

Leonid Tyulpa. The architect of the soviet period of mass industrial development

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Abstract

The design approach employed by Kharkiv-based architect Leonid Tyulpa evolved from the early 1950s to the late 1970s. The architect's career reflected the state of the whole Soviet architectural design in the second half of the XX century. His creative work encompassed all the milestones of housing development practice in the country. L.Tyulpa's career started in 1951-1956 with restoration design projects in cities damaged during WW II. The years between 1956 and 1958 marked a transitional stage when the architect broke with old design traditions. In the third stage of his career, L.Tyulpa embarked on developing a new practice of designing prefabricated housing, searching for economical and feasible design solutions (1958-1963), with Pavlovo Pole housing estate being a vivid example of this period. Starting from 1963 the principles of creating the so-called "micro-districts" were implemented into the old city tissue, leading to a comprehensive reconsideration of the city and its role. The final stage of his career saw the appearance of a totally new vast housing area in Kharkiv. It was Saltovskiy housing estate for 300,000 dwellers, which became the utmost manifestation of the modernist way of thinking.

Keywords

Mass housing; postwar, micro-district; Soviet modernism; Tyulpa; Saltovskiy housing estate; Pavlovo Pole; Ukraine.

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- 1 Basic principles of mass housing development in USSR had been built-in during the 1930s. (M. Meyerovich, Ye. Konyshva, D. Khmel'nitskiy (eds) , *Kladbishche sotsgorodov: gradostroitel'naya politika v SSSR (1928-1932 gg.)* [Cemetery of Socialist cities: urban policy in the USSR (1928-1932)], Moscow: Rossiyskaya politicheskaya entsiklopediya (ROSSPEN), 2011).
- 2 Proceedings of the International Academy of Business and Banking. *Ponyatiye o gorode* [The concept of the city], Togliatti: Gorodskiye programmy, 1994.
- 3 *Zhilishche v Rossii: vek XX. Arkhitektura i sotsial'naya istoriya* [Dwelling in Russia: the XX Century. Architecture and social history], Moscow: Tri kvadrata, 2001.
- 4 The attempts to generalize and analyze the design experience of Leonid Tyulpa were made by I. N. Lavrentiev, Ye. Svyatchenko, Yu. M. Shkodovsky, B. G. Klein, R. Lyubarsky, V. Marchukov: Lavrent'yev I. *Pamyati zodchego* [In architect's memorial], Kharkiv: Stroyprays, 35 (2003), pp. 8-9; Svyatchenko Ye., Shkodovskiy Yu. *Nasledstvo Tyul'py* [Leonid Tyulpa's Legacy], Kharkiv: Vecherniy Khar'kov, 12 May 1994, p.2; Kleyn B. *Arkhitektor L. M. Tyul'pa* [Architect L. Tyulpa], Kyiv: Stroitel'stvo i arkhitektura, 10 (1982); Lyubarskiy R. *Budivnichiy: Do 60-richchya zasluhenogo arkhitekora SSSR L. M. Tyul'pi* [The Builder: To the 60th birthday of L. Tyulpa, honored architect of USSR], Kharkiv: Leníns'ka zmiána, 14 September 1982; Marchukov V. *Slíd na zemli* [The stamp on the ground], Kharkiv: Sotsialístichna Kharkivshchina, 13 August 1982.
- 5 Aestheticization is in the meaning as "the action or process of making something aesthetic in character or appearance; an instance of this". (Nikonova S. B. *Estetizatsiya kak paradigma sovremennosti. Filosofsko-esteticheskiy analiz transformatsionnyih protsessov v sovremennoy culture* [Aesthetization as a paradigm of modernity. Philosophical and aesthetic analysis of transformation processes in modern culture], St. Petersburg, 2013).
- 6 Novikov F., Belopolsky V. *Sovetskiy modernizm*. [Soviet Modernism]. 1955-1985. - Moscow: Tatlin, 2010.
- 7 The most well-known exhibition "Soviet Modernism: Unknown Stories" took place in Vienna Architecture Center in 2011.
- 8 The last important works connected with the issue of soviet mass housing aesthetic are: Khmel'nitskiy D. S. *Chinovnich'ya arkhitektura. O spetsifike «sovetskogo modernizma»*. [Official architecture. On the specifics of "soviet modernism" term]. Access mode: archi.ru/lib/publication.html?id=1850569943; Yerofeyev N. *Estetika sovetskoy zhiloy arkhitektury* [Soviet residential architecture aesthetics]. Access mode: archi.ru/russia/64030/estetika-sovetskoi-zhiloi-arkhitektury; Kazakova O. (ed.) *Estetika "ottepeli": novoe v arhitekture, iskusstve, culture* [The aesthetics of the "thaw": new in architecture, art, culture], Moscow, Rosspen, 2013; Heatherley O. *Landscapes of Communism*, Allen Lane, 2015.

Approaches to studying mass housing development in the history of the postwar Soviet architecture

Dozens of millions of Ukrainian citizens are now living in large housing estates built in the third quarter of the previous century. During those years the cities of the Soviet Union served as a ground for an unprecedented social and architectural experiment that changed the daily routine of dozens of millions of Soviet people¹.

Since the 1990s the Soviet mass housing development has attracted scholars' attention, both in Ukraine² and abroad³. However, mass housing development has been considered primarily as a socio-economic phenomenon and as another concept in the theory of city planning. The names of Ukrainian architects and urban planners of this period, such as O. I. Zavarova, L. M. Tyulpa⁴, Ye. G. Weinstein, P. N. Nirinberg, L. D. Nivina, A. D. Konsulov, etc. are only familiar to their contemporaries who witnessed and participated in that major breakthrough of the 1950s-1960s.

This large "blank space" in the history of Ukrainian architecture is connected with the issue of aestheticization⁵ of the Soviet architecture of the third quarter of XX century. A wide-ranging discourse on the aesthetics of the postwar Soviet modernism on the territory of the former USSR republics was triggered by the book "Soviet modernism. 1955-1985"⁶ written by F. Novikov and V. Belopolskiy, which was released in 2010, as well as by a number of international specialized exhibitions and conferences⁷. Nowadays the aesthetic value and the mechanism of aestheticization of the Soviet mass housing development heritage are becoming some of the high-priority tasks for researchers⁸. The complex study of mass housing development is presented in the book "Towards a typology of Soviet mass housing: prefabrication in the USSR 1955-1991"⁹, which presents an analysis of the stages of mass housing development and the most valuable series of houses from an aesthetic point of view.

In fact, over a span of as many as 35 years Soviet urban planners managed to implement the principles of idealized modernist urbanism¹⁰ on the scale of a large country on every structural level – from regional planning to minimalistic design of individual apartments. Cities acquired new architectural forms, whereas previous architectural forms became elements that were embedded into the new urban tissue¹¹.

By mid-1950s the process of national industrialization was completed de jure, giving place to housing which became the dominant development project in the USSR. It had a purely utilitarian goal, i.e. resolving the so-called "housing question" as soon as it was possible. This idea was widely propagated because of the necessity to implement a new way of organizing human resources, which could involve all the life spheres of a common Soviet citizen within a single production cycle that had already been established. That is why the architectural method that had been actively developed after the war evolved into an experimental search for efficient standard designs, where the main criterion for approving design proposals was their technical and economic efficiency.

Despite the fact that all regional development relied upon the same ideological basis, the position of various regions within the national system of distribution was not the same. Nor were the people who were responsible for local regional development. Therefore, a more thorough research into the phenomenon of the post-war Soviet housing development calls for deeper understanding of those people who stood behind the achievements and failures of the epic architectural and urban development in various parts of the former Soviet Union, including the reconstruction of existing situations with certain local restrictions, analysis of

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[Fig. 1] Leonid Tyulpa. Photo from personal file of L. Tyulpa.

Source: Archive of the Kharkiv regional organization of the National Union of Architects of Ukraine.

opportunities and failures. Another essential condition of historical and architectural research is the necessity for precise documentation of quantitative (up to hundreds of millions of square meters of housing) and qualitative (structural, functional and spatial) characteristics of each period.

Unfortunately, the Kharkiv experience of mass industrial development practically is not studied¹². However, this experience deserves special attention. Unlike other Ukrainian cities, an original architectural school had emerged here back in 1920s-1930s¹³. In addition, two consecutive projects, namely Pavlovo Pole (1956-1974) and Saltovskiy housing estates (1963-1993) were implemented under the guidance and according to fundamental design proposals made by the same architect - Leonid Tyulpa (1922-1994) [fig. 1].

9 Meuser, Philipp, Zadorin, Dimitrij, and Knowles, Clarice. *Towards a typology of Soviet mass housing : prefabrication in the USSR 1955-1991*, Berlin: Dom Publishers, 2015.

10 *Tri formy rasseleniya. Afinskaya Khartiya / Le Korbyuz'ye* [Three forms of resettlement. Athens Charter / Le Corbusier], Moscow: Stroizdat, 1976.

11 Alexander Rappaport *K ponimaniyu arkhitekturnoy formy* [To the understanding of the architectural form]. Thesis for the degree of Doctor of Arts, Moscow, 2000.

12 Meerovitch M.G., Frantseva Yu.V. Problems of complex regeneration of residential area of the regions of large-panel development. Possibility to adapt German experience to social, economical and law conditions of the countries of CIS. *Izvestiya vuzov. Investitsii. Stroitel'stvo. Nedvizhimost'* [Proceedings of Universities. Investments. Construction. Real estate], 2017, vol. 7, no. 1, pp. 120-130. (In Russian).

13 Horoyan N. P. *Kharkivs'ka arkhitekturna shkola v period formuvannya y stanovlennya: kinets' XIX -persha tretyna XX st.*, [Kharkiv School of Architecture in the formation period: the end of XIX- the first third of XX century]. Thesis for PhD degree, Kharkov, 2015.

14 J. H. Forshaw and Patrick Abercrombie, *County of London Plan*, Macmillan & Co. 1943.

Monographic studies provide an opportunity to compare the results of architects' work. Patrick Abercrombie's practice, whose name is directly associated with the post-war London reconstruction¹⁴, is one of examples of such personified research approach. Everything that is written about Soviet urban planning of 1960-1980's gives a false idea that Soviet architects played the role of impersonal tools, and therefore soviet mass housing development cannot be called architecture. The identification of key Soviet architects and city planners in the field will allow to display the real situation and to avoid sketchiness and generalization.

The Turning Point of 1956: Breaking from Stalinistic Design Practices and Return to Modernism

Leonid Tyulpa belonged to the generation of architects, whose architectural design skills were shaped by the post-war urban restoration movement rather than by pre-war architectural processes. Therefore, for him the newly-introduced method of technical and economic feasibility was something relevant and self-evident.

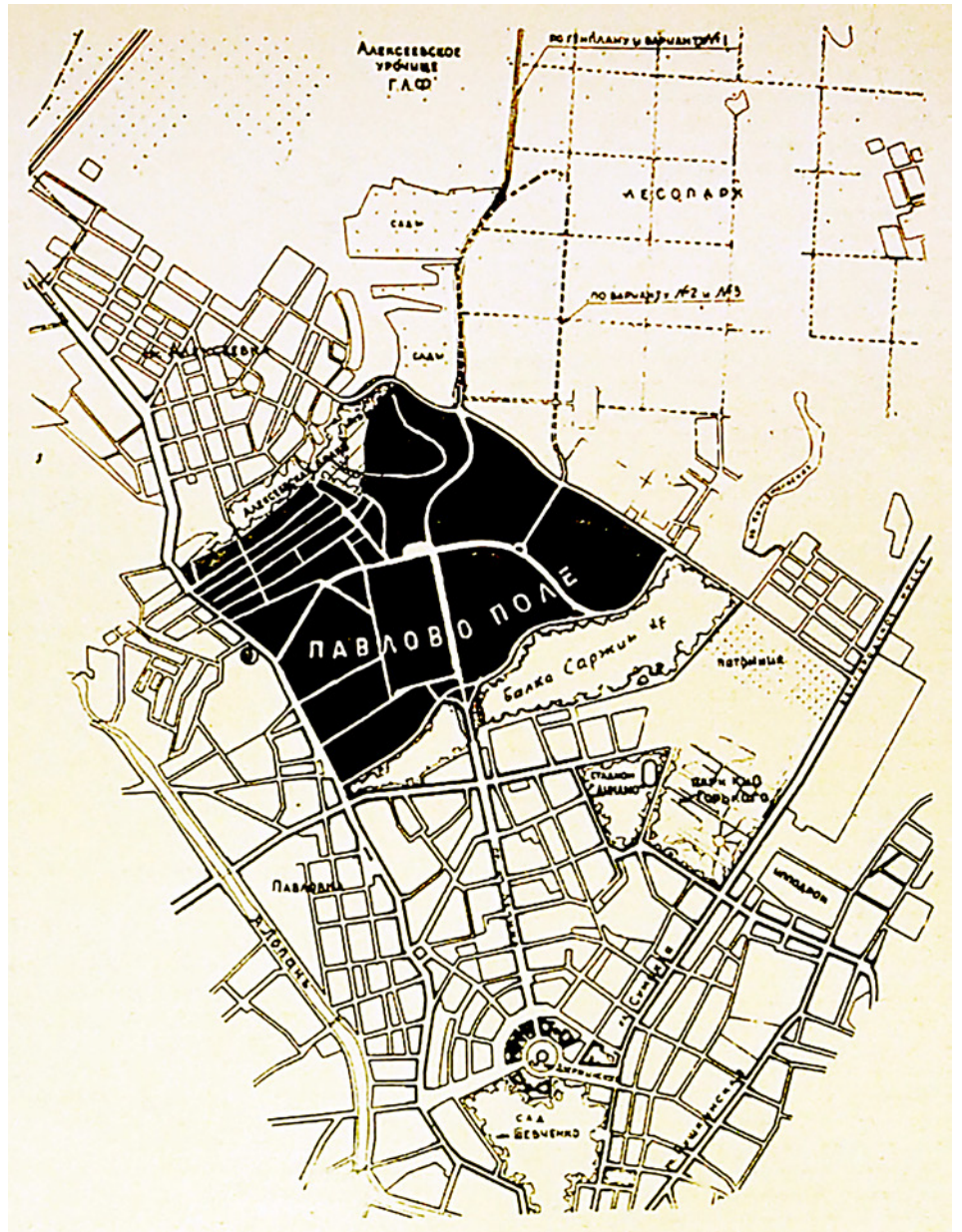
During a very short period of time starting from 1951 L. Tyulpa developed about a dozen projects including a dormitory in Zhdanov, housing estates in the central part of Druzhkovka, a square in front of the railway station in Kramatorsk, a few standardized buildings for Communist Party District Committees, the Palace of Culture of Metallurgists in Donetsk), apartment blocks in Khartsyzsk, Makeyevka, Kramatorsk. A housing estate along Kremlevskaya street in Krivyy Rig was a major project thanks to which L. Tyulpa was noticed and promoted to senior architect.



[Fig. 2] Residential house-building practice development in Kharkiv: 1 – Pavlovo Pole; 2 – Saltovskiy residential area; 3 – Seleksionnaya station; 4 – Gagarina Avenue; 5 – Agroshkola-Lednoye. (Red marks are the new residential areas; red hatching is a reconstruction zone; green marks are green spaces). Layout. Source: Shpara P. *Perspektivnyi razvitiya Harkova* [Development prospects of Kharkov] // Kyiv: Stroitel'stvo i arkhitektura 3 (1964), p. 4.

[Fig. 3] Pavlovo Pole District.

Source: Grigorenko A., Tyulpa L. *Planirovka rayona Pavlovo pole v g. Khar'kove* [Planning of the Pavlovo Pole in Kharkov], Kyiv: Stroitel'stvo i arkhitektura 7 (1958), p. 8.



15 The photographs of L. Tyulpa's design proposals were found only in I.N. Lavrentiev's personal archive. Unfortunately, "Giprograd" archives for the period of 1951-1964 were destroyed when the institute moved to a new building, and the copies of documents were not submitted to state archives. The layouts of flats and the detailed plans of street ensemble patterns, which could shed more light on the evolution of the architect's creative method during the crucial period of 1950s, have also been lost. Therefore, it is recommended to proceed with searching for the remaining documents in personal archives.

16 In 1955 A. Krykin was severely criticized by N. S. Khrushchev "for allowing excessiveness in urban planning and development and ignoring standardized designs in construction" (Khrushchev N. S. *Postanovleniye TSK KPSS i Soveta ministrov SSSR ob ustraneniі izlishestv v proyektirovaniі i stroitel'stve* [Resolution of the Central Committee of the Communist Party and the Council of Ministers of the USSR on the elimination of excesses in the design and construction] Moscow: Gospolitizdat, 4 November 1955). The reaction of the Council of Ministers of the Ukrainian Soviet Republic was immediate. It said, "All the shortcomings in the

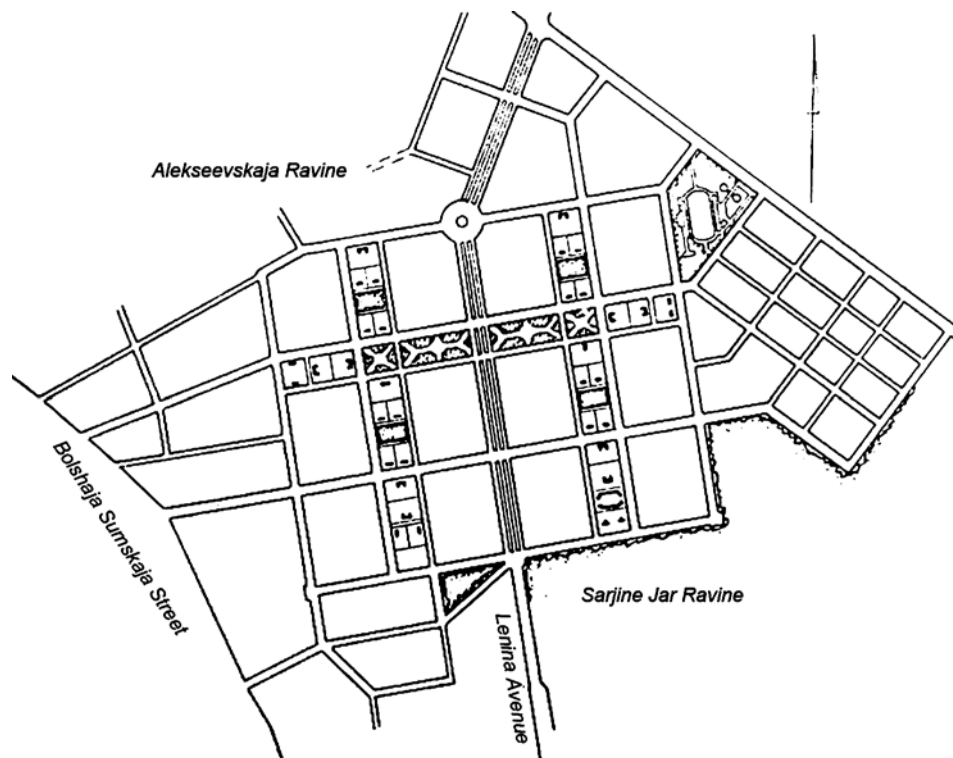
It took him only two years to develop a detailed street design, together with nine residential buildings which were subsequently erected¹⁵. At that period of time he was already trying to operate with large scales, looking for harmonious relationship between space and mass and using the conventional plasticity approach to façades only for decorative purposes. He paid more attention to living scenarios that were likely to emerge in proposed spaces; he thought more about the convenience of layouts and the economic feasibility of the proposed design solutions.

In 1956 Leonid Tyulpa moved to the workshop supervised by A. Krykin¹⁶ and began to work on large urban planning projects. He was involved in the development of a new masterplan of Kharkiv [fig. 2], which had been under development since 1954¹⁷. He was also a member of the group that was designing a new housing estate Pavlovo Pole [fig. 3] for 60,000 dwellers.

Pavlovo Pole housing estate became a testing ground in Kharkiv, where the method of "micro-districts" was tested for the first time. The first layout of Pavlovo Pole housing estate was developed by Khargorproekt Urban Planning Institute (architects B. G. Klein, A. S. Proskurnin, A. P Pavlenko) back in 1945 and by 1954 several two-storey apartment buildings had already been erected in the eastern part of the district. In 1954 the project was submitted for redesign to Kharkiv affiliated office of Giprograd (Research and Planning Institute in the Field of Spatial and Urban Planning in Ukraine). The designers and planners made a thorough analysis

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[Fig. 4] Pre-planning scheme of Pavlovo Pole District (1956).

Source: Grigorenko A., Tyulpa L. *Planirovka rayona Pavlovo pole v g. Khar'kove* [Planning of the Pavlovo Pole in Kharkov], Kyiv: Stroitel'stvo i arkhitektura 7 (1958), p. 8.

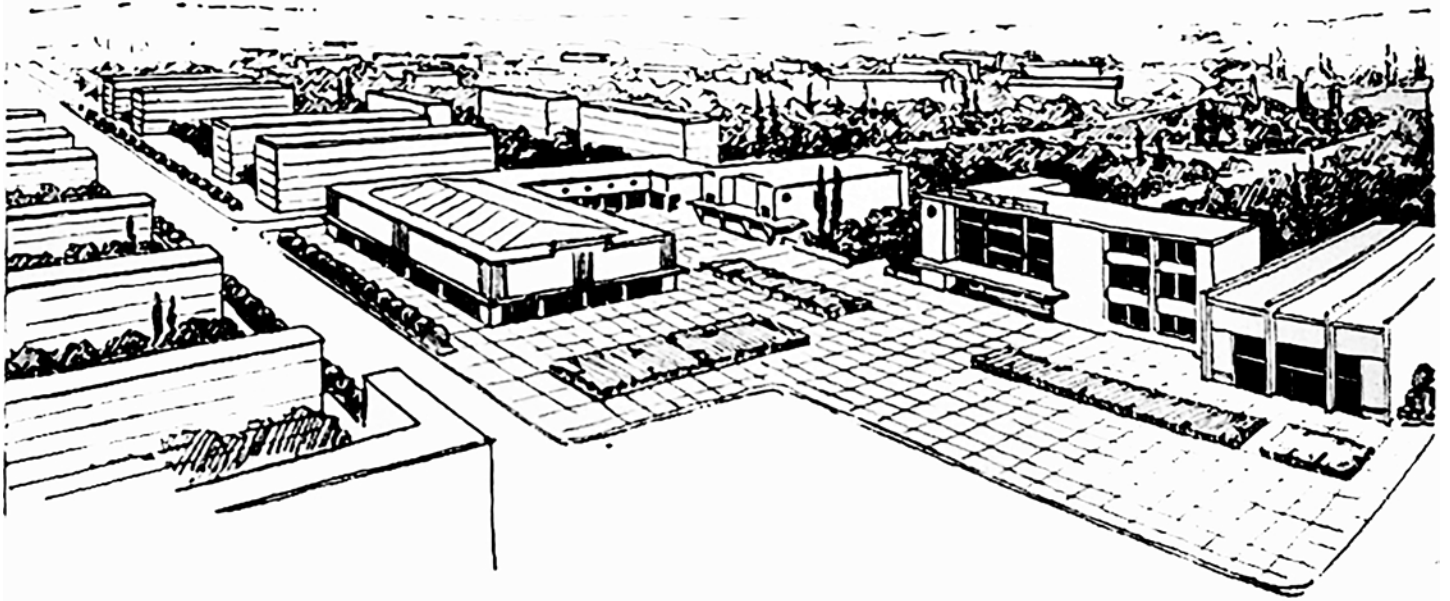
of the previous project, developed a preliminary layout of the northern part of the then Lenin avenue and finally prepared a detailed design proposal for the whole housing estate, which in their opinion totally complied with the new ideological requirements. However, the project was criticized because it was allegedly out of keeping with the new ideas about the needs of a Soviet person. Lenin avenue served as an axis that set the direction for the surrounding development. Besides, it was a major thoroughfare directed towards Moscow. In terms of functional zoning, the whole territory was roughly divided between housing, various social infrastructure facilities, scientific and research institutions. The housing area was in fact a compact and dense development with enlarged rectangular blocks that paid little attention to the existing topography. All social infrastructure facilities were part of a larger network and were located in the neighboring forested areas at some distance from the apartment blocks, whereas large territories were allocated for scientific and research institutions [fig. 4].

urban planning and development of Kharkiv mostly result from the poor management on the part of Comrade Krykin, the Chief Architect of the city. <...> For allowing excessiveness in urban planning and development and ignoring standardized designs in construction, Comrade Krykin is relieved from the position of Chief Architect of Kharkiv by the Council of Ministers of the Ukrainian Soviet Republic, following the decree issued by the Central Committee of the USSR Communist Party and the USSR Council of Ministers" (*U Radi ministriv Ukrayins'koyi RSR* [In the Council of Ministers of the Ukrainian SSR], Kyiv: Radyans'ka Ukrayina, 23 November 1955).

17 The design team was made by architects A. Krykin, V. V. Domnitskiy, P. Ya. Feigin, I. D. Ovsyannikov, economists O. P. Avilov, M. I. Brainin, civil engineer R. I. Lyubarskiy. (Fomin V. *Khar'kov stroitsya. Sotsial'no-ekonomicheskiye i kul'turno-bytovyye voprosy zastroyki goroda*. [Kharkov is building. Socio-economic and cultural-everyday issues of urban development], Kharkiv: Prapor, 1967, p. 31).

This design proposal was subject to later modifications: social infrastructure facilities were brought back inside residential blocks; a new botanical garden of Kharkiv University was designed in Sarzhin Yar ravine; pedestrian safety measures were taken along the high-speed Lenin avenue; the entire development was implemented with standard 1-424 series apartment houses, which helped to reduce the costs significantly and simulate the method of creating "micro-districts". Technically speaking, the task was completed, as the project did comply with new ideological requirements, so in 1956 the project was approved by the USSR State Committee on Urban Planning and Construction followed by the construction of the first three blocks. However, the imitation of "micro-districting" approach did not lead to any considerable changes in the old principles of housing development.

In 1957, when the mythology of the new regime was already firmly established, the USSR State Committee on Urban Planning and Construction reviewed the project and found certain ideological contradictions that were to be eliminated. This event became a crucial moment in Leonid Tyulpa's career as an architect. He left the design team that still involved A. Krykin, I. Feigin and M. Brainin, who were going to make another attempt to formally adapt the project to new requirements. Instead, supported by architect L. Grigorenko and K. Chernysheva who was an



[Fig. 5] Sketch of Pavlovo Pole District dwelling.

Source: Grigorenko A., Tyulpa L. *Planirovka rayona Pavlovo pole v g. Khar'kove* [Planning of the Pavlovo Pole in Kharkov], Kyiv: Stroitel'stvo i arkhitektura 7 (1958), p. 11.

expert in economics in the field of civil engineering, Leonid Tyulpa embarked on developing two design proposals for mass housing development planning which were of completely different nature.

L. Tyulpa and L. Grigorenko divided the whole territory of Pavlovo Pole housing estate into micro-districts of approximately 50-70 ha each. Each micro-district was designed following the “open plan” principle, meaning that the proposed architectural forms referred to such concepts as “coziness”, “affordability” and “naturalness”¹⁸. In the center of each micro-district there were schools and day-care centers, which were grouped around gardens. Miscellaneous retail outlets, as well as social and utility infrastructure facilities (shops, canteens, laundries, garages, etc.) were located along the boundaries of these micro-districts. Apartment houses were accessed via a network of dead-end driveways within the block. Broad walking alleys were laid out that linked apartment houses with various facilities, public transport stops and small local gardens within the boundaries of the block. The housing estate could be conveniently accessed by various kinds of public transport, such as trams, trolleybuses, buses and taxi.

According to Tyulpa’s design proposal, Lenin avenue was no longer a busy highway that was going beyond the city. Instead, it was expected to approach the central square and make a gentle turn as it was going around the housing estate. In this way a major thoroughfare was transformed into a forest road that led to the so-called “recreational places” in the forest. In fact, the architect believed that the most preferable ending for this avenue would be a dead-end altogether, in order to prevent its potential connection with the ring-road¹⁹. A separate road for freight vehicles was designed in the southern part of the housing estate.

The center of Pavlovo Pole was designed on a small hill, stretching along Lenin avenue towards Alekseevskaya Balka ravine, where the architects envisaged a park and a sports complex with a stadium for 7,000 spectators²⁰. There was a plan to build a cultural center with an auditorium for 800 people, a widescreen cinema with 1,200 seats, a hotel, a shopping mall, a cafe, a post office, several retail outlets, an automatic telephone exchange office and a car park in the center of the housing estate. The square where these buildings were supposed to be located was completely traffic-free. The areas where scientific and research institutes were supposed to be located in the previous project in order to bring more “pageantry” to the area were now allocated for housing. A botanical garden with an area of approximately 60 ha was laid out on the southern slopes of Sarzhin Yar ravine. A hospital and several out-patient medical centers were designed closer the forest.

18 The meaning of these notions was determined on the pages of specialized magazines and in mass propaganda materials.

19 Grigorenko A., Tyulpa L. *Planirovka rayona Pavlovo pole v g. Khar'kove* [Planning of the Pavlovo Pole in Kharkov], Stroitel'stvo i arkhitektura, №7, 1958, p. 9-12.

20 Ignatov O., Petrenko V. *Planirovka zhilykh massivov*, Stroitel'stvo i arkhitektura, no.6, 1967, p. 15-17.

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period of mass industrial development[Fig. 6] Project of detailed planning of Pavlovo
Pole District.

Source: I. Lavrentiev's personal archives.



By several dozens of criteria, the technical and economic parameters of the project suggested by L. Tyulpa and L. Grigorenko were much better than the one proposed by A. Krykin, I. Feigin and M. Brainin, so the former was accepted for further development upon the decision of the State Committee on Urban Planning and Construction of the USSR²¹.

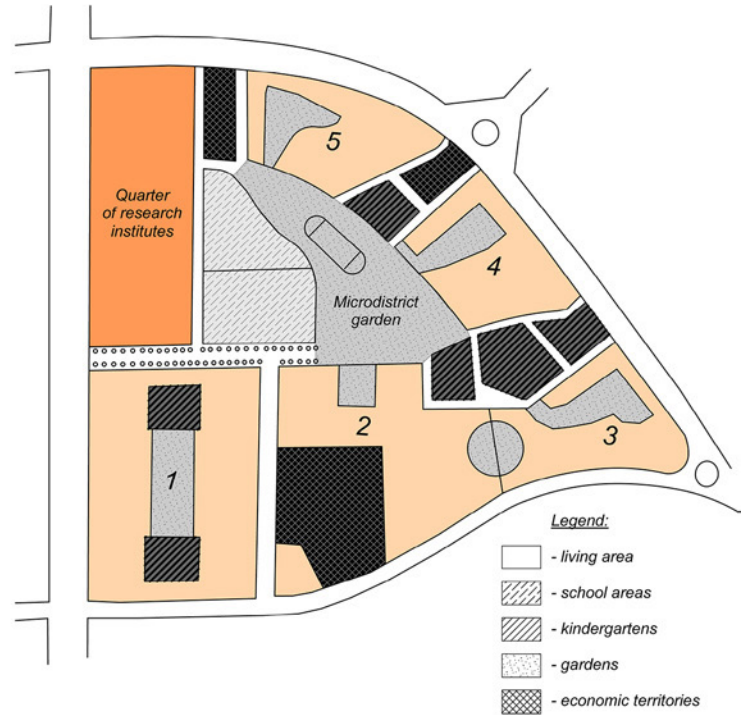
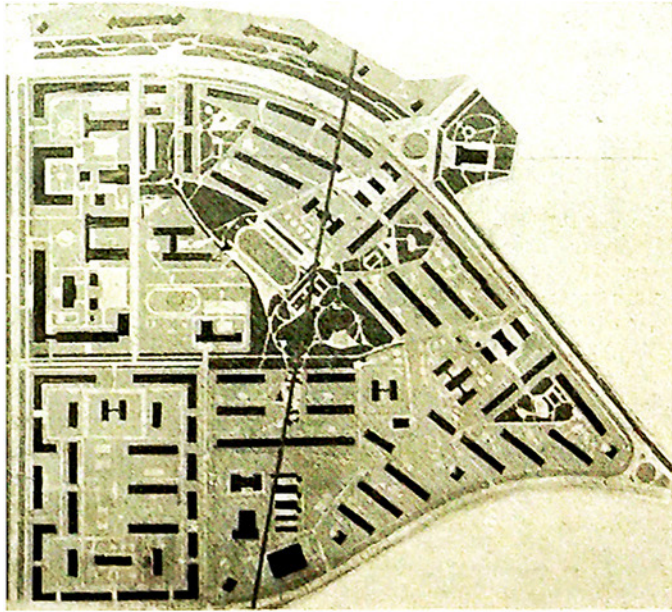
Pavlovo Pole as a Testing Ground in the Search of Efficient Planning Solutions

In 1958 L. Tyulpa proceeded to develop a detailed plan of Pavlovo Pole housing estate. He sought to improve all its technical and economic indicators: 199.5 out of 499 ha were allocated for apartment houses (compared with 139.7 ha in the previous project); 66 ha for social and utility infrastructure facilities (instead of 48.6 ha), 59 ha were allocated for streets and squares (instead of 22.5 ha), 54 ha for public green spaces (compared with 38.1 ha). One of the micro-districts was totally occupied by a scientific research institute [fig. 5, 6, 8].

Micro-district No. 1 within Pavlovo Pole housing estate was the first micro-district in Kharkiv where the principle of “micro-districting” was implemented.

Mirco-district No. 1 occupied the territory of 120,000 square meters and was designed for 13.3 thousand dwellers. It was divided into 5 residential blocks for 1,900 – 2,700 people in each. These blocks consisted of 6-8 slab apartment houses and two apartment houses for small families with the so-called corridor-type planning. Each residential block was supposed to have a courtyard with a small garden with sports facilities and a playground, a splash pool and recreation areas. There were playgrounds for children and board games areas designed next to each building. The project envisaged the construction of 5-storey buildings (series 1-438, 1-445 and 1-468) within each block, and there was also a plan to build four single-section 10-12-storey buildings along Shlyakhovaya street. Spaces among residential blocks were supposed to accommodate various social, retail and utility facilities, such as grocery and department stores, garages, laundries, workshops, storage rooms, utility sheds for janitors, and public restrooms. As a rule, these facilities were detached buildings. The basement floors in the apartment houses for small families (1-445-3 series) were occupied by shared kitchens, various service facilities (e.g. shoe repair shop, etc.), hairdressers, and the so-called “red corners”

21 A year later L. Tyulpa described the shortcomings of Krykin's design in the following way, “*Lenin avenue intersects the center of the housing estate, makes a slight turn towards a clearing in the forest and finally joins the bypass highway and a major highway bound for Moscow. Along its entire length, the avenue is designed as a “gateway” highway with a 55-meter profile. The streets are designed in a very deliberate geometric pattern that does not always take into consideration the natural peculiarities of the plot. For example, in its northern part the avenue crosses one of the arms of Alekseevskaya Balka ravine, while the design of Novo-Prodolnaya Street does not take into account the edge of the forest. Development along some of the streets, particularly that of Novo-Prodolnaya and Ochakovskaya streets is too homogeneous. <...> It would significantly worsen the living conditions of people, leading to the duplication of existing outbound roads and requiring significant tree cutting. Now Lenin avenue is a major road connecting the city center with Pavlovo Pole housing estate and recreational places in the forest nearby*” (Grigorenko A., Tyulpa L. *Planirovka rayona Pavlovo pole v g. Khar'kove* [Planning of the Pavlovo Pole in Kharkov], *Stroitel'stvo i arkhitektura*, №7, 1958, p. 9-12).



[Fig. 7] General plan and functional zoning of district No. 1.

Source: Tyulpa L. *Novyy mikrorayon v Khar'kove* [New microdistrict in Kharkov], Kyiv: Stroitel'stvo i arkhitektura 10 (1963), p. 5.

for Communist propaganda. The method of “row houses” was first used in this micro-district. The total length of one such “row house” was about 180 m.

As many as five kindergartens (for 140-280 children) and two schools (for 520 and 960 students, the former being the existing school), were designed for the 2-438 series apartment houses and they were located next to the local garden that belonged to this micro-district. For the sake of more efficient use of the territory, it was assumed that both schools would share sports facilities. The garden played an important role in the life of the micro-district: firstly, it separated children facilities from residential buildings; secondly, it integrated all green areas into one single network; thirdly, it absorbed all major footpaths that led to public transport stops and adjacent micro-districts, as well as sports grounds and various social and utility facilities.

The proposed design did not allow transit vehicles in the micro-district – all driveways finished with dead-ends. The distance between driveways and the most remote entries to apartment buildings did not exceed 60-80 m [fig. 7].

Tyulpa's designs were distinguished for their thorough elaboration. He searched for more efficient design and engineering solutions and he criticized his colleagues for insufficient study of the local topography, which invariably resulted in higher basement floors and increased the cost of construction. L. Tyulpa pointed out that the existing catalogs of standardized designs issued in 1958 had no single-section houses and buildings, where sections had different grade levels; he also believed that it was worth taking into account the existing trees as it might significantly reduce landscaping costs in future. It was L. Tyulpa who made sure that all design documents were developed and released for the whole micro-district, rather than for individual blocks, which helped to reduce discrepancies in the course of their alignment.

Restoration of Kharkiv city center and construction of Saltovskiy housing estate for 300,000 dwellers: the implementation of modernist dream

Leonid Tyulpa was not a member of the design group that developed the master plan, but his work during that period of time was closely connected with it. Thus, in 1963 L. Tyulpa was appointed member of Urban Planning Group and together

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[Fig. 8] Construction of Pavlovo Pole District.
Source: I. Lavrentiev's personal archives.

with his colleagues he embarked on designing of what turned out to be the largest housing estate in the whole Ukrainian Soviet Republic, namely Saltovskiy housing estate for 300,000 dwellers. Within the period from 1966 to 1967 he also made a design proposal for the development of Kharkiv city center. Both projects were later included into the master plan of the city.

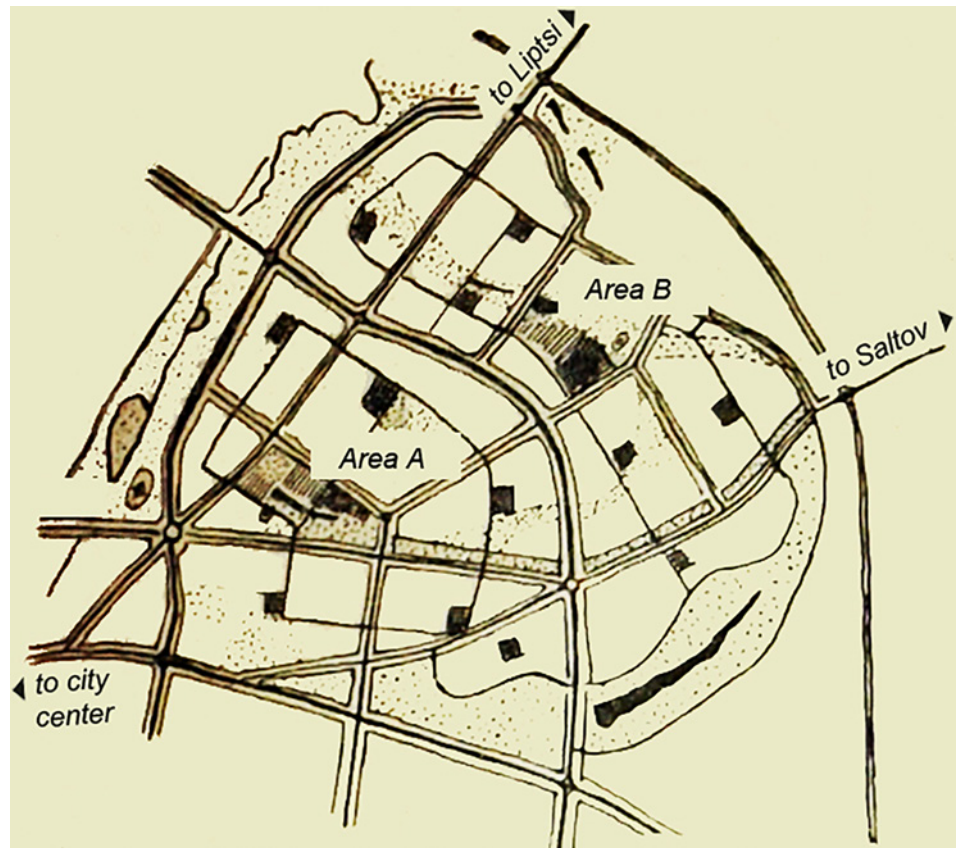
By 1967, in collaboration with G. Wegman, P. Shpara, G. Galushko, and V. Belogub, L. Tyulpa had developed a project of Kharkiv city center restoration. According to this project, the central part of the city was regarded as a site for comprehensive restoration. Having built several micro-districts, the designers understood the necessity of bring the central part of the city into conformity with the general principles of urban design, with those standards and requirements that any new development had to comply with. The center was divided into functional areas. The area between Sumskaya and Rymarskaya streets, which already hosted a number of theaters and cinemas, was going to become a “cultural center of Kharkiv”, added by a new opera and ballet house. The area between Klochkovskaya street and the Lopan river was reserved for what was called “sports sector of the city center”, with a new Palace of Sports, a stadium, several sports grounds and pavilions. The project suggested the renovation of the existing residential blocks, introducing several new 9-storey multi-section houses, a number of facilities belonging to scientific and research institutions, “Intourist” hotel and a circus. Besides, it was planned to unite all the green areas into a single system, which involved the expansion of Shevchenko garden and the removal of run-down housing on the slopes of Klochkovskaya street. The slopes were turned into green areas, and so were the riverfronts and the area to the east of Pobedy park.

The architects also suggested the restoration of the existing transport system. In order to facilitate the south-north pedestrian traffic, the east-west transit traffic was arranged along the southern border of the city center (which meant the construction of a new thoroughfare with two tunnels under Teveleva square), whereas the north-south transit traffic was organized along Klochkovskaya street with an access to Oktyabrskoy Revolyutsii street.

Before starting the design of Saltovskiy housing estate, Leonid Tyulpa outlined the following objectives to be achieved in this project. It sought to provide all necessary conditions for public welfare and recreation; to create a network of social and

[Fig. 9] Planning of Saltovskiy residential area. Layout.

Source: Tyulpa, L. *Planirovka Saltovskogo zhil-massiva* [The layout of the Saltovskiy residential development], Kyiv: Stroitel'stvo i arkhitektura 3 (1964), p. 7.



utility infrastructure facilities; to ensure transport and walking accessibility both within the district and its access to outbound roads; to provide adequate living conditions during construction; to make best use of the existing topography. That was why he considered Saltovskiy housing estate as an independent satellite city of the historical Kharkiv, which would have its own center and all the elements typical of a city. This approach was supposed to result in a balanced city designed “from scratch”, taking into account the needs of the population, the most feasible public transport routes, the arrangement of cultural and recreational facilities and institutions. However, this decision had to be abandoned because the creation of a new city near the existing one would entail a major change in the entire internal structure of the radial ring communications of the city with a million-plus population. Since it required additional material expenses, it was decided to design Saltovskiy housing estate as part of the existing city in the form of two large interconnected residential areas connected with the rest of the city by means of arterial grid.

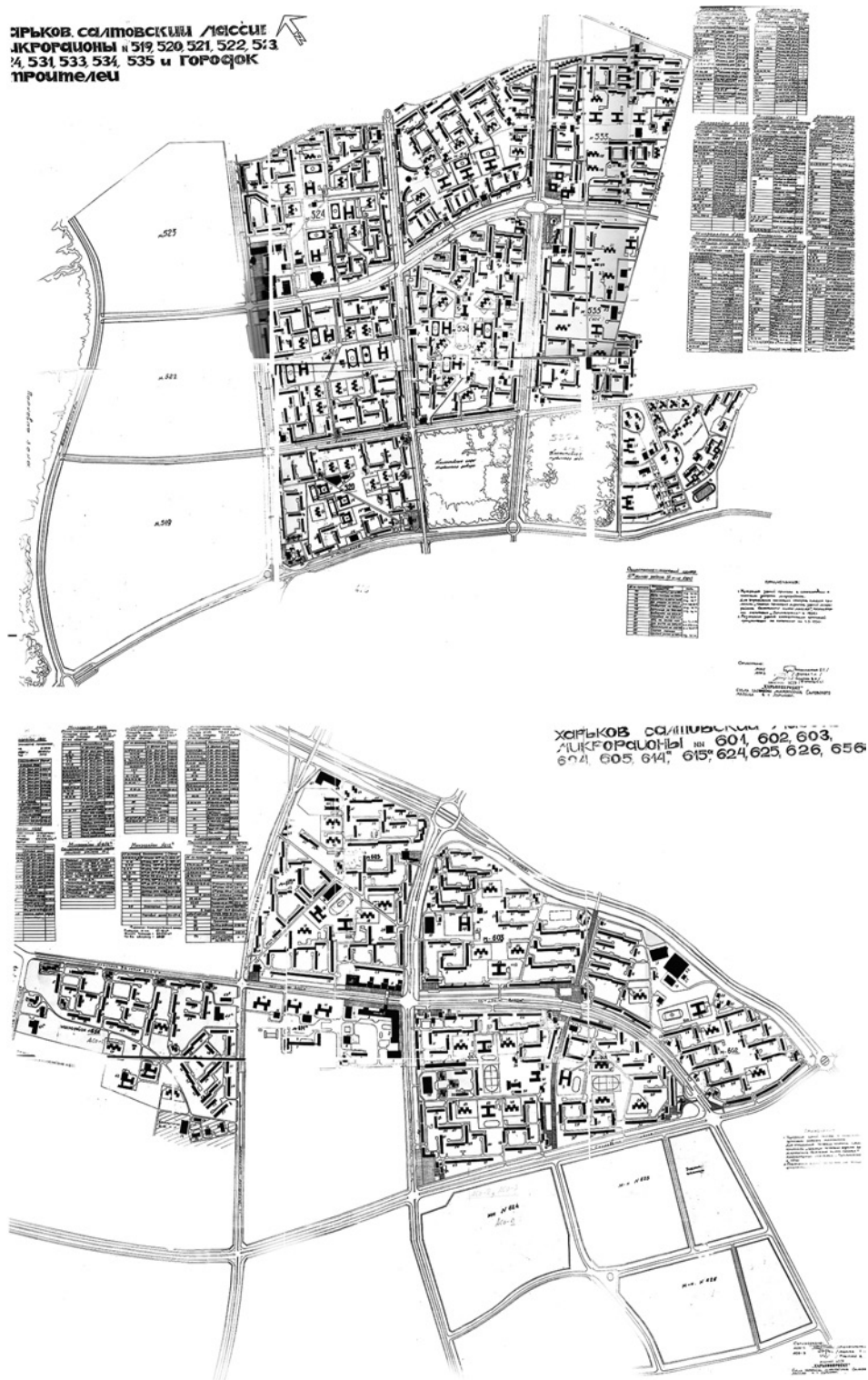
By 1963 it had become clear that the plan to build 16 million square meters (9 meters per person) by 1970 was not achievable. In order to accomplish that plan, it would be necessary to increase the amount of built housing up to 500 – 700 thousand square meters per year, which was beyond the capacity of Glavkharkovstroy (General Agency for Urban Planning and Construction in Kharkiv).

22 He said, «I think that the issue of medium number of floors for Kharkiv should be addressed in the direction of its increase. This is the only possible way to the development of the required number of housing without significant extension of city limits. High-rise buildings with a pitch of about 100 m, a large highway of 85 m in width, boulevard – all of these create appropriate scale and emphasize the architectural importance». (Tyulpa L. *Novyy mikrorayon v Khar'kove* [New microdistrict in Kharkov], Kyiv: Stroitel'stvo i arkhitektura 10 (1963), pp. 22-23).

L. Tyulpa made a decision to “enlarge every structural element within the housing estate”²² and divided the whole estate into two residential areas “A” and “B” (100 thousand dwellers and 2 thousand ha in each area). Each area was divided into several micro-districts of 130-480 ha (seven and six micro-districts within the residential areas “A” and “B” respectively). These residential areas were predominantly occupied by 9-12-story apartment houses with some space reserved for higher buildings. The distances between the intersections were 0.9 – 1.5 km. Placed within a walking distance of 400 meters, retail outlets and social and utility infrastructure facilities were enlarged to provide for the needs of up to 30 thousand people. L. Tyulpa was quite convinced that this kind of “enlargement”

ALEXANDER BOURYAK
IGOR LAVRENTIEV
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Leonid Tyulpa. The architect of the
period of mass industrial development



[Fig. 10] Planning of Saltovskiy residential area. Districts no. 519, 520, 521, 522, 523, 524, 531, 533, 534, 535, 601, 602, 603, 604, 605, 614, 615, 625, 626, 656. Drawings.

Source: I. Lavrentiev's personal archives.

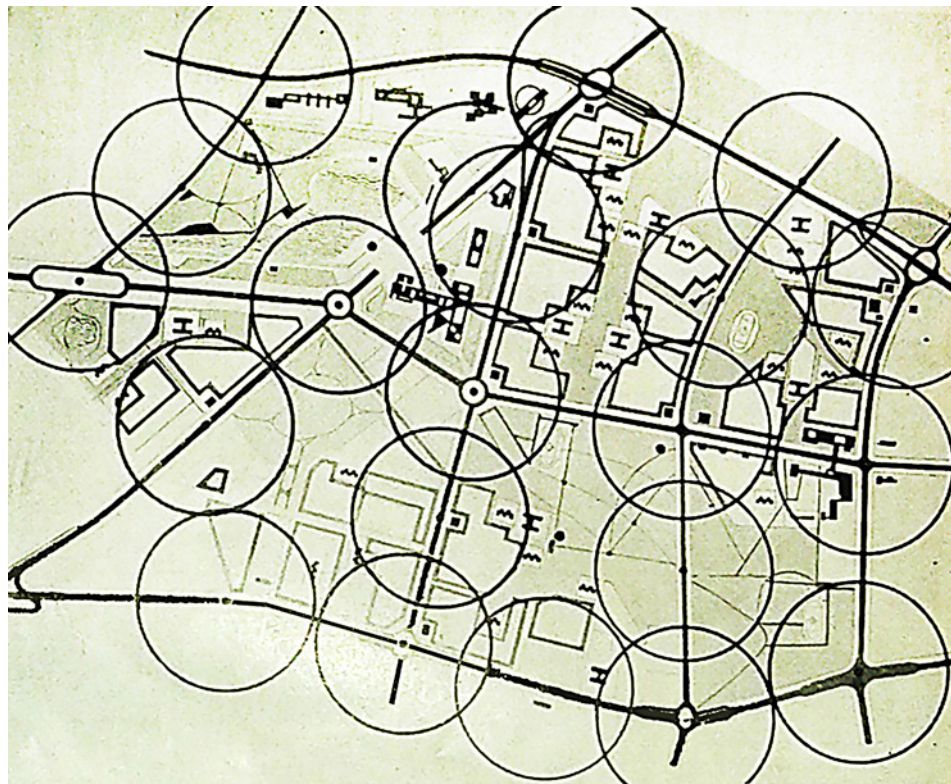
would be very beneficial, as it was expected to reduce the construction and maintenance costs, ensure a higher level of service, bring a greater variety of goods to department stores. The centers of those residential micro-districts were duly located in compliance with the standard radius of 1 km, whereas the distance between the district centers was 2 km. The design proposal suggested the location of public transport stops, as well as the accessibility and coverage radius [fig. 9].

The total layout of the housing estate was based on the “home-work” system, meaning that the life of a common dweller was organized between these two destinations. So the living scenario was arranged along the network of high-speed roads which were essential for providing a convenient and quick access to workplaces. There were some public transport routes available within the territory of the housing estate, such as buses, trolleybuses, trams, shuttle buses and taxis. A new underground line was expected to appear here as well²³. Along the

23 Full-scale works on the first site of the second stage of construction, from Istoricheskiy Muzei station to Barabashova station, began only in August 1977. The site had a length of 6.8 km and consisted of 5 stations. It was put into operation on August 10, 1984.

[Fig. 11] Residential area no.5. "Focusing" layout.

Source: Tyulpa, L. *Novyye planirovochnyye resheniya v zastroyke Saltovskogo massiva* [New planning solutions in Saltovsky residential development], Kyiv: Stroitel'stvo i arkhitektura 3 (1973), p. 3.

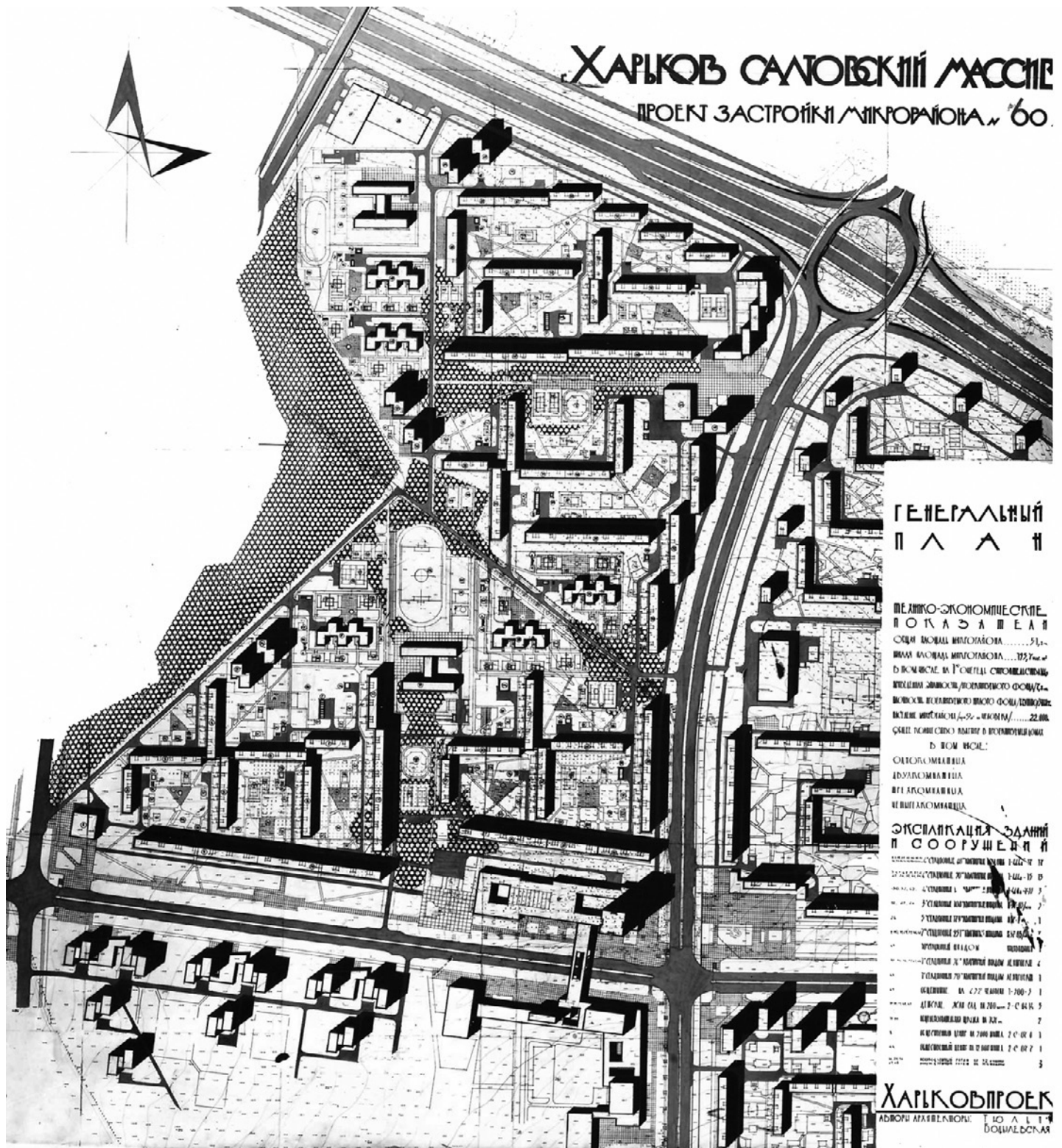


widest thoroughfares, namely Akademika Pavlova street and Traktorostroiteley avenue, there was a plan to build high-rise buildings and large public buildings. The intersections of major roads, on top of low hills, turned into local centers of residential blocks, where the dwellers could have access to social and utility infrastructure facilities and parks with well-equipped sports facilities.

The so-called "focusing" method was employed for the detailed planning of residential blocks, which was used in the Ukrainian Soviet Republic for the first time. The main idea behind this method was placing social and utility infrastructure facilities around public transport stops²⁴. Public transport stops became the primary elements of social and utility infrastructure network. This method made it possible to enlarge the grid of major thoroughfares, to reduce the number of intersections, to increase the distance between transport stops to 800-900 meters, to reduce the number of stops, and to increase the overall speed of traffic by 20%. The "focusing" method fully complied with the principle of "micro-districting". By means of employing this principle, a micro-district was not limited to the streets, but it became organized around the "focus", i.e. the radius of accessibility. The number and the capacity of social and utility facilities that were supposed to be covered by one "focus" center was carefully calculated, the location of public transport stops was well thought through, and the layout of major footpaths was outlined. The estimated population of one "focus" center in Kharkiv was approximately 28-30 thousand people [fig. 10, 11].

24 *"The basic idea of "focusing" is the concentration of residential development around public transport stops within the radius of 400-450 meters and placing various social and utility facilities (groceries, retail stores, canteens, cafes, minor utility facilities, post offices, etc.) that require access to transportation routes in the immediate vicinity of these stops. The area where housing and all the above mentioned facilities were located was called "a zone of coverage".* (Tyulpa, L. *Planirovka Saltovskogo zhilmassiva* [The layout of the Saltovsky residential development], Kyiv: Stroitel'stvo i arkhitektura 3 (1964), pp. 6-8). Other facilities used by the population (schools, kindergartens, nurseries, public gardens, sports facilities, etc.) which did not require immediate access to transport) were located beyond this "zone of coverage". These were the so-called "neutral areas" Later, this method was applied in the design of residential areas of other cities, for example in Kyiv, Darnitsa.

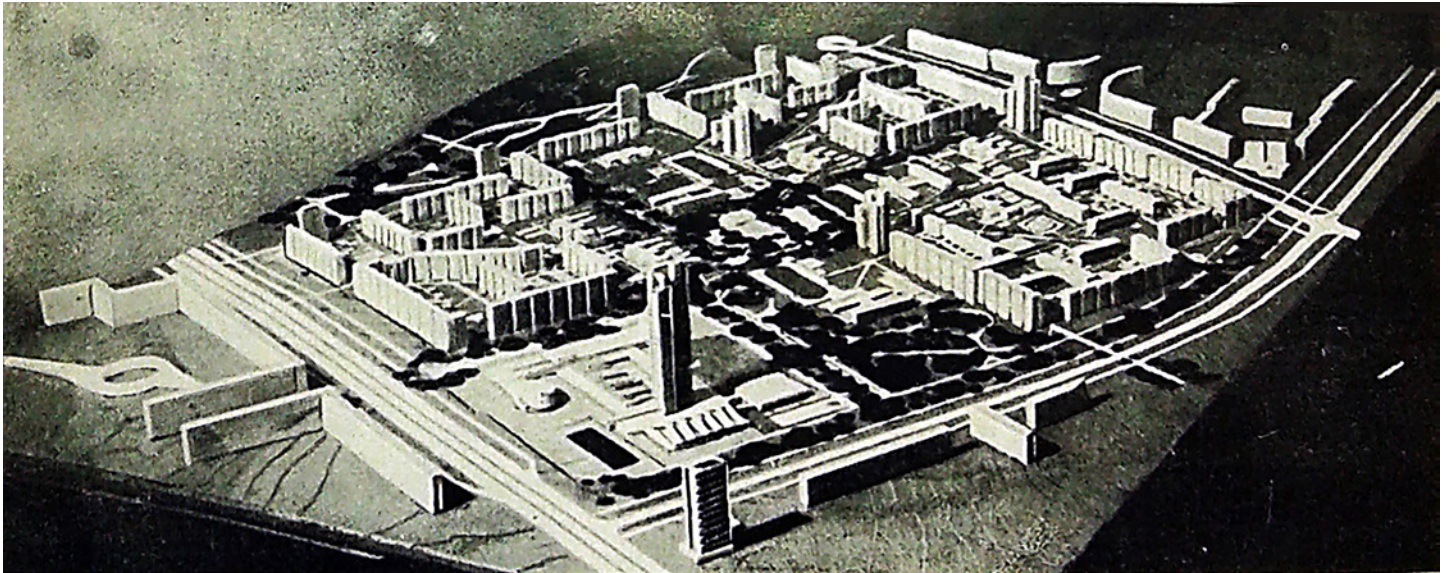
Within micro-districts residential groups were usually placed at the corners of the territories located between busy thoroughfares, whereas more "neutral" areas were allocated for local gardens, schools and kindergartens. The area followed a clear functional diagram: residential groups were located in the vicinity of public transport stops and social and utility infrastructure facilities; retail outlets and other facilities were located along the thoroughfares and near public transport stops; schools and kindergartens were placed in green areas in the core of the micro-district. In the same way as in the design of Pavlovo Pole housing estate, L. Tyulpa placed schools and kindergartens outside residential courtyards, which made it possible to create large courtyards with all necessary facilities, green



[Fig. 12] District no.602. Project.
Source: I. Lavrentiev's personal archives.

spaces, recreation places, which also provided apartment houses with noise protection and privacy.

The design proposal also envisaged the construction of a university campus, i.e. several colleges with housing for students and teaching staff, a sports complex and utility facilities, alongside with a construction camp and scientific and research institutions. Taking into account the peculiarities of topography and river floodplains, a unified system of green areas was developed that brought together all local parks, gardens and boulevards, creating a comprehensive walking scenario not only within the micro-districts, but also throughout the entire housing estate. The year of 1959 marked the beginning of Bolshaya Zhuravlevskaya water reserve (the so-called "Kharkiv Sea"), measuring 0.6 km wide and 3 km long, which was meant to become a key destination for recreation: a stadium, a park, beaches and boat



[Fig. 13] District no.524. Model.

Source: Tjulpa, L. *Novyie planirovochnyie resheniya v zastroyke Saltovskogo massiva* [New planning solutions in Saltovsky residential development], Kyiv: Stroitel'stvo i arkhitektura 3 (1973), p. 3.

stations were designed there. On the southern side of the housing estate, along the Nemyshlya river, another park with man-made lakes was planned.

The main difficulty faced by the urban planners was a rather poor “palette” of standardized buildings. The task of locating various social and utility infrastructure facilities was further complicated by the absence of standardized designs for such facilities with a capacity of 25-30 thousand people. Therefore, in some cases the architects had either to modify the existing projects, or to allow lower capacity of these facilities, or to duplicate institutions that were identical in their functions. While designing each micro-district, L. Tjulpa followed the rule he established himself: there had to be at least one truly original project designed for each micro-district.

[Fig. 14] Saltovskiy residential area. Fragment of dwelling area.

Source: I. Lavrentiev's personal archives.



Saltovskiy housing estate was built very rapidly due to the use of prefabricated structures produced by Kharkiv-based factories (DSK-1 and DSK-2). 320-480 thousand square meters of housing were built annually. There were cases when a nine-story house was erected in 32 days, while the installation of the superstructure took only 17 days²⁵ [fig. 14, 15].

The last years of Leonid Tyulpa's active work were associated with the design of thirteen micro-districts of Saltovskiy housing estate (numbers 601, 602, 603, 604, 5, 6, 605, 521, 520, 522, 624, 625 and 626) [fig. 12, 13].

Conclusion

The approval of design solutions on the basis of their technical and economic feasibility was the main method of architectural design in the USSR starting since 1956. Kharkiv is a unique platform for studying mass housing development. The period between the two world wars saw the appearance of a large number of new types of housing featuring an active search for feasible planning solutions, whereas Pavlovo Pole and Saltovskiy housing estates are vivid examples of how Soviet housing evolved after World War II. The facts that architect L. Tyulpa was largely involved in designing these housing estates and a number of other key projects in Kharkiv has given an opportunity to personalize the research and examine the evolution of architectural forms from the perspective of personal design experience of the architect.

L. Tyulpa is a key figure in the Kharkiv city planning, he was directly involved in the redevelopment of the post-war Kharkiv. The architect's creative career evolved through all key stages, which illustrated the major processes in the postwar Soviet architectural theory, i.e. restoration of the city after the Second World War, the period of experiments and the search for efficient solutions in housing development, modernist restoration of historical cities and construction of huge housing estates. He made decisions at all levels, from conceptual solutions of master plan strategy to residential buildings individual projects.

Pavlovo Pole and Saltovskiy housing estates were experimental sites where new design methods were developed. These projects laid the foundations for other housing estates development in Kharkiv, i. e. Alekseevsky housing estate, Novyie

[Fig. 15] Saltovskiy residential area. Fragment of dwelling area.

Source: I. Lavrentiev's personal archives.



25 Shchob vidbulosya novosillya// Sotsialistichna Kharkivshchina, 1971, July 6.

doma, Gorizont, etc. Despite the fact that these two implementations were created in other different economic and political context, they were adapted and they are operating today. This allows us to talk about the possibility of a successful integrated regeneration of this urban environment.

Due to development of these two housing estates during a very short period of time, less than 35 years, more than 350,000 people were able to settle their new individual apartments. However, L. Tyulpa's ideas were not fully realized. Unwieldy bureaucratic Party apparatus and the imperfection of the construction procedure technologies led to mistakes, which had to be solved directly on the fabricating yard. Despite the fact that L. Tyulpa managed to obtain permits and sometimes designed individual projects for service objects, their number was very small. The housing estates were large and monotonous; they could not to answer the people needs in the quality living environment. Saltovskiy housing estate also was not realized as a separate socialist city that L. Tyulpa wanted. Although this non-realization allowed the estate to better adapt in the new economic conditions.

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