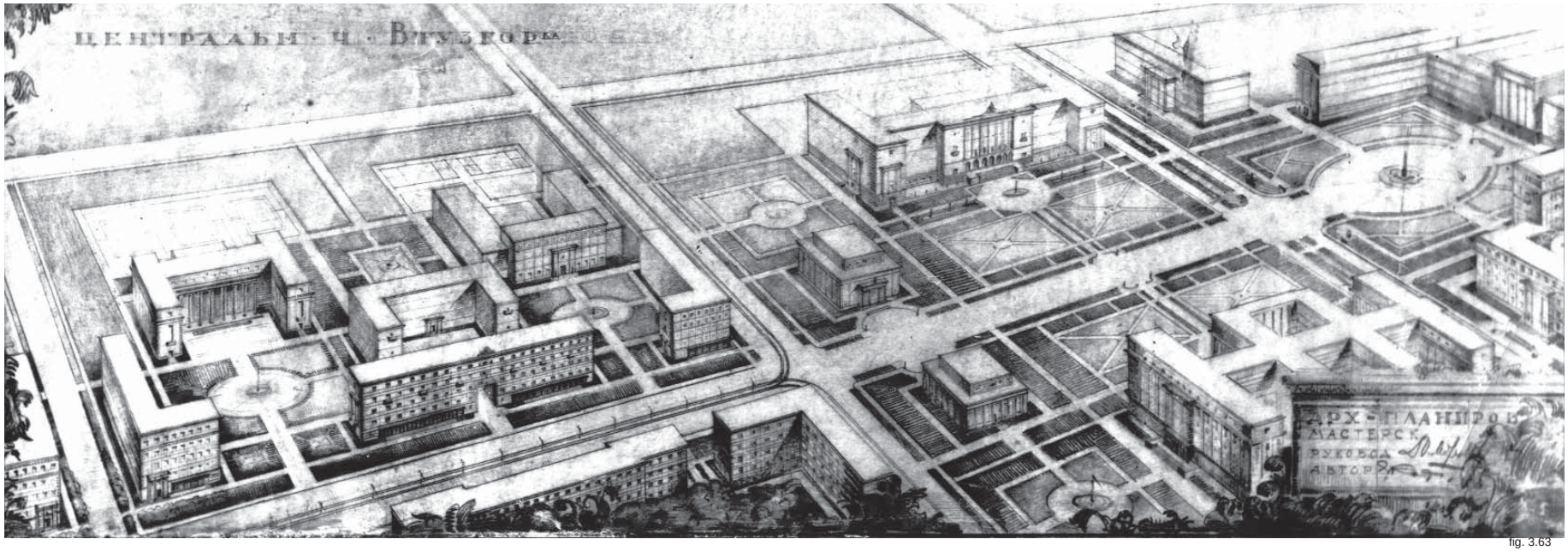


fig. 3.63

abandoned Mining Institute project was based on the conclusions of the commission of the Council of people's Commissars of RSFSR about the impossibility of carrying out the curriculum with the institute's branches being scattered all over the city. An all-Union competition for project design was announced. The project by Moscow architect S. Chernyshov won the first prize in a competition against 17 other proposed projects. His concept of layout, the designs for the main educational building, a metal working shop and a chemical pavilion were selected as a principle draft for the further elaboration. Six more projects were also awarded prizes, and ideas of the latter projects were borrowed for the subsequent designs.

Among the awarded projects was the design of Leningrad architects L. Rudnev, I. Fomin, E. Levinsky and Ya. Svirsky.[34] In their variant the main educational buildings formed a peculiar asymmetrical avant-square (fig. 3.60). An arc-shaped wing with the rhythmically added prisms of the lecture-rooms and completed with the high volume of a stack formed the square on the northern side. It was compositionally counterbalanced by a comb-shaped faculty building, located on the other side. The set-backs in the buildings connected the avant-square with a spacious inner-court behind them. It is noticeable that the façade decision of the whole expanded and plastically reach complex missed a compositional core. In substance, this core outlied the buildings; it was positioned on the avant-square. Rudnev and his colleagues created it this way intentionally. By this they tried to stress the importance of the surrounding space that they treated as an equal element of the architectural composition. In all aspects it was an avant-garde design.

Finally in 1929, by ordinance of the Uraloblispolkom, architects K. Babykin, A. Gorshkov and A. Kats received the task to work out the final version of the institute complex layout, determine the scope of construction works and take up supervision of VTUZgorodok construction (fig. 3.61). The general layout they had presented had a rigid, almost mirror-symmetrical structure, with auditorium blocks forming a large square at the end of the Lenina avenue, which was named after S. Kirov.

The highest point on the Lenina avenue, locking it, was occupied by the main UPI building. It was designed by G. Volfenzon, N. Utkin and K. Babykin and presented the compositional centre of the whole complex. In 1934, the physical-technical faculty (K. Babykin) and the chemical faculty buildings appeared on the southern side of the square. The same leading trio of architects designed the chemical faculty building; in this case the project submitted for competition by S. Chernyshov was used as the base. According to layout, the building on the northern side of the square had to symmetrically repeat the opposite southern side, but was changed both in spatial arrangement and in plan view in the course of project development by the author, architect P. Volodin. The building was initially meant for one of the research institutes, but after the war it was given to a Suvorov military school.

The initial project envisaged high-speed methods of the complex construction, with the use of standard elements and pre-fabricated structures. So, all lecture-rooms were designed to one standard. The customers, however, did not agree to such unification, and construction continued by conventional methods.

Construction works on the UPI building sites continued from 1929 to 1956. The complex, initially conceived in the new architectural style, became so transformed in the period of its construction that by the moment of its opening presented a specimen of pure neo-classicism (fig. 3.62). The central part of Vtuzgorodok district, that later formed the last piece of the Lenina avenue from Vostochnaya street till the Kirov square stylisti-

fig. 3.64

cally sustained the image of the UPI complex (fig. 3.63). In 1956, the Kirov square was re-planned after the design of G. Shaufler.

Simultaneously with the UPI educational buildings, housing construction for students and professors began in 1929, on the continuation of the Malysheva street, along its southern side. Together with the new buildings, newly planned streets appeared. So, the five student hostel buildings designed at the planning department of Gorpromkhoz occupied a block between the Kominterna and Komsomolskaya streets. With their characteristics, the five-storey buildings correspond to the new architecture style. They are arranged with their ends facing the main street, the same buildings accommodate tower-shaped staircases at ends, opening into storey-long corridors. In each building, consumer services are arranged in the ground floor. Hostel façades are extremely ascetic.

The architectural design of the professors' apartment complex, situated on the Stalina (now Mira) street, conveys the idea of a privileged position of its residents. The project authors, architects Reisher and Turychev, paid special attention to the design of the block nr. 3 (fig. 3.64). The sectional-type apartment house rose at the crossing of the Malysheva and Stalina streets, the Stalina street leading directly to the square in front of the UPI main building. The authors played on the corner position of the professors' house. Two building blocks standing along the Malysheva and Stalina street were connected with the tiers of large square terraces-loggias protruding with one corner resting on one additional pillar. A common entrance under the loggias serving two buildings was therefore arranged diagonally. Loggias were cut across by diagonal partitions, so the adjoining apartments had access to a triangular half of a loggia each. The same method of adjoining balconies with a separating partition along the vertical axis of the entrance is used to organize other entrances to the building. Here, the balconies feature standard forms. The project by Reisher and Turychev was realized practically without change, except for increasing the building height from three to five storeys.

The district behind the institute buildings complex developed quickly. In 1935, automatic bakery "Avtomat," and in 1937, shoe factory "Uralobuv" with ajoined residential areas were commissioned. On the contrary, development of the swamped grassland area between the Vostochnaya street and the Kirov square had long remained beyond control. Illegal houses grew along unorganized roads leading from the central part of the city to VTUZgorodok. The only exceptions in this construction chaos were the buildings of the railway, building and motor roads engineering colleges. VTUZgorodok construction was completed in the post-war period.

Uralmash Residential District – An Example of an Implemented Sotsgorod

"In the year of adding UZTM into the group of operating enterprises of the country (1933) it was no longer considered that employees of the plant lived in just a residential district, it was regarded as a comfortable sotsgorod, as it was named at that time"

V. Anfimov [35]

The Ural Heavy Machine-Building plant (UZTM) was one of the new industrial objects the Soviet government planned to erect within the scope of the industrialization program. It was meant to become the first-rate machine-building centre of the whole Ural-and-Kuznetsk industrial complex. In search for an appropriate site for the giant plant, possibilities were discussed of its placing on the base of the old Verkh-Isetsky plant, then in Cheliabinsk, or in Nizhny Tagil. As a result a site was chosen outside the northern boundary of Sverdlovsk, near the lake Shuvakish, known as Arkhiereiskaya dacha (Bishop's wood lot).

The plant's official foundation date is the beginning of construction of the reinforced concrete structures shop on 15 July 1928, despite that construction of the plant and the adjoining residential zone had begun since 1927. In 1928, construction of a machine-repair shop began. Construction of steel and iron casting, thermal treatment, toolmaker's, pattern-making, machining and forge-press shops dates back to 1930.

fig. 3.65

According to the Greater Sverdlovsk layout, adopted at the end of the 20s, Uralmash was conceived as an industrial-residential zone within a system of similar zones forming the city in its development in the northern direction, chosen as the prevailing direction of Sverdlovsk growth. The group of authors of the layout led by architect S. Dombrovsky proposed a scheme of Sverdlovsk development "… by the type of a large grouped city comprising a series of residential neighbourhoods organized on their own production bases and united by production plans and a single system of communal-consumer and socio-cultural services."[36]

Evidently, these ideas were implemented in the Uralmashzavod residential district layout. The layout of the residential area itself followed the standards based on the sotsgorod concept. According to these standards, 50 percent of areas of the Uralmash residential community were allocated for residential buildings; 35 percent, for planting of greenery and to provide maximum air and light for dwellings; the rest were streets, alleys and squares. Instead of traditional residential blocks large neighbourhood units were built, limited by arterial roads. To ensure maximum buildings aeration and lighting, buildings on the sites were to be arranged in compliance with the relief of the terrain, optimal orientation and comfortable organization of internal areas. Here, the influence of the garden city and microraion concepts may be traced.

By 15 July 1933, the date of official celebrations of the plant opening, it already had an adjoining residential area of 18 residential blocks with a network of consumer services buildings, a movie theatre, a bathhouse and a club (fig. 3.65). Uralmashstroi (Uralmash construction project) was the first in the Ural construction practice where a series of innovations found application earlier than on other construction sites, such as use of precast

fig. 3.66

concrete construction elements and locally available construction materials (fig. 3.66).

"It was one of the best-looking plants I have ever seen. The first mechanical department was a beautiful piece of work. A building a quarter of a mile long was filled with the best American, British, and German machines. It was better equipped than any single shop in the General Electric Works in Schenectady. There were two immense lathes not yet in operation. I could not figure out then what they expected to make with lathes as long as ferryboats. Later I found out that they were used for turning gun barrels. [..] The foundry was likewise a beautiful job, Completely mechanized and laid out according to the latest American technique."[37]

Before going deeper in the study of the architectural and town-planning phenomena of the Uralmash plant and sotsgorod, let us take a closer look at the people who created it.

Ural Section of OSA

The project of Uralmash was carried out by Uralmashinostroi, a department of the largest Sverdlovsk design-and-construction organization Uralgipromez. The plant-construction group was headed by architect M. Reisher while architect P. Oransky gave leadership to the town-planning group (fig. 3.67). The most important circumstance was that on the base of this department, consisting mainly of beginner architects and engineers, a group of the Ural branch of OSA was formed. It was not by chance that exactly the Uralmash builders became the initiators of wide-scale introduction of constructivist ideas both in Sverdlovsk and in the whole Ural region.

The Ural disciples of modern architecture raised their voice for the first time in an open letter to the OSA leadership published in *SA*.[38] Its author, architect I. Robachevsky, requested, on behalf of a group of like-minded architects, permit from the OSA leadership to organize an OSA branch in the Urals. As substantiation of this idea, he told about the work already done by the group of young ar-

fig. 3.67

chitects and engineers of Uralgipromez.

"I am sending you, following preliminary discussions with you of engineer Kartashev and engineer Balakshina about organizing in Sverdlovsk of a branch of OSA association, photographs of part of the works carried out by the group in the reported period of construction. […] At present, the group of four people is involved in a work on designing and developing a project of the Ural machine-building plant; our assignment includes design of all shop buildings, or 80 percent of all plant's buildings."

The list of 12 group members attached to the letter included the names of Uralgipromez employees, workers of the Regional engineer's office (Okrinzh), and professors and undergraduate students of the Sverdlovsk Technical Institute (STI).[39] Modestly, on this list I. Robachevsky named himself as an Uralmashinostroi architect, and signed

the letter as representative of the group. In fact, Robachevsky was the supervising engineer-architect of Uralmashinostroi and had the most practical experience of the whole department.

The OSA leadership met the initiative favourably, and the Sverdlovsk branch registration took place with minimum bureaucracy. Hardly two months after, at the first conference of the Association of Modern Architects OSA in Moscow, Robachevsky reported about the activities of OSA in the Urals.[40] It was a story of a close group of young specialists sharing a common constructivist ideology and stepping on a difficult path of winning professional acknowledgement in the conservative environment of building organizations. The difficulty of the task was in that, in Sverdlovsk, large construction organizations, such as Uralgipromez and Uralpromstroi, concentrated the majority of skilled architects and engineers from the Urals and big centres like Moscow, Leningrad and Kiev. No wonder that recognized specialists, using support of the management, gained priority in distributing and carrying out design works on all more or less important objects.

In 1927, young Uralgipromez specialists refused to accept the situation any longer, and demanded that the administration give them the opportunity to demonstrate their own professional qualities. "Such an occasion occurred in July and August. We did the job, and since then the Gipromez administration started showing certain interest in our work." The group, encouraged by the first success, doubled the efforts to win recognition, simultaneously concentrating on ideological work within the group. In the period between July and October, the group received a large order for designing objects at the Ural machine-building plant. However even here not all terms were acceptable: initially it was supposed that work would be carried out jointly by a group of young Sverdlovsk specialists and a Leningrad group including mainly graduates of the Arts Academy. At some moment, work was supposed to be carried out on a competitive basis, but the idea was soon abandoned due to lack of time. Further, the group displayed a rigid strategic policy in relation to Leningrad colleagues.

"We waited to be offered participation in our work, but rejected it point blank by saying that we are different people, we see our goals differently. It was decided finally that we do the work, and our main task was to seize a dominating position and display our capabilities. As a result of the work done, our position in Gipromez changed strongly and to our advantage. At present, we expect work related to the machine-building plant to be assigned to the group. We are, at the moment, completely free from the influence of the opposing party."

So, by drawing a delimitation line between themselves and other Uralgipromez workers, the group established its ideological position and started looking for supporters in other organizations. Work along these lines went both in terms of ideology, and, more important, through disseminating the latest information from the largest construction sites of the country. This was done in the form of lectures, like "Report on trips to construction sites of the USSR: the South, Leningrad, Moscow and Central district," "Housing construction in Sverdlovsk in the last years," "Construction of Donbass, Makeevka, Stalingrad plants." Besides, educative lectures on subjects "Modern trends in architecture, "Modern timber structures," "The problems of apartment house" were read for Sverdlovsk engineers. Robachevsky described such selection of lecture subjects as "done without a definite plan," but justified it by the need for "learning on practical examples."

It was this practical aspect that set Robachevsky's report aside in a series of other delegates' information reports. A representative of Kazan constructivists, for example, offered to the attention

of the conference the results of theoretical research of his group in design of an artistic work. A delegate from Leningrad discussed the problem of defining the position of OSA in the academic environment of the Leningrad Institute of Civil Engineers, where a constellation of celebrated professors worked:

"We have a professor Benois – a European name. Certainly, such professors are valuable, but outdated. We have to base on Nikolsky. […] The only person who could have taken the side of students was Trotsky. There is also Serafimov, who has not yet taken our side completely and is still hesitating. The young generation may more or less accept Rudnev."[41]

In fact, discussions at the conference mainly boiled down to raising ideological rating among professors. It would be untrue to say that this problem did not worry Sverdlovsk architects. On the contrary, enthusiasm the young Sverdlovsk architects displayed brought them both supporters and opponents. "Talks about OSA in Sverdlovsk are worth attention. Many people say that this is a viable organization, others keep to the opinion that it is temporary, like a disease, and that OSA will naturally die." In Robachevsky's opinion, it was the establishment of the Ural branch of OSA that stimulated setting up a Civil Engineers Society by conservative architects in Sverdlovsk. A magazine dedicated to construction in the Ural oblast rejected two constructivists' articles: "one was turned down, the other one returned with the explanation that it could not be accepted for its being written in a 'foreign' language which needed translation." No one of the OSA members expected a different answer, since the editorial board consisted of the "representatives of old architecture." The invitation to enter the Society of Architects was declined as groundless and fruitless. Thus only practical work opened the greatest potential for the Sverdlovsk constructivists.

The Uralmashinostroi project became a fine practical opportunity. Work on the project unfolded in Uralgipromez, in cooperation with Tekhbeton. By the moment Ural group OSA joined the work on designing Uralmash plant, its general layout had been completed, and part of production buildings was designed by I. Golosov. Group OSA was assigned to carry out the architectural-construction part of the project of all shop buildings. Its authors: architect I. Robachevsky, engineers E. Balakshina and M. Reisher, technician I. Stadler worked under the general supervision of engineers F. Eikhe and V. Fidler. The latter was also the chief construction engineer of the whole Uralmash. Fidler gave big credence to the young architects of OSA. Even though he sometimes jokingly called the group "my kindergarten," he allowed them to work independently, finding the technical solutions by trial and error. This approach brought good results: soon the "kindergarten" made an efficient team. This is how M. Reisher remembered it:

"In our work there were no questions less or more important. Everything mattered; sometimes a little thing grew into major problem racking our brains. For example, I remember such a puzzle that today would look ridiculous: what sort of windows should we apply in the shops? Single glazing would be too cold, double glazing – too expensive... I remember, we sent Zhenya Balakshina with this peculiar question on a business trip along various construction sites of the country, she did not find the answer – at that time nobody knew it. And we designed single-sash windows with double glazing. Later it proved to be the most economic and effective solution for the shop windows."[42]

The Uralgipromez management gave young archi-

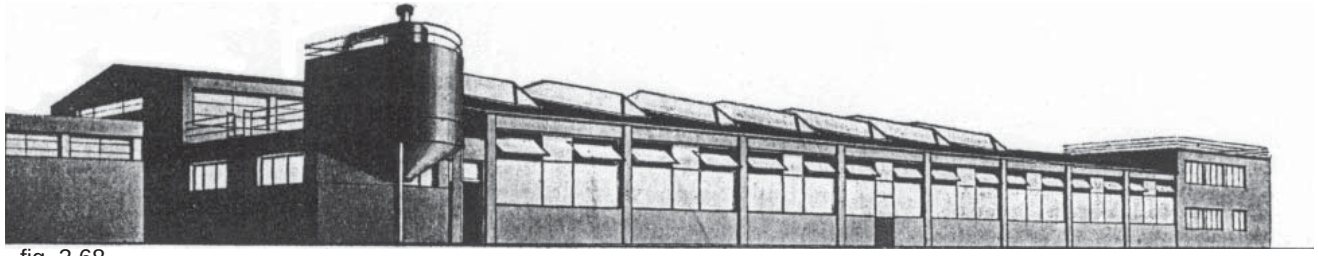


fig. 3.68

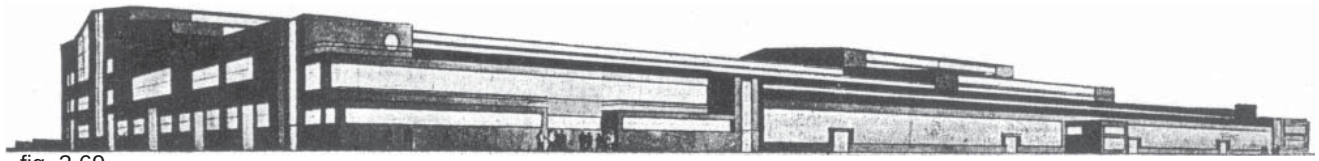


fig. 3.69

tects the opportunity to apply for advice to other members of OSA. Such a collective approach ensured consistent use of constructivist methods of design. Despite that Robachevsky refered to the work of his group a "not quite within the OSA lines," application of the functional method is clearly visible both in the design and the technical outfit of the Uralmashzavod shop buildings.

In the first place, transport and human flows were clearly separated: workers got inside through the ends of industrial buildings looking out on the central plant's alley; railway approaches were brought to the buildings opposite ends. The latest achievements of Soviet and foreign practice were used in shops outfitting. Also, the scale and multi-bay structure of shops was a new idea implemented in the production buildings. Each shop layout was based on the process going in it. A system of local servicing of workers was used: ancillary structures with changing-and-shower cores, recreation and snack-rooms were attached to both ends of the shop buildings. Machining shops were mainly one-storey, accommodating three production lines stretching over the building length. Uniform and sufficient lamp lighting was ensured in compliance with the new American lighting code (fig. 3.68). A system of plenum-exhaust ventilation through "simplified Pond's" floor girders was used in metallurgical shops (fig. 3.69).

As an experiment, for the first time use was made of large-block elements: part of one of the shops was built of "pre-fabricated solid frames."[43]

P. Oransky's Method in Design of Sotsgorod Uralmash

The early drafts for sotsgorod Uralmash came, as usual, from a competition. According to different sources, several famous names participated there, although those names remained unknown. Nevertheless, all of the entries were distinguished by schematism. For example, one of the drafts presented an open plan with rectangular-and-lattice structure, opposing the plant territory. Obviously, the question of work accessibility was not deliberated there. Even the winning draft that was approved for implementation in 1927 did not escape the same shortcoming. It showed a radial-and-circular structure, concentrated around an administrative square. The three main axes of the settlement led to a point that was shifted one kilometre to the west from the plant entrance check-point (fig. 3.70). For an unknown reason this plan was either rejected.

Finally the sotsgorod layout was assigned to the town-planning group of Uralmashstroi. As it was already mentioned, architect P. Oransky led the group. Even as a young graduate of Leningrad Arts Academy, Oransky had already shown a

fig. 3.70
A competition entrée for the sotsgorod Uralmash, awarded in 1927.

great professional potential. Therefore he came in view of Fidler and Robachevsky, the two supervisors of the Uralmash project who travelled in 1928 to Leningrad in search for good specialists. Oransky was invited to participate in the design of sotsgorod Uralmash and accepted the business proposition. Owing to the talent of this architect the layout of sotsgorod Uralmash gained its famous shape.

The first draft of sotsgorod for 100,000 residents was completed in 1929 (fig. 3.71). It was the time of maximum popularity of sotsgorod idea and most consistent implementations of the idea in the competing construction projects of new cities. In his work, Oransky set the task to synthesize the experience of different town-planning concepts and use it in solving the practical problems of the project assignment.
First of all, Oransky emphasized the significance of the plant entrance. It became the focal point of the sotsgorod. From the previous project he borrowed the tri-axial scheme for the Uralmash layout. This well known scheme had been used many times in town-planning history. Oransky adjusted it for the optimal functioning of his layout.
The plan gave a new interpretation to the classical tri-axial scheme: it provided the connection between the residential and the industrial zones, which conveyed both functional and symbolic meaning. An industrial object had never before been playing the role of a town-planning dominant in a settlement system; on the contrary, more often than not it tended to be separated from the residential zone with a buffer zone of plants. The three main streets of the Uralmash sotsgorod converged in the plant entrance square. The central street leaded to the main check-point and continued on its other side as the main street of the industrial block, with the plant buildings standing along this street turned to it with their end sides. Stretched from north to south, the central street (presently, Ordzhonikidze avenue) also created a spatial axis linking Uralmash with the centre, which was also oriented to the cardinal points.

The main – Pervoy Pyatiletki (First Five-year Plan) square combined the functions of a plant entrance square, a transit-transportation junction and a district garden. Beside the role of a ceremonial entrance, the square also reflected in its design the rational organization of the entire residential district. Its functions were clearly marked in the layout and the components formed a single ensemble. For that the buildings on the square were designed simultaneously with the layout. The ensemble of the Pervoy Pyatiletki square was mostly completed by 1933. Let us consider it in details.
A large arterial road, the Mashinostroitelei street crossed the square from east to west (fig. 3.72). Along this street, via the Pyshminskaya road (today, the Kosmonavtov avenue), Uralmash was connected with the city centre. While proximity of the residential and industrial zones lied at the base of the concept of the sotsgorod Uralmash, the Mashinostroya street passed between them as a single line parting the square in two zones: one belonging to the plant entrance, and the other, to the sotsgorod.
The plant entrance part was given nearly square shape. In front of the plant entrance checkpoint, a regular park was arranged. On the right from the entrance, the square was limited by the sober volumes of the laboratory building. The checkpoint itself had a horizontal outline with a vertical accent of a round-shaped staircase (fig. 3.73). On the left side of the square the plant management building

fig. 3.71

fig. 3.72

fig. 3.73

fig. 3.74

fig. 3.75

rose. This example of functionalism was designed by B. Scheffler from Bauhaus (fig. 3.74).[44] Generally this part of the Pervoy Pyatiletki square has represented avant-garde in its diversity.

The settlement part of the square was outlined by three axes of Uralmash main streets and therefore it became almost trapezium-shaped. Being of almost the same depth, the settlement part grew almost three times wider than the plant entrance part. A city transport junction was located on its eastern border. The beginning of each of the streets of the tri-axial scheme, as well as the points crossing of the Mashinostroitelei street with the square were marked with large-scale residential and public buildings making a presentational start of their viewing in perspective. Together they made a rich collection of specimens of architecture of modernism and socialist realism.

The wedge-shaped piece of land between the Mashinostroitelei and Kultury streets was occupied by a fashionable building of hotel Madrid erected in 1933. In this project, P. Oransky had B. Scheffler and V. Bezrukov as the co-authors. In 1937, the building façades were designed in accordance with the aesthetic postulates of Soviet neo-classicism. On the opposite side of the Kultury street the L-shaped Tekhucheba (technical school) building was erected in 1932 after Scheffler's design. With its monumental corner composition, the building accentuated the turn from the Ordzhonikidze street to the square (fig. 3.75). The Ilyicha street panorama was opened from two sides by standard residential complexes built in 1931. Their apartment house end faces standing on the frontage line give the street a clear-cut metric rhythm.

Selecting a tri-axial scheme composition, Oransky realised the difficulties emerging in case of application of classical schemes in the layout and its consequences: stiffness of lines, similarity of elements and, consequently, cheerlessness and aloofness of the street environment. He found the ways to overcome these drawbacks. In Oransky's project, each of the three main streets received an expressed individual image. Such individuality allowed the viewer already from the initial point, from the square, to understand the functional meaning of each of the streets, which facilitated the choice of the direction.

We have already discussed the important role of the Ordzhonikidze avenue as a compositional axis oriented to the old part of the city. Definitely, the viewer notices the visual link of the square with the plant entrance, but logically, centricity is associated with ceremonial approach. The Ordzhonikidze avenue presents a public axe of the district. The service institutions, such as schools, a nursery, a hospital are concentrated on the avenue or in the adjacent areas.

The dwelling complexes opening the Ilyicha street also reflect its purpose. Here, the residential street privacy is noticeable already in the distance between the red lines reduced almost by half compared with the Ordzhonikidze avenue. The street begins in the NE corner of the square; at its opening the square forms a recess playing the role of a vestibule between the public space of the square and the privacy of the living street zone. Here we have to say a couple of words about the dwelling complexes forming the street and the neighbourhood around it. This neighbourhood has got its specific appearance already in the first draft of 1929. All its residential blocks were formed by apartment flats laid out in a comb-like orthogonal pattern. Initially all residential blocks adjacent the Pervoy Pyatiletki square consisted of such dwelling complexes with various patterns based on the comb system. In the later versions Oransky left the comb only to the blocks around the Ilyicha street. Another remarkable detail here is that there were no zhilkombinats applied in the sotsgorod. Despite the idea of zhilkombinates was widely distributed, Oransky preferred to use the

fig. 3.76

microraion concept seeing the better potential of its infrastructure and public services.

The Kultury avenue presents an opposite to the Ilyicha street, and not just in its location in relation to the square. This longest and widest street of the tri-axial scheme is organized as a pedestrian boulevard. The NW corner of the street merges with the beginning of the boulevard, so that it becomes impossible to see the line where the square ends and the street begins. Without doubt, the Kultury street has all the features of a culture and recreation zone. The boulevard panorama is designed with account for a pedestrian pace. Just like in the previous two cases, only the part near to the Pervoy Pyatiletki square was implemented before the war. But the implemented residential and public buildings are marked for high quality of architectural design. The right of the boulevard side is formed by a residential block. Oransky himself designed it in neo-classic style and arranged the building according to monumental system. The opposite left side starts with the above mentioned hotel Madrid and continues with the Engineers club. The club, designed by Scheffler, makes another splendid example of functionalist architecture in the sotsgorod Uralmash (fig. 3.76).

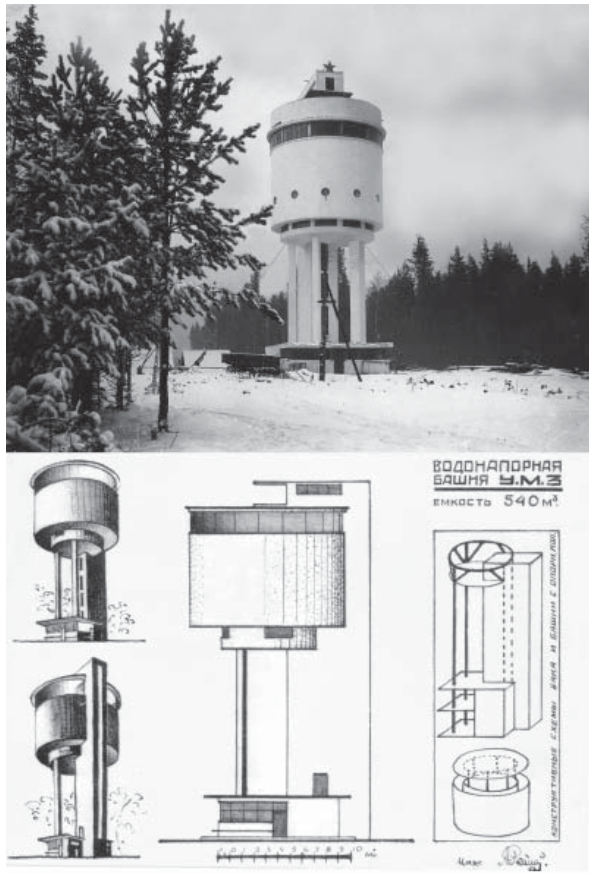
According to the project, the boulevard leads to a stadium located on the border of the Shuvakish forest-park. However, due to the orientation norms established for sports buildings, approaches to the stadium central entrance are placed diagonally in relation to the boulevard axis, and therefore cannot be seen from the boulevard. The perspective is closed with a dynamic vertical of a water tower placed on the boulevard axis. It may be seen that the tower is placed at the point of intersection of the boulevard axis and the stadium longitudinal axis. This allows us to suppose that the tower was supposed to play the role of a "hinge" turning the flow of pedestrians from the boulevard to the stadium central entrance. The "hinge" effect is supported both by the cylindrical shape of the water tank and the circular outline of the adjoining square.

The UZTM Water Tower and its surroundings

The water tower deserves special attention, since from the moment of its erection it had become an architectural site of Uralmash district and one of its symbols (fig. 3.77). The tower has its own history. The reason for this engineering structure to appear was the need for water supply for the residential district under construction. While the problem of heating had been solved with fuel oil brought from other parts, electric power was supplied from VIZ plant, the problem of water supply remained unresolved. Water was brought to Uralmash district in barrels, on horse-drawn carriages. In 1928, I. Robachevsky proposed a global solution to the problem: building a water tower after an individual project. Such a tower would maintain permanent head in water mains of the district. The idea was approved by chief construction engineer of Uralmash V. Fidler, respite that the design phase time was running short. In this connection, a one-week express competition was announced between the design department architects. Architects V. Bezrukov, P. Oransky and M. Reisher took part. It is unknown what sketch projects of Bezrukov and Oransky looked like, we only know that on one of them was an engineering structure combined with apartments. The jury selected a draft by M. Reisher "for the original, logical and expressive design solution of an industrial object."[45]

Reisher's proposal was as brilliant as it was sim-

fig. 3.77



ple. It was based on intersection of two geometrical bodies: a prismatic slab of a staircase and a tank cylinder rose to a height of approximately one-half of the prism height. Thus the author made an attempt to ensure maximum dynamism of the entire structure and to confirm his idea of a minimum bearing points to "fix an object in space." Two thin concrete pillars gave the tank extra support. For lack of sufficient experience in work with reinforced concrete structures, the architect failed to substantiate the composition technically. So in further work, the tank received four "legs". In apprehension for the structure instability, engineer Fidler personally drew "legs" under the tank.[46]

At the top of the tower, Reisher made two observation platforms: at the tank roof and in a small console room on top of the staircase and the tank. There was logic in adding this function to the tower design, both due to the height of the object proper, approximately 29 meters, and considering its location at the highest point of the relief.

The tower façade composition was quite expressive: vertical bars of window openings contrasted with glazed cut-outs along the top and bottom of the tank, whose blind concrete wall has additional perforations in the form of round ports at the level of the tank inspection gallery.

It was decided to make the tower main load bearing and guarding structures from concrete. The tower erection was carried out under the supervision of engineer Prokhorov, leader of the earlier-mentioned Tekhbeton organization. Metal tank "Intze" of 540 cubic meters capacity was designed at a metal structures bureau under the supervision of S. Korotkov. For the first time in Ekaterinburg, riveting in the tank assembly was replaced by electric arc welding. The last welded seam was completed five months after commencement of works, on 5 June 1931. The Uralmash tower was also distinguished as having the largest tank in the world. It was probably for that reason that the tank failed in the first test: "One hour after filling the tank with water and signing an acceptance and commissioning certificate of the tower, the tank bottom unexpectedly arched, broke open, and hundreds of cubic meters of water rushed down the street washing off all obstacles on its way, including the armed militiaman on point-duty, who was carried 15-20 meters away from the tower."[47] Of course, engineer Fidler had to give explanations to NKVD. But this meeting took place not earlier that all consequences of the accident were liquidated.

After completion, the tower was whitewashed, so the name appeared: the White Tower. This name remained even in the years of the World War 1941-45, when the tower was painted in khaki color as a military-strategic object.

From the moment of putting in operation and up to the beginning of the war, the UZTM water tower was referred to in all technical manuals and reference books as a specimen of industrial architecture. So, from this moment on, the tow-

fig. 3.78

fig. 3.79

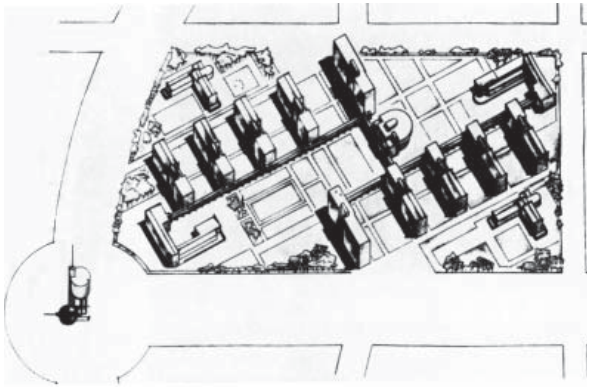


fig. 3.80

er became a prototype of a number of objects of similar application. The first in the series was the water tower of plant Krasny Gvozdilshchik ("Red nail-maker") in St.-Petersburg (8, Vasilievsky Isle 25th line) designed by architect Ya. Chernikov. A "white tower" is also present in the plant Sreduralmedstroi project. The thermoelectric plant building erected in 1931 on the territory of plant Uralmash formally repeats the tower composition. Another adaptation is located in Druskininkai, Lituania (fig. 3.78). Examples of borrowing are even found in foreign building practice, particularly, in one of the dairies in North China.

In the 1930s, the White Tower played the role of a spatial link between the central square and the large cultural complex in the Uralmash sotsgorod layout. All structures in the vicinity of the tower were oriented to it. In the first place, it is the above-mentioned stadium designed by P. Oransky. It was also supposed to use it as a trade or exhibition centre, after building a big top over its main arena.

In 1934, architect T. Zaikin designed another project of a stadium, which occupied a plot on the right-hand side of the Kultury boulevard, at its opening to the White Tower. The stadium was the first practical illustration of building a socialist type of a stadium under conditions of the Urals.[48] According to the project, the stadium layout had the form of a right triangle, with its two acute angles being truncated by two squares. The first square, with a workers' club, played the role of the main entrance. The other square was meant for servicing purposes, particularly, as a site for the future park of culture and rest. "Near the site right angle stands a water tower, near which terminates the boulevard leading from the plant. Its architectural features make it a good element marking a city site." A specific architectural feature of the project is that the terrain natural relief allowed the architect to arrange spectators' stands in an amphitheatre on earthen banks. From the point of view of typology, with its balanced combination of sports, physical culture, public and recreation sectors, the project also meets the existing requirements.

The final and implemented version of the stadium after de project of P. Oransky, B. Scheffler and V. Bezrukov occupied the above mentioned plot and kept some features of the layout by Zaikin (fig. 3.79).

It also known that back in 1931 I. Golosov, jointly with B. Mitelman, designed a "House-commune of UMS," a zhilcombinat for Uralmash plant, on the same site. In this design, the White Tower was the reference element of the composition (fig. 3.80). The combine compositional axis lied on the axis connecting the tower central point with the opposite corner of the building site, which also coincides with the EW orientation. Thus the apartment blocks arranged square to this axis

were looking to the north and south with their end faces. The zhilcombinat included eight building blocks for family couples and five communal services buildings: a club-canteen, two kindergartens (for 70 children each) and two day nurseries (for 120 children each).[49] The apartment blocks and children's institutions were arranged in two groups by the principle of functional link. The core of each group wais formed of rhythmically arranged apartment blocks for family couples. On the internal areas side their ends at the second floor level were connected with overhead passages supported by pillars. Galleries led to the club-canteen building located in the middle of the living quarter. On the opposite ends of each passage two similar day nursery buildings were located. The kindergarten buildings stood on the outside corners of the site, in the immediate vicinity of each of the two rows of apartment blocks. The dwelling blocks for unmarried residents were located closer to the club building in view of the fact that unmarried residents would be more frequent visitors of the public catering and social contact centres. The construction part of this project was designed by Tekhbeton. For a number of reasons, this design in the vicinity of the White Tower hadn't been implemented.

In the 1960s the tower stopped functioning as an engineering structure. Then for the first time, question arose of its further use. M. Reisher, in cooperation with a group of artists, proposed a project of placing a café in it seating 50 people, at a height of 24 meters. An ice cream / soft drinks kiosk and a viewing platform were supposed to occupy higher levels. The project was approved by the Uralmash management, but found no support of the chief architect's office.

Uralmash is an outstanding example of sotsgorod idea. There are but a few examples in the world practice when construction of such an important and large-scale object as a sotsgorod was carried out according to a single plan and in a short period of time – within a decade. The centre of Uralmash was implemented for the most part, as well as important buildings on the periphery. Together they served a strong framework for the further developments. The phenomenon of Oransky's layout success may be described as selective approach to design, or sociologically substantiated town-planning, but, in any case, it is evident that the author has managed to bring his idea to the customer in a clear and consistent language of architecture.

Departure from Constructivist Concepts

"These primitive roughly-shaped boxes must undergo radical architectural treatment in the years to come."

P. Volodin[50]

Abolition of the Ural oblast in 1934 coincides with the period of sharp criticism of the formerly prevalent constructivist trend. Even though, already from the moment of holding a competition of projects of the Palace of Soviets in 1932, the government's ordinances pointed to the need for eliminating the "leftist excesses" committed at overcoming economic dislocation of the post-war period, the new architecture principles were still openly practiced in the Urals on a length of several years.

Despite the fact that constructivism stood firm in the Urals, hundreds of kilometres away from Moscow, this could not continue long. The first sounds of "matchbox style" criticism rang in the local press already by the early thirties. The delayed moment of "unmasking" came in 1936. A verdict to Sverdlovsk architecture was announced in the article "Architecturnye Urody" published in

fig. 3.81

the Pravda.[51] Constructivism was accused of all failures and drawbacks in the architectural practice of Sverdlovsk in the years of the first five-year plans. In particular, the fact, that the general layout employed the method of decentralization, led to separation of the city to isolated parts. The article author S. Dikovsky established the fact that Sverdlovsk architects found themselves separated from reality and the changing necessities of life of the society:

"In Sverdlovsk, the classical heritage is still looked upon as a wolf that should not be set to guard architectural sheep. Columns, pilasters, pediments and arches are referred to by supporters of the single pseudo-proletarian style as some architectural lechery."

In the author's opinion, adherence to constructivist concepts was a symptom of professional indifference, and the only possible explanation to spreading of low-quality architecture, facts of dragged-out construction projects and commissioning of unfinished objects.

Paper Pravda was noted for specific "marksmanship in characterization," but its publications only continued a whole series of other publications criticizing construction practices in Svredlovsk. Criticism came also from Architectura SSSR, Architecturnaya gazeta, Uralskii Rabochii and other central and local media.

Prompt public reprimands reached the target pretty soon. The term "architectural monsters" stuck strongly to constructivist structures in the language of Sverdlovsk builders, including its creators themselves. The "well-deserved" rebut was destined to initiate the beginning of positive changes on Sverdlovsk construction sites, in de-

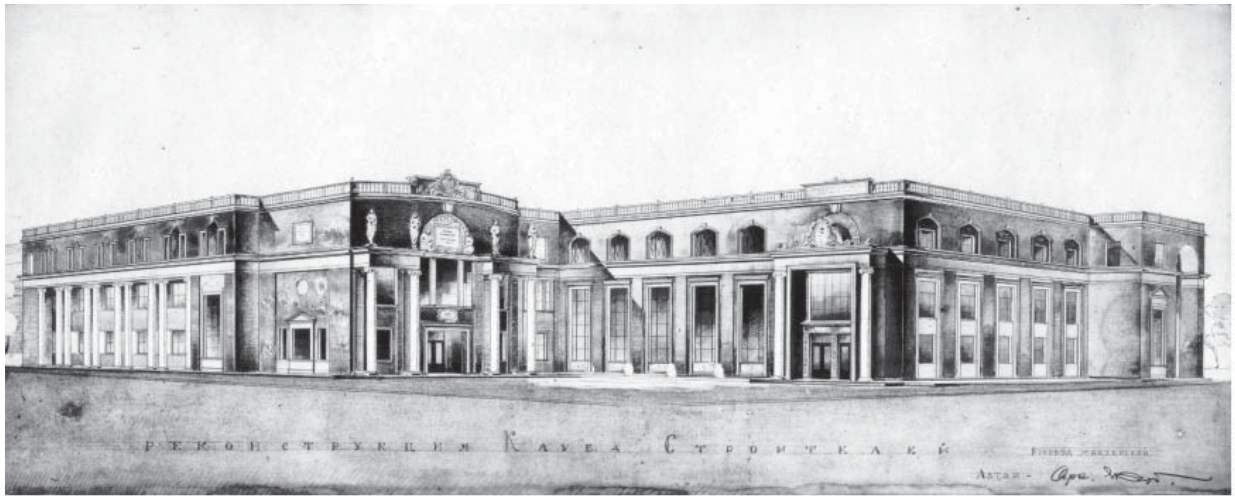


fig. 3.82

signers' studios and student classrooms. Yesterday's followers of constructivism acknowledged their guilt and, of course, showed readiness to rectify their mistakes. In the second half of the 1930s, Sverdlovsk architects were assigned the task of raising the aesthetic level of architectural design, refurbishing the façades of "box-style" buildings, improving the quality of construction works, building comfortable dwellings for people. And this assignment was thoroughly followed.

Such a protagonist of avant-garde architecture as M. Reisher has shown himself as an expert of classical order compositions as he was involved into a series of "aesthetical" makeovers in the city. Previously we have already discussed Reishers project of Gorsovet reconstruction in co-autorship with G. Golubev. The reconstruction of the hotel Bolshoy Ural façades was also on his account (fig. 3.81). Actually, all modernist buildings in the centre were supposed to undergo the makeover. But the financial cutbacks and the World War II made the plan unrealistic. Due to these circumstances the reconstruction of Club Stroiteley and the Dom Justitsii remained on paper (fig. 3.82).

Simultaneously steps were taken to restore communication of remote districts with the city centre.

"The main asks derived from the resolutions of the Party and the Government are: zoning, the network system of uniform cultural and customer services to workers, maximum convenience of transportation, architectural and artistic arrangement from the point of view of beauty of the city. It is necessary, in decorating our cities, to reflect in architecture the magnificence of the Stalinist era."[52]

It is only natural that transfer of architecture from avant-garde to classicism took place in Sverdlovsk with a several years' delay compared with the central regions, like in had been earlier with the coming of constructivism. It is important also that this transfer went gradually. The pre-war period in Sverdlovsk was characterized by structures that can hardly be classified or attributed to one of the other architectural trend.

Summary of the third chapter

In this chapter we could see how the strong administrative and economical position Sverdlovsk received between 1924 and 1934 resulted in a booming city development according to the methods of modernist architecture and town-planning. Here are the primary results of this development.

- The early works on creation of Greater Sverdlovsk layout were carried out mainly in accordance with the satellite system.
- The new Sverdlovsk layout structure was organized as a network of reference sites in the central part and industrial enterprises, around which administrative, residential, and public- and cultural complexes and recreation areas concentrated.
- Within the scope of creating the new city image, All-Union competitions were organized one after the other. Architects were offered a broad scale of activity for application of all kind of innovations in the field of administrative and public buildings construction.
- Reconstruction of the centre and development of new industrial areas went with the use of experimental architectural and town-planning units.
- An outstanding example of implemented sotsgorod idea is Uralmash residential district. Its author, architect P. Oransky, set the task to synthesize the experience of different town-planning concepts and use it in solving the practical problems of the project assignment. Here, the influence of the garden city and microraion concepts may be traced.

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EPILOGUE

Modernist Heritage of Sverdlovsk in Today's Ekaterinburg

The fate of the utopian ideas of modern movement in the USSR in the second half of the 1930s is well known. With the coming of the Stalin epoch they have lost their actuality, as those ideas did not coincide with the mission of the new government. Soviet architects have turned to the laws of the newly introduced aesthetics of socialist realism in their creative work and were guided by them for a long period. By the irony of fate, modernists who showed their contempt for all the previous architectural periods were doomed to the same sad lot. Avant-garde was a short but exclusively important period in the history of Ekaterinburg. Developments that took place there in the 1920s and 1930s, had both changed the appearance of the city, and significantly influenced its present general layout. Especially it counts for the city's longitudinal axis – the Lenina avenue. The buildings from 1920-30 make 12,5% from the total amount of buildings on the main street. Modernist buildings also determined the image of the principal city squares: the 1905 square, the Truda square, Parizhskoy Communy square, the Uralskikh Communarov square.

However, it would be wrong to say that the modernist heritage of Sverdlovsk represent the pure modernity in their features. As it appeared in the previous chapter, a stylistic mixture would be a more precious term for the 1920-30 Sverdlovsk architecture. Before we move further on the topic of the modernist heritage problematic, let us see what kinds of mixtures we are dealing with when talking about the modernist heritage in Ekaterinburg.

Tabula Rasa Versus Palimpsest

For the convenient description of the topic, let us borrow some terminology from ancient Romans. *Tabula rasa* (a scraped tablet or a clean slate) – a need or an opportunity to start from the beginning. *Palimpsest* – a manuscript, usually on papyrus or on parchment, that has been written on more than once, with the earlier writing incompletely erased and often legible.

Obviously, the progressive style was to give the new face to the Urals's capital. But how applicable were the modernist dogmas for reconstruction of the old downtown? In the difficult financial, technical and climate conditions the desirable approach of "tabula rasa" was hardly an option. So architects had to take the way of "palimpsest" dealing with available materials. The demolished churches gave bricks for recycling. The remaining churches together with stone low-rise along the central streets were used as plinths for larger-scaled new buildings. Thus within a short period the centre of Sverdlovsk gained a major set of substantial modernist buildings with suspiciously-looking dissimilar small and arched windows downstairs.

In the thirties the Ural region was disintegrated and Sverdlovsk lost its capital status. Simultaneously Soviet architectural practice promptly abandoned Modern concepts, since Stalin's government indicated "classical heritage" as the only suitable concept. For fast grown modernistic Sverdlovsk it meant another big makeover. The "ugly matchboxes" had to be "improved" with classical order compositions and flamboyant décor. As the finances for this became even shorter, the principal administrative and office buildings got the priority for the neoclassical treatment. Still not all of them were adjusted. The Second World War delayed the construction process for many years.

Therefore Sverdlovsk, that presently regained the name Ekaterinburg, possesses a variable collection of modernist heritage that can be divided into four categories:

1. Buildings that were implemented in modernist forms and remained this way – "tabula

rasa" type.

2. Modernist buildings that underwent reconstruction according to socialist realism style.
3. Buildings consisting of a modernist top superimposed on the XVIII-XIX century housing.
4. Buildings that underwent the full "palimpsest" cycle: first erected on top of old buildings they were later dressed in neoclassical decor.

Let us examine some examples of each of category.

Type one

The "tabula rasa" type speaks for itself: new architecture rose on the previously cleared sites. In some cases, however, the recycling of existing materials definitely took place.

Such was the story of the cinema-theatre "Stal" of Verkh-Isetsky district, built in 1930 (fig. 4.1). The bricks, it was made of, came from the St. Nicolas church, that used to stay nearby and was demolished for the needs of construction. A similar story has the House of Defence which was constructed at the former location of the St. John church pulled down in 1933.

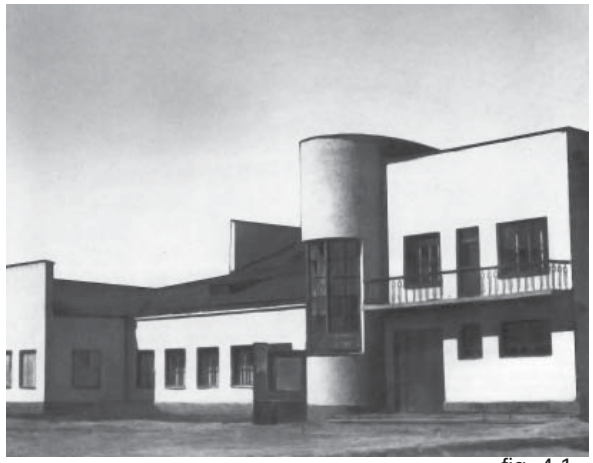

fig. 4.1

Type two

Buildings of this type are subdivided in two groups. To the first group belong the modernist buildings that were re-designed into neoclassical ones in the course of the construction. Buildings, constructed as modern in the first place and decorated later on, make the second group.

A good example of the first group is Dom Ofitserov (District Officers' House) that occupied the corner of Pervomaiskya and Lunacharskogo streets. Originally designed as Club Rabotnikov Prosvescheniya (Educational Workers') by architects V. Emelyanov, P. Lantratov and L. Shishov in the early 1930s, this project received a remarkable avant-garde spatial composition, based on combination of rectangles and a sector of a circle (fig. 4.2). The construction which started in 1932 was suspended and shortly after the unfinished building was assigned to the Ural Military District to become an officers' club. Therefore Emelyanov

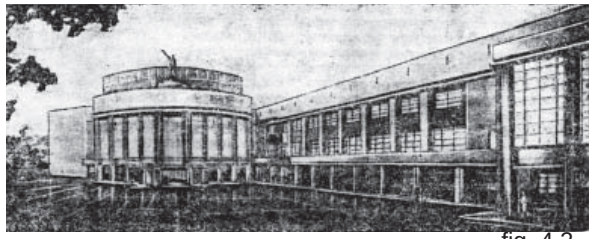

fig. 4.2

fig. 4.3

was asked once again for some definite adjustments in his design. In 1937 the construction was resumed according to the new project. By 1941 it was finished. Okruzhnoy Dom Ofitserov (District Officers' House) possesses the most official features of neoclassical style: colossal order porticos, a state tower with a broach spire, ornamental finishing and statuary (fig. 4.3). Nevertheless, the original modernist shape of the building is still clearly to be seen through the superimposed décor, contravening the general impression.

As a representative for the second group the previously mentioned Bolshoi Ural hotel can be named. Its initial design by V. Smirnov and S. Zakharov and enriched with the concepts of Go-


fig. 4.4

losov's project had a have pronounced modernist character. In 1940 a project of the main façade reconstruction was assigned to architect M. Reisher. The new façade composition included a balustrade with vases and sculptures. Just like in the previous case, the dynamic asymmetrical composition could not be overruled by the décor.

Type three

As it was already mentioned above, the third type primarily rested on permanent development in the old centre.

The complex of Sverdlovsk Oblispolcom assimilated some stone mansions on the Truda square (fig. 4.4). In the front façade the modernist attributes, such as asymmetry, angle accents and banded glazing, conflict with what was left over from the mansions: the variety of round-headed windows. The same of origination had the buildings of Sverdlovenergo, Uralsnabsbyt and many other structures along the central streets.

Type four

Buildings of this type descended just like the previous, third type, and later were taken to the next level of the Stalin era stylistic adjustments.

The Gorsovet building rose on top of the Gostiny Dvor complex (fig. 4.5) The trade pavilions were patched up and heightened. The building, finished in 1930 in all its elements manifested the new architecture (fig. 4.6). But soon the government decided to change the democratic image of the building by making it more "prominent". In the reconstruction project of 1937 architects G. Golubev and M. Reisher kept some of the constructivist features in the general classical style of vertical division of façades: the wide window openings were almost turning to banded glazing, alternating with very narrow order-styled pilasters (fig. 4.7). In 1947-54 the Gorsovet building finally transformed into an example of Stalin Empire style. The definitive design by the same authors contained a clock-tower, the colossal order, a rusticated plinth and a sculpture balustrade (fig. 4.8).

As we can see, for the modern heritage in Ekaterinburg it is typical that the "palimpsest" type positively prevails over the "tabula rasa" one. For scholars it gives an opportunity to pay extra attention to this interesting phenomenon, as it forms the basis of the concept of vernacular modernism in the Urals.

Questions to be Answered

In the early 1990s Sverdlovsk was once more renamed into Ekaterinburg. At that moment it had fond itself in a struggle with the effects of an acute economic crisis. This told negatively on the attitude towards cultural heritage in general, and the preservation of avant-garde monuments in particular. At present, the state of these monuments gives us justifiable concern about their future. For the years of careless utilization, with rearrangements inside and extensions outside, using them not according to their purpose or not using them at all, many monuments declined. Some buildings and sites that had a structure-forming function in the city disappeared from view, were hidden by later buildings of urban construction, despite the fact that both separate buildings and complete town-planning formations deserved the status of monuments. A poor physical condition of those structures also resulted from the problems typical of the construction process of the 1920s. Those included not only a hard economic situation and im-

perfect technologies, but also the fact that creators of new architecture were somewhat far from reality. The use of low-quality building materials has also catastrophically affected the present physical condition of constructivist buildings. Sometimes the building was made in material that was totally different from the one that was planned. An underestimation of the architect's supervision also affected the quality.


fig. 4.5


fig. 4.6

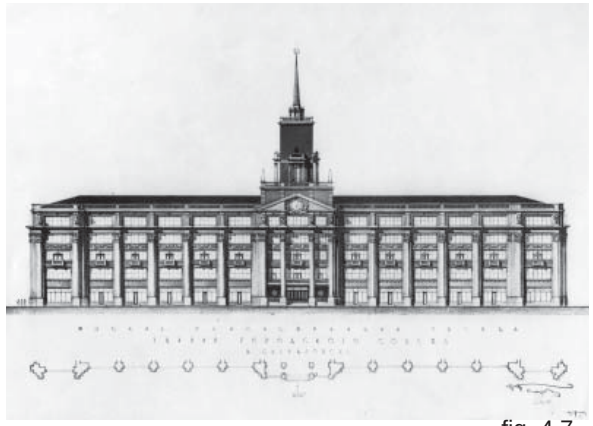
fig. 4.7


fig. 4.8

Although the "Sverdlovsk modernism" is in critical state, until the present moment, few have been done to investigate and systematize the experience of the modernist period in Sverdlovsk and the Urals, there was no active and organized work on conservation and restoration of its monuments. When outlining the ways of conservation and restoration of the modernist heritage of Ekaterinburg, one should specify a number of high priority tasks. There is no need to mention how much the majority of those monuments need repairing, as the problem is typical of the given style on the whole. Ekaterinburg, in particular, has to solve the following problems:

- to give certain monuments and sites back their original town-planning role;
- to free buildings and structures from later extensions that distort their appearance. This point, however, should make an exclusion to the façade decorations made during the Stalinist epoch, as they were achieved by the same architects and have therefore a considerable aesthetical value;
- to restore original fragments and parts that have been lost in the course of time;
- to adjust monuments according to present utilization requirements, if necessary, giving them a new function, but making sure that their appearance remains intact;
- to consider the implementation of the author's design that had not been implemented when building certain projects;

Below follow a few illustrations of these problems. They, however, tend to occur as a bunch,

fig. 4.9

fig. 4.10

rather than as a single problem per case.

One of the most poignant examples of a monument that lost its town-planning significance is the water tower of the Uralmash district, so-called "Belaya Bashnia," erected at the end of Cultury Boulevard, one of the three streets that radiated from the main square of sotsgorod Uralmash (fig. 4.9). The tower was designed first of all to provide water to the plant and the workers' settlement. But its other purpose was a spatial dominant that completed Cultury Boulevard. The material used was also exclusive – the tower was one of the first structures in Sverdlovsk that were built of reinforced concrete. By the early 1970s the House of Culture of the Uralmash Plant was erected in front of Bashnia and had fully blocked the view of it, taking upon itself the role of the structure that completes the boulevard. Thus, a unique monument of constructivism was excluded from the city fabric and doomed to a miserable existence in the backyard of another building (fig. 4.10).

fig. 4.11

By the early 1990s, an insurance company "Belaya Bashnia" was established, and the Uralmash Plant became one of its shareholders. The water tower was its contribution to the authorized fund of the joint-stock company. The management of the insurance company was thinking for a long time how to use Reisher's creation. There was a proposal to arrange a club of the insured in the tower or to open there a restaurant. However, all those projects remained on paper. At the end of the 1980s, the company transferred the tower to the ownership of the Regional Committee on the State Property as it became unprofitable to maintain it. The tower has never been repaired. Its dual status was the reason to that: on the one hand, this is a monument of federal importance and is accordingly under the protection of regional authorities; on the other hand, the land on which the monument stands belongs to the city, and the city administration has a different view of how its property should be used. A compromise in the given situation is still to be found. Specialists are well aware of the fact that Belaya Bashnia has irreversibly lost its role of a spatial dominant and are looking for different ways of returning to Ekaterinburg one of its symbols. At present, extensive discussions are held on the further role of Belaya Bashnia.

One more monument found itself in a comparable situation. Dom Justitsii is a compositional centre of the site occupied by the Gorodok Justitsii situated near the Western end of Lenina avenue. Dom Justitsii performed the same town-planning function, it completed Malysheva street, the second largest street after the Lenina avenue. In the 1970s, someone apparently guided by the need to

extend housing facilities and proceeding solely from the sufficient size of the building site, erected a standardized flat in Malysheva street that has hidden the monument (fig. 4.11). This example not only illustrates a violation of the restricted area around the monument, but also is an example of a non-professional approach that ignores the very foundations of town-planning. Still, as the given flat does not have any architectural value, there is some hope that it will be demolished in future.

The practice of private enterprise of the Post-Soviet period had especially affected the appearance of residential buildings. Here we deal, among other things, with personal capability of each particular businessman to be aware of such a matter as “cultural value”.

An apartment complex 4 Gorsovet House, built between 1927 and 1928 under the design by the architect S. Dombrovsky, opens the constructivist ensemble of the Uralskikh Communarov square (fig. 4.12). One of its buildings faces both the Lenina avenue and Moskovskaya street, which provided for a corner accent in its composition. Such a favourable location could not but attract the attention of business people of the Post-Soviet period. As was typical of the 1990s, the apartments of the ground floor were bought and the space was occupied by a new shopping centre. Its entrance group completely ignored the context and the status of the monument. The situation was aggravated by the fact that the new formation was extending, using the same primitive method, when a completed part that had been made in one style was later extended by another part that was independent in its concept both from the existing structure and the monument itself (fig. 4.13). An alien “tumour” on the façade disfigured it and contrasted to the collapsing original parts. Such ignorant approach also stimulated the process of dilapidation.

In the second half of 1990s the owners of the trading complex have signed, together with the Research and Development Centre for protection of Sverdlovsk Oblast monuments, the document containing obligations on the conservation of the monument. They were ordered to dismantle the annex and put the facades into order. Unfortunately, the owners were still not capable to realise that the building they were dealing with was a monument. The new façade, designed for the whole shopping centre, is made of standard glass-in-steel elements (fig. 4.14). A foil of brown-toned glazing covered up the whole corner looking over the square.

An apartment complex Uraloblsovnarkhoz House at the corner of Malysheva Street and Khokhryakova Street is one of the structures that realize designs of M. Ginsburg and his colleagues related

fig. 4.12

fig. 4.13

fig. 4.14

fig. 4.15

fig. 4.16

to a new socialist type of dwellings. Based on the project by Stroikom (the Construction Committee) of the RSFSR, the complex contains a complete set of typological and building innovations of the given project, but it was specially adapted to Sverdlovsk. The building of a hostel that faced Malysheva Street included offices on the first floor and was partly supported by open concrete supports that provided a passage to the internal yard. That building has become a compositional and functional centre of the site and presents the greatest interest. By the present moment, the building has experienced numerous alterations. During the Second World War a canteen with facility rooms and an open gallery on the top floor were rebuilt into additional dwellings. Since the late 1980s, the block has been suffering from the fact that the shops occupying the ground floor were placed between reinforced concrete supports. The facades of shops were accented with bright decorative materials that did not match the image of the monument (fig. 4.15). Alongside with other changes that distorted the author's design, it led to the loss of an aesthetical value by the monument.

The problem of an architectural dissonance in combination with the loss of original details could be reviewed with regard to the building of Fabrika-Kukhnia. The silhouette of Fabrika-Kukhnia, an example of a technological innovation, that had to create a new way of life, was supposed to accent the merger of Sverdlova Street and Karla Liebknechta Street. The construction of the building was stopped when the Ural Region disintegrated and financing was reduced. However, certain blocks have been completed. Fabrika-Kukhnia is valuable due to both the constructivist style manifestation and as one of the few representatives of structures of that type in the city. At present it houses a factory producing macaroni, only an experienced viewer can recognize this building in space that is squeezed from all sides by different new structures (fig. 4.16). It is also difficult to recognize the building because in the process of its utilization, the important parts of its façade - a corner balcony that supported its composition and a quarter-cylindrical glass staircase – were lost.

A direct relationship between the monument's scale and the magnitude of the difficulties it is exposed to is not a surprise. The larger a monument the bigger is a bunch of problems.
The housing complex Gorodok Chekistov plaid a prominent role in the ensemble of the new city centre on the Parizhskoy Communy square. It is a unique example of zhilkombinat model implemented on the highest creative level. Besides that, the staircase of the Dzerzhinsky club is probably the only example of constructivist interiors in the city that remained intact (fig. 4.17).
The whole Gorodok was build of plastered brick. The wooden floors were laid on metal beams. Reinforced concrete was used sparingly in the hotel and the club only, and because cement was in short supply, the concrete structures were of poor quality. The bay windows present a frame-and filling structure.
Presently, most of the structures wore off. In addition to that the complex has been undergoing functional re-orientation. The ground floors of

the apartment blocks are sold out and now many small shops and offices affect the unity of ensemble. The hotel building, except for being in critical technical condition, is now facing the problem of inaptitude to the contemporary safety norms. The upper half of the floors is unsafe for use unless an additional emergency staircase is built. Before that time this part of the hotel can only be used as a big commercial board (fig. 4.18).

It is essential to develop a preservation or reconstruction program for the whole complex. And for that the complex should come under the responsibility of only one owner. Given that it has already happened with a monument that is located just across the street.

Club Stroiteley at the crossing of Lenina avenue and Lunacharskogo street was another component of the ensemble of the new city centre. It became a built example of a new type: the multi-functional workers' club. Unfortunately, as often happened at that time, an excellently designed project was built in low-quality materials. Instead of reinforced concrete, metal and glass, as intended by Kornfeld, Club Stroiteley was made of bricks, frame-and-filling or frame-and-board elements. The monolithic concrete floor slabs were placed on metal or wooden beams with slag filling and were equipped with suspended ceilings. In short period all these elements proved to be non-durable.

The use of low-quality materials is the main problem of the given monument, but not the only one. Not all author's ideas were realized. Together with losses and alterations of later periods, the above considerably destroys a compositional integrity that was reached by the author when designing the house. It especially affected the complicated entrance group of the building; which was formed by club and entertainment parts that came together at the right angle and a small square in front of them. This key unit managed to balance the combination of volumes having different sizes by a large stained-glass window that was designed in the face plane of a hall and presented a contrast with blank plastered surfaces of adjoining volumes (fig. 4.19). A stained-glass window had never been built during construction.

By 1990s the monument, housing Sverdlovsk film studio, came in such poor technical condition, that it was classified as a breakdown (fig. 4.20). Then, several engineering surveys had been conducted, aiming to figure out which parts were to be reinforced or replaced. The regional Government tried to find a comprehensive approach for conservation and reconstruction of the monument, but was not able to allocate funds for this purpose.

fig. 4.17

fig. 4.18

Thus, in 1998 the Regional Committee on the State Property announced a tender for a long-term lease-out of the 7.500 sq.m. film studio complex. The tender had given fast results, as a certain commercial entrepreneur took it, with an intention to transform the film studio into a shopping centre. After gaining the permission, the new

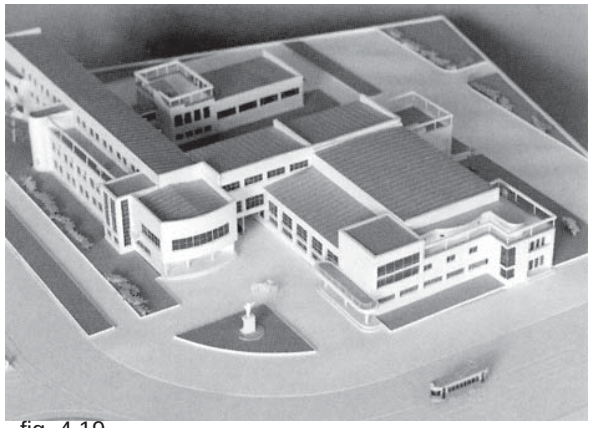

fig. 4.19

fig. 4.20

fig. 4.21

renter showed a full recognition of exclusiveness of the building he was dealing with. He hired architects in order to adjust the complex to the new purpose with all possible care. The ambition was even to reconstruct the original appearance of the building, according to Kornfeld's project. Unfortunately, practical matters did not allow carrying out this project completely. The above mentioned stained-glass window still did not emerge. Nevertheless, the new shopping complex "City-Centre," that opened its door shortly after the millennium change, features more original details than the building had ever had (fig. 4.21). Club Stroiteley became the first precedent of a modern monument being restored and put into new use in Ekaterinburg.

We could continue listing the examples of a critical state of constructivist monuments in today's Ekaterinburg. However, we shall limit ourselves with the above and shall try and find the main reasons that interfere with the improvement of the above situation. On a closer examination, the problem falls into two main factors:

- a low level of awareness with regard to the value of the Modern Movement architecture on professional, administrative and public levels due to a "young" age of the monuments in question. It results in lack of practical experience on restoration, renovation and programmed use of monuments belonging to the given period;
- lack of a clear position on the part of the Russian protection legislation referring to monuments of architecture of the 1920 and 1930s. Hence lack of coordination of actions of city and regional authorities in protecting and utilization of the heritage of the Modern Movement architecture. The role of public organizations in this process is underestimated. Apart from that, the role that administrative bodies give to that heritage when planning a perspective development of Ekaterinburg remains unclear.

The first steps in this direction have already been done. It will, however, take much more efforts before the constructivist heritage will be reinstated in its capacity of an integral, fully functional and well-adapted architectural and town-planning element in the city organism.

CONCLUSIONS

The study is accomplished. Now it is time to answer the question: can this study make a difference? What is the importance of taking the Ural region away from the Terra Incognita and attaching it to the grounds where Modern Movement is well-explored? Let us draw some conclusions. And, what is also important, let us try and put the results of this survey into a wider context of the history of modernism and contemporary architectural and town-planning practice.

1. First of all we take a look at the hypothesis. During the introduction a hypothesis was announced that in the provincial Ural region the modernist concepts were carried out wider, and concerning the town-planning, earlier than in the cities Moscow and Leningrad, that until the post-war period remained theoretical centres more than practical.
The hypothesis about the earlier and wider implementation modernist concepts in the Urals than in the centre proved to be accurate. The Ural region can certainly be called the cradle of avant-garde town-planning due to the fact that the first examples of socialist industrial settlements were built there according to the innovative ideas presented during the town-planning debate.
As one of the most important implementations we should mention the project of Greater Ufa (1933). In this project the team of M. Ginzburg carried out one of their four principles of socialist planning – the desurbanist principle (1930). Old Ufa surrounded with the three new regional constituents represents "the large city" – the centre of an industrial region that lays the foundation for uniting city and village, industry and agriculture, on the basis of new methods of production and communication.
Another significant concept was implemented in the first Ural settlements: the concept of Sotsgorod presented by L. Sabsovich (1930). His principle of a building around large industrial and agricultural enterprises of residential areas where equal living conditions and equal cultural and communal facilities would be provided to every inhabitant was applied virtually in every project for an Ural city.
Strumilin's idea of microraion – a new type of residential area based on uniting a few residential blocks with the help of common cultural and communal facilities (1930) – was applied in several Ural projects. Ginzburg's team used it in the layout of Chernikovsky industrial area within the project of Greateer Ufa (1933). A. Burov used a microdistrict as the main planning unit of the ChTZ sotsgorod in Chelyabinsk (1933). Danchich's team also applied the microraion principle in the project of right-bank Magnitogorsk (1934). All these projects were fully or partly implemented and the built microdistricts became first of a kind in the country.
As for the part of avant-garde architecture, the Ural examples of it were less spectacular comparing to the ones in Moscow and Leningrad. Still we observed the professional activities of the OSA constructivists in the years 1920-30 on the field of experimental dwellings and public buildings in Sverdlovsk. As examples the Uraloblsovnarkhoz House by M. Ginzburg and A. Pasternak and the Club Stroiteley by Ya. Kornfeld can be named.
The projects of Leningrad architects for Sverdlovsk are also of high value. Due to their pronounced character such architectural complexes as Gorodok Chekistov and Dinamo water-and-ski station by I. Antonov and V. Sokolov virtually represent the image of Sverdlovsk avant-garde.

2. The historical background played an important part in the process of the socialist development of the Urals and, therefore, – for the avant-garde practise there.
The industrial expansion of the Urals in the XVIII century served as a solid foundation for the industrialization program in the first and the second Five-Year Plan periods. During the period of industrialisation, Ural cities turned from administra-

tive, economic and cultural centres of the region that they had become at the end of the XIX century into industrial centres on the state scale. The formation of old Ural towns and their situation in many ways determined the distribution of the socialist industry and often influenced the layout of socialist cities.

Especially "Peter's" factory-towns such as Nizhny Tagil, Sverdlovsk and Perm that were built according to general layouts based on regular planning principles have influenced the planning schemes during the socialist industrialisation. However the former fortresses with regular plan were also developed with consideration of it, as we could see by the example of Orenburg. Thus, old Ural towns also served as test sites for the new reconstruction methods.

Among the main principles of the new reconstruction methods we can also name: the use of inner territorial sources of cities; active development of transportation network based on historical system of roads; multifaceted approach to the layout and development of sotsgorods; the ensemble approach; multi-functionality of dwelling complexes.

3. Two types of settling prevailed in the Ural town-planning in the 1920-30s: the group type and the centralized type.

Both of them played determining role in the later town-planning practice, both have been used for today's continuous development of cities. In particular, the first type is used for the development of architecture-and-planning systems of the whole city agglomeration; the second type is used for development of separate city parts.[1] In other words, the further development of the Ural cities with compact historical core is taking the direction of transition from compact city – the centre of a region – to "agglomeration city" – a centre and satellites – with active work, living and cultural connections organized by means of high-speed public transportation. At the same time the satellites are developed as independent multifunctional industrial-and-residential systems. In this way the general layouts of future developments of the cities Ekaterinburg, Ufa and Chelyabinsk are designed.

4. We can presume with certainty that the results of town-planning activities in the Ural region were later taken into account during the final project for the reconstruction of Moscow.

Even though it is considered that the definitive layout for socialist Moscow by V. Semionov, S. Chernyshev in 1935 was the direct consequence of the change of aesthetic agenda, we still can assume that the scheme for Moscow was chosen after every type of experimental layouts presented during the competition of 1930-32 (except, perhaps the plan of Le Corbusier) was tested and evaluated on the Ural construction sites.

Although old Ural cities were not nearly as big as Moscow they still were regional centres and therefore served as a good test panel for applying the decentralisation concepts. The linear kind of scheme, which was proposed for Moscow in the projects of Ladovsky and Kratyuk, was applied to the cities Perm and Ufa. At the same time Ekaterinburg and Chelyabinsk took the way of development as a compact group city, their general layouts refer to propositions of Ernst May and Hannes Meyer. And if we look at the time the projects for the Ural cities were developed in the same period of the beginning 1930s.

5. The practical experience of the Ural developments was used not only within the borders of the Soviet Union but was also in a certain way obtained by the Western side.

As we know, active professional contacts between Soviet and Western architects in the 1920s and early 1930s contributed into mutual enrichment in ideas and practical experience. Many Western ideas were assimilated by the Soviet specialists and

elaborated in the context of the Soviet situation. Some of those ideas returned back to the West. In the first place the experience was imported by those Western architects who returned from the USSR. And otherwise, the innovative ideas of the new industrial centres in the Urals and the competition for new socialist Moscow were borrowed as examples of new approach to the old concepts. In other words, the Western practical and theoretical experience was first imported to the Soviet Union; there it was enriched and later returned back to the West.[2]

One of the examples of the "full cycle" experience exchange is that of L. Hilberseimer versus desurbanists of OSA. The planning system for Greater Ufa designed by Ginzburg's team has interesting parallels with Hilberseimer's town-planning investigations.[3] On the one hand, the project of the Chernikovsky industrial hub apparently borrowed the settling idea, which had been developed by Hilberseimer at the beginning of the 1930s, where, instead of a block, or quadrangle of buildings, the main element is represented with a "fish spine" – a branched road that gives priority to pedestrians. On the other hand, this plan, with its secondary-linear system, anticipated the concept of residential belts, presented by Hilberseimer in his project for Chicago in 1940; it combined the principles of a linear-and-belt city.

Similar picture we can observe with the work of P. Abercrombie. His Doncaster Regional planning scheme (1922) laid the foundations of regional planning and became a prototype for planning industrial centres. Later on Abercrombie presented the general layout for Greater London (1944) where he applied the principle of decentralisation to reduce the concentration of industry in the London area.[4]

The concept of decentralisation was also successfully used for the post-war reconstruction project of Greater Paris where new city-centres were created, attracting the new urban development around them and unloading the old centre.[5] Numerous cities around the world were reconstructed in the same decentralised way after the WWII, among them Ottawa and Wellington.[6]

6. In terms of architecture and town-planning Ekaterinburg possesses two major historical backgrounds: classical and modernist. The latter is particularly expansive. It is typologically comprehensive and shows interesting solutions in layout, space and function. These factors allow evaluating the modernist heritage as a fine contribution to the cultural legacy of the XX century.

The poor technical condition of the modernist heritage remains a big issue. To secure the future existence of Ural avant-garde an immediate action must be taken.

And in the end I would like to say the following. I am aware of the fact that the materials reviewed in this survey do not fully represent the whole phenomenon of the avant-garde Ural architecture and town-planning. The aim of my research was to indicate the Ural avant-garde case, to describe its main aspects and therewith to display its significance for the general history of modernism. But this phenomenon is too vast and multidimensional to be examined in every detail within one survey. Thus only most characteristic moments of town-planning, architecture and building technologies were highlighted here. Their evaluation and analysis were only chalked out and serve as indication for the further research directions. So, if this work someway or other draws attention of specialists or inspires researches to take the investigation to another level, I will consider my task fulfilled.

1 These facts were explained in the books: Baranov, N., Shkvarikov, V., *Osnovy Sovetskogo Gradostroitelstva* (Outlines of the Soviet Town-Planning), Moscow, 1969; Kolyasnikov, V., *Gradostroitelnaya Ecologia Urala* (Town-Planning Ecology of the Urals), Ekaterinburg, 1999.

2 The Western town-planning experience comparing to the Russian situation is comprehensively analysed in the book: Valdimirov, V., Neymark, N., *Problemy Razvitiya Teorii Rasseleniya v Rossii* (Problems of the Settlement Theory Development in Russia), Москва, 2002

3 Pommer, R. et al, *In the Shadow of Mies: Ludwig Hilberseimer: Architect, Educator, and Urban Planner*, Chicago-New York, 1988, p. 43-45

4 Abercrombie, P., *Greater London Plan 1944*, London, 1945

5 Kopp, A., et al., *L'Architecture de la Reconstruction en France*, 1945-1953, Paris, 1982

6 These cities were mentioned as examples of decentralization by Yu. Bocharov, academician and the president of the Russian Academy of Architecture and Construction Sciences, in an interview with *Izvestia* newspaper.

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 Used abbreviations:

GAChO – State Archive of Chelyabinsk Oblast
GAOO – State archive of Orenburg Oblast
GAPO – State archive of Perm Oblast
GASO – State Archive of Sverdlovsk Oblast
MAIU – Museum of Architecture and Industry of the Urals, Ekaterinburg
MUAR – Schusev Museum of Architecture, Moscow
MUM – "Metallurgical Urals" resort-museum, Nizhny Tagil
RGANTD – Russian State Archive for Scientific-and-Technical Documentation, Samara
RGAE – Russian State Archive for Economy
UM – Uralmash Museum, Ekaterinburg

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