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An architectural cross section between city and countryside. Notes on constructivist architecture in the agri-food sector between NEP and First Five-Year Plan.

Abstract
The film by S. M. Ejzenštejn "The Old and the New", documents the process of collectivization of the countryside in USSR between the end of the NEP and the First Five-Year Plan. This text, documents, in parallel, the process of transformation of the city and the countryside in this period.The city from "center of consumption" and market of agricultural production becomes "center of distribution and production" of meals, The agrarian settlement from the village becomes a "sovkhoz" (state farm). The plans of the sovkhozes of Gigant and Verbljud with their facilities and communal housing represent significant cases of constructivist architecture in rural areas, before the affirmation of the architecture of Socialist Realism both in the city and in the countryside.

Keywords
URSS — Constructivism — Sovkhoz planning

1. Old and New

Old and New is the title of the film shot by Sergei Mikhailovich Eisenstein between 1926 and 1929 (Kepley 1974) that documents the transition of the organization of the Soviet countryside between the NEP (New Economic Policy, a hybrid model between liberalism and cooperative organization), and Five-Year Planning, a pure socialist model centrally governed (Carr, Davies 1969).

Eisenstein circumscribed his task to the "general line" of the 14th Congress of the Communist Party of the Soviet Union addressing rural collectivization: an ideal opportunity to produce a monumental fresco with «agricultural peasant material» (Eisenstein, 1928). In 1928, however, he had to complete *October* for the 10th anniversary of the Revolution. When he moved back to *The General line*, that was the title of the script in 1926, the reality of fast-paced collectivisation had surpassed fiction.

Finalising the movie in February 1929, Eisenstein had to change the film's ending and title: *Old and New* and, on 4 June 1929, condensed his impressions in a letter to the French movie critic Leon Moussinac:

> […] I just had a remarkable run through northern Caucasus and Ukraine. I have seen with my own eyes what 'building socialism' means. Nothing could be more heroic and full of pathos! The immense ploughing of the new sovkhozes (founded this year). The huge factories under construction. I went to places where, three years ago, there was nothing but endless plains, and now huge half-finished factories are rising. Not yet covered with roofs, they are already operating; it is amazing, almost impossible to describe. By dint of propaganda, we involuntarily stop believing in what we are promoting. Every cardinal is an atheist. All the sudden we see in pure reality what we said, propagated and wrote […]. (Morandini 1966, pp. 55-56)

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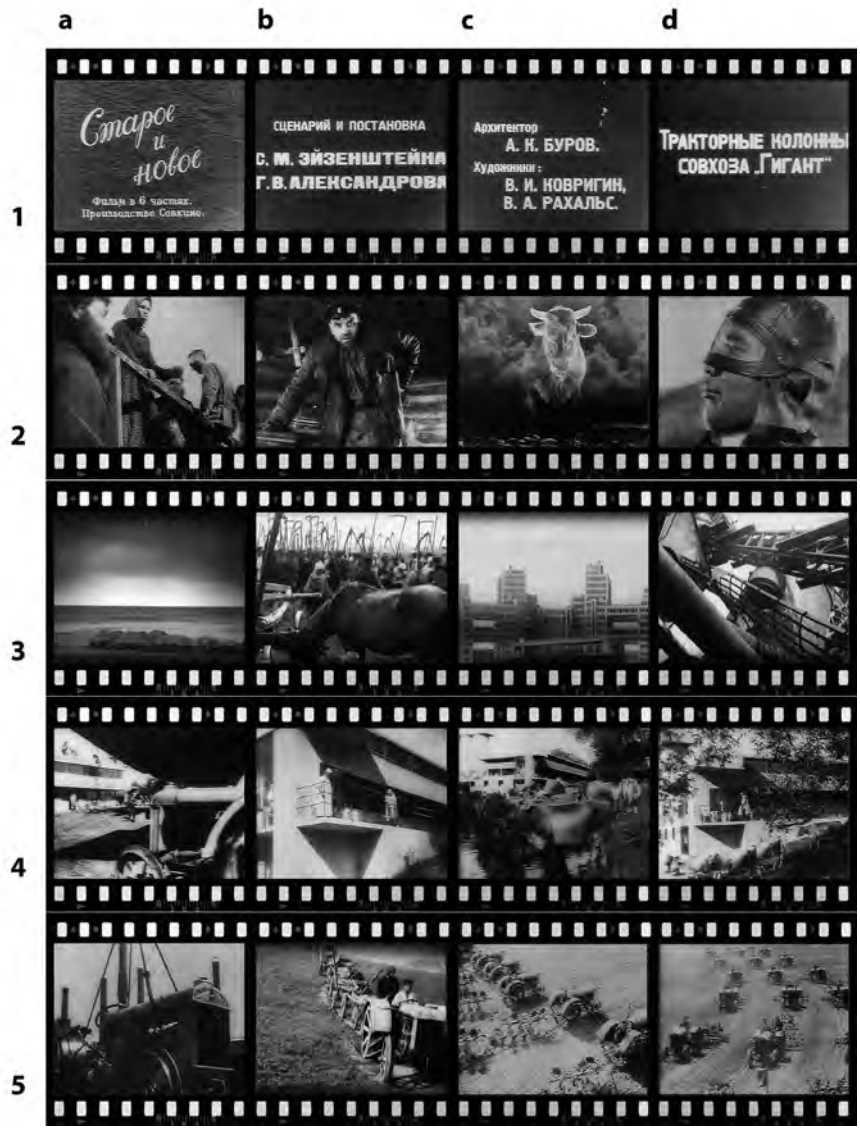

Fig. 1
Frames from the film by S. M. Eisenstein *Staroe i Novoe (Old and New*), 1929.
1a – *Old and New,* film in 6 acts; 1b - Written and directed by S. M. Eisenstein and G. V. Aleksandrov; 1c – Architectural setting by Andrej Burov. Scenography by V. I. Kovrigin, V.A. Rakhal's; Tractors columns of Sovkhoz Gigant; 2a – The young peasant Marpha; 2b – The Agronomist; 2c – The bull Fomka; 2d – The Tractor driver; 3a – The village of the poor peasants; 3b – Agricultural works by hands (mowing) and animals (ploughing); 3c – The Soviet headquarter (Gosprom in Kharkov); 3d – The Industrial plant; 4a/d – The Sovkhoz (scenery designed by A. Burov); 5a – Tractor production; 5b – Marpha and the Tractor Driver carrying away the Old ox carts; c/d – The charging towards Socialism of tractor columns from the Sovkhoz Gigant.

«General'naya liniya» was a quote from Lenin, stressing the importance of a voluntary transition towards collectivisation: in some cases, an efficient work organisation by local communities proved more effectiv than many centralized institutions (Eisenstein 1926). In 1929, when collectivisation became a reality, the new title *Staroe i novoe* (another quote from Lenin) shifted the focus to large-scale industrialisation, ending with the spectacular scene shot in the spring of 1929: columns of tractors and the title "forward… forward… towards socialism" (Eisenstein, October 1929).
Staroe i novoe, however, did not differ much from General'naya liniya. Depicting rural modernisation in a village in Caucasus steppes of the 1920s, where reclamation and agrarian colonization works were then underway (Baranskij 1956), Eisenstein's protagonists include "the Agronomist," heralding the scientific organisation of agriculture, "the Bull", combining animal traction (the *New*) and fertility (the *Old*), and "the Tractor" epitomizing mechanisation. In addition to the traditional Russian rural linear village and the *sovkhoz* scenography by A. Burov, the locations include the tractor manufacturing industry Putilovsky in Leningrad and the famous *Gosprom* building designed by Sergei S. Serafimov in Kharkov, representing the Soviet administrative centre.
The final scene showed columns of Krasnyy Putilovec tractors[1] operating in the Gigant State Farm in marching towards socialism in a collectivised

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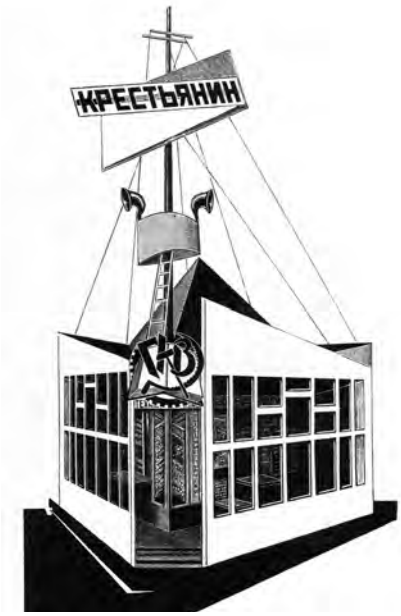
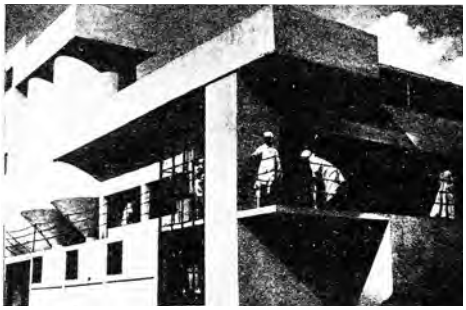
Figg. 2 **(1-2-3-4-5-6)**
The architectural imagery of the avant-garde between countryside and city during the NEP, 1923-1926.
1. Moscow Pan-Russian Exhibition of Agriculture and Crafts, 1923: view from Moscow river; 2. A. Gan, Book kiosk for a peasant village, 1926; 3.-4. A. Burov, Scenography of the mechanized farm for *The General Line/ Old and the New*, 1926; 5. I. I. Sobolev, Bread Factory, 1926; 6. M. Barščˇ, M. Sinyavsky, Project of a vegetable market in Balotnaya Square in Moscow, 1926: view and plan of variant A.





countryside, was shot in the Salsk steppes, near the sovkhoz Gigant, whose machines were lent for filming, also appearing at the end of the titles of the "interpreters".

The *Old* of the film, however, was not only the archaic arrangement of rural society in the USSR before the socialist collectivization of Five-Year Planning, but also the very structure of the first Soviet society developed with the NEP. The corrections that Ejzenštejn, accomplishing precise requests from the Party (Kepley 1974), had to bring to the script thus also reflected the change in the project of the socialist settlement set by the Plan with the intensive industrialization of the country, and in forced stages. The idea of modernization expressed by the scenography of the "futuristic" mechanized farm of constructivist inspiration designed in 1926 by A. Burov (1926b), still linked to the architectural imagination of the NEP, contrasted with the spectacularism of the mechanization of agriculture expressed by the mass of tractors of the final scene, showing the greatness of the Plan. In fact, the form of conducting agriculture was no longer that of the small cooperatives of the *artel* of a few dozen hectares that the young Marfa (the *komsomolka*[2] protagonist of the film) organized in the village, but had become that of the sovkhoz, a state company of exceptional size of 50-100,000 hectares whose heart was the agricultural machinery and tractor station (*Mašinno-traktornaj a stancija,* henceforth MTS) gathering a battalion of over 300 tractors. Perhaps coincidentally, such concentrations of machines could be found at that time precisely in the Salsk Steppes in the North Caucasus: nearby, where the film had begun in 1926, were two of the best-known experimental sovkhozes of the First Five-Year Plan, Gigant (which lent the team of tractors for filming) and Verbljud, were under construction since the late 1928.

2. The NEP architectural imagery of the reform of agricultural production in the countryside and the city

In 1926, the scenography by A. Burov was published in the journal of the OSA (Association of Modern Architects) *Sovremennaya Architektura* (Contemporary Architecture, henceforth *S.A.*), directed by M. Ja. Ginzburg and A. A. Vesnin, leaders of the constructivist movement.
In the same year, S. A. published other project almost if they were the elements of an architectural section of the agri-food sector between the countryside and the city. Together with the mechanized farm by Burov, these projects fix the key points of the reorganization of food production and distribution in socialist society in the mid-20s:
- The project of a book kiosk with the function of a peasant club by Alexei Gan for the Sovietized village.
- The mechanized farm of the same scenography as Burov.
- A plant for the industrial production of bread.
- The central wholesale market of food products in Moscow.

The project of the book kiosk-peasant club by Gan is presented in this framework:

> The Sovietization of the countryside follows several paths. The tractor and electrification, the cooperation of the rural population, new forms of land cultivation, political-educational work, and much more, were constituting that colossal socio-cultural activity conducted by the party and by the proletarian society that was developing in

the countryside. In the absence of sufficient means, the involvement of the peasants in the construction of new social and economic forms, continues to grow in the old situation of the rural courts-izbas and also their collective cores, which are already integral parts of the Soviet countryside (the reading izbas, the clubs, etc.) but which nevertheless remain architecturally undefined.
In the rural villages of the past only the church occupied, if one can say so, an architectural place. This does not have a rival building in the countryside, which can play a role of agitation for a new lifestyle with its presence in the architectural context of the village. (Novikov 1926)

Gan's project was therefore functional to define an "architecturally identified place" in the village, to promote through the acculturation of the peasants the modernization of the traditional agrarian settlement. The design of the book kiosk/peasant club adopts the compositional clichés of early constructivism, halfway through folkloric tradition and avant-garde, such as that of the pavilions of the *Moscow All-Russian Exhibition of Agriculture and Crafts* held in 1923 at the end of the Civil War, six years after the October Revolution, where Russian rural stereotypes merged with avant-garde solutions in a scenography of wooden structures anticipating a possible balance between modernity and tradition (Astaf'eva-Dlugač 1991, pp. 108-117).
Returning to the film *The General Line/Old and New*, the core of agricultural production during the NEP was still represented by medium landowners (the *kulaks*) and the small owners of the *Slavic village* founded on the ancestral organization of the *obščina*, celebrated by nineteenth-century Russian populists such as Bakunin as a communist society *in progress* through the collective management of agricultural property and production (Venturi 1972, p. 405). The film documents the reorganization of the *obščina*, where Marfa lives, into a dairy *artel*. Its modernization is represented in the introduction into the *artel* before the mechanical skimming machine of milk, and then showing the form that the same *artel'* could take in the future – namely mechanized farm scenography - which in the film is called Burov's "Sovkhoz", a term that was to take on a completely different meaning after 1928.

Burov himself wrote (Burov 1926 b) that he had avoided decorative effects, to focus instead the viewer's attention on the new life and methods of industrialised agriculture, synthesised by a new architecture achieved with new materials and construction techniques (Burov 1926, p. 470).

The Soviet city of the end of the NEP that appears from the projects published in the first three years of *S.A.* from 1926 to 1928, is essentially a workers' settlement, and a commercial settlement. There are many constructivist projects for commercial company headquarters in Moscow that parallel those for Soviet institutions and that outline a city made of large tertiary complexes, starting with the emblematic Soyuz Center by Le Corbusier (1928), headquarters of the Union of Consumer Cooperatives through which, during the NEP, farmers could trade 70% of their harvest on their own.

The two other buildings published in *S.A.* should be placed, completing the series of named projects for the agri-food sector of the NEP of the constructivist avant-garde.
The project by student of the VChUTEMAS I. I. Sobolev (laboratory of A.

A. Vesnin) for the Bread Factory (Sobolev 1926), is an industrial complex dominated by the mass of the two grain silos (rye and wheat) connected to the railway serving the mill and the mechanized bakery. The bread factory become a central theme in the reform of food distribution in industrial cities in the late 20s with the Five-Year Planning, with a type, however, totally reformed.

The Moscow Wholesale Food Market is the graduation project at VChUTEMAS by M. Barshch and M. Sinyavsky (rel. A. A. Vesnin; Barshch and Sinyavsky 1926), replacing the ancient Balotny annonario market (vegetables, grains and spirits) significantly located in front of the Kremlin on the island between the Moskva and Vodootvodnij canal. The complex combines in two planimetric variants of the gallery of wholesalers' shops, a series of blade buildings for commercial offices[3].

The Wholesale Food Market was not realized because a few years later, with the Five-Year Plan, the distribution system of food products changed radically with the disappearance of the "market" of small producers and distributors replaced by centralized distribution at prices set by the State[4].

3. The new form of agricultural production of the Five-Year Plan: the Sovkhoz

Eisenstein himself, on 16 October 1928, admitted that the sovkhoz scenography impressed even the technicians engaged in rural modernization, so much so that the Zernocentr (Grain Centre) called upon Andrei Burov to design a huge sovkhoz, 'Zernovoy fabrik', near Rostov «in image and likeness» of the movie set (Khazanova 1973, p. 468).

This assignment announced to Burov was not implemented yer, in the steppes of Salks in the Rostov-on-Don Region, two experimental granary sovkhoz (*Zernosovkhoz*) by *Zernotrest*[5] were built from the beginning of 1929 to 1931, whose project of the central settlement (*central'naya usadba*) was entrusted to the company Teplobeton of Moscow (Kazus 2009, p. 99), with another famous constructivist architect P.A. Golosov[6] acting as consultant.

The plan of the central settlement, and its buildings, designed by the Teplobeton for Gigant in 1928, were repeated in variant by the same team of architects and engineers in other two sovkhoz designed in 1929 and 1930: the experimental-educational sovkhoz Verbljud in the Salsk steppes and Karabalyk in Kazakhstan (Eramishancev 1930, p. 13).

All these settlements assembled the same standard buildings flanked by the *Mashinno-traktornaya stantsiya* (MTS), with the mechanical repair workshop f and the logistic node with grain silos (the high-rise of the Sovkhoz), which were the engines of the production system replacing the traditional ones of the small and medium agricultural funds of the villages. The common residences services of the central settlement replaced the Slavic village form of the *obščina* presented in *Old and the New.*

The greatest part of the central blocks of the state grain sovkhoz central settlements were occupied by collective residential buildings, forming single complex with their green areas, facilities and cultural buildings facing a system of squares. The sovkhozes of Verbljud and Karabalyk included also a higher educational institution and student dorms. At Gigant was also built a lower level of educational institution Institut Agrotekhnikum, a vocational secondary school for farmers also providing training courses for tractor drivers (just like the "tractorist" of the film).

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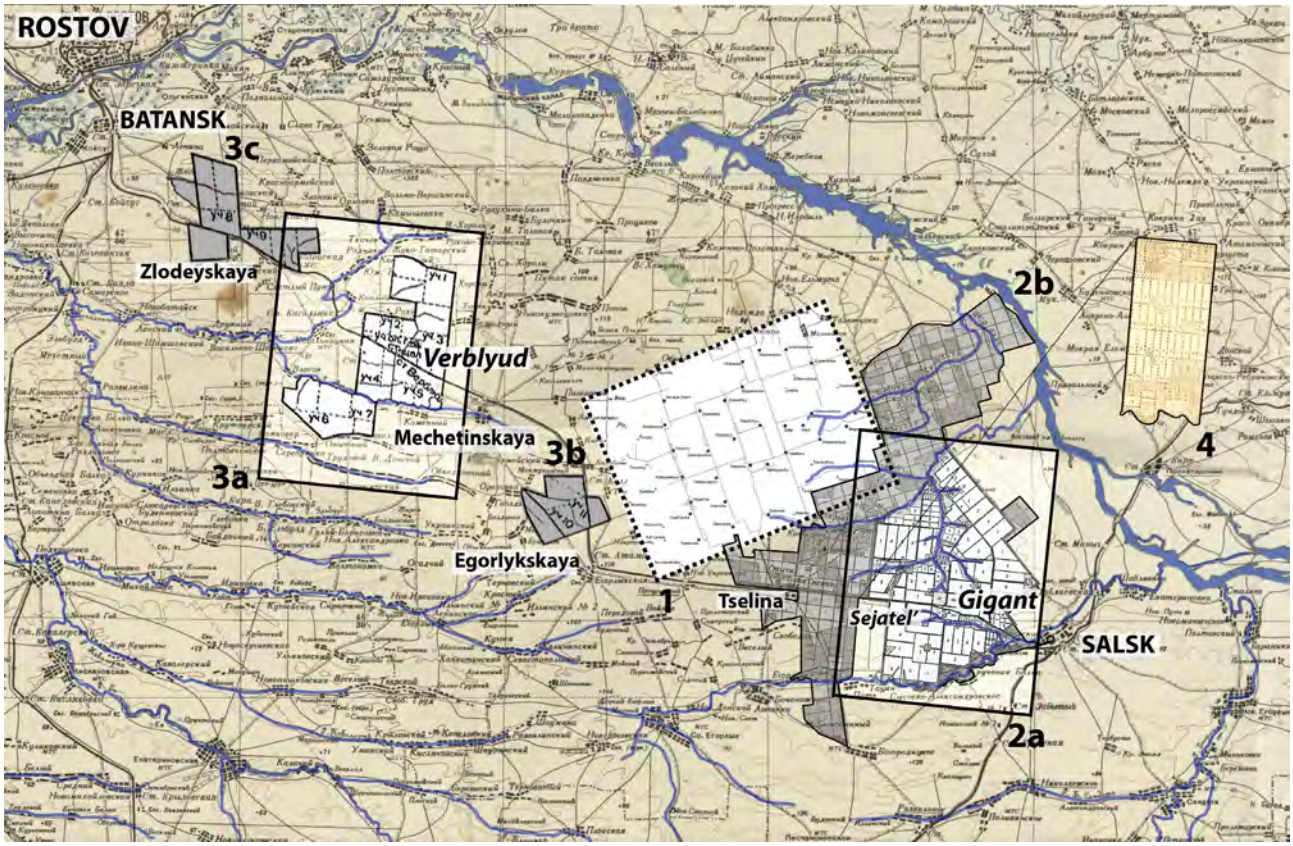

Fig. 3
Agrarian colonization of the Salsk steppe 1920-1934 (author's elaboration 2022).
1 – Land colonised by Molokan and Dukhobor refugees, 1922-23; 2a – Territory of sovkhoz Gigant in 1934-37 (48.671 ha.); 2b – Territory belonging to the Sovkhoz Gigant until 1934 (total extension 127.078 ha.); 3a – Territory of the Sovkhoz Verbljud (today Zernograd); 3b, 3c – Branch settlements territories of Sovkhoz Verbljud in 1929; 4 – Territory of Sejatel' commune, founded by Russian immigrants from USA in 1922, in the 1930's renamed kolkhoz Stalin. Map base *Zapad SSSR na karte RKKA* 1:50.000 (West USSR on the Map of the Red Army), 1938; sovkhoz, kolkhoz and colonization area of 1922-26 boundaries are extracted from publications (see text); the 3 rectangles shown in the map represent areas of 30x40 km.

Gigant – the large-scale production unit

Zernosovkhoz *Gigant*, established in 1928, originally stretched across 127.078 ha, with its central settlement at Tselina (Abrosimov and Koval', 1939: 6, 32-34).
The new central settlements built from 1929 to 1931 near Trubeckaya railway station (170 km from Rostov and 19 km from Salsk), later named Gigant, was equipped with a MTS including an initial allocation of 300 tractors. In 1934, the land was subdivided into three different sovkhozes, of which Gigant covered 48.671 ha. Initially, in 1929, the sovkhoz employed 771 permanent farmers and 1.600 seasonal workers from the surrounding communes, kolkhoz, and agricultural *artel'*, and organised training courses for 800 tractor drivers (Strumilin 1930).
The population of Gigant in 1938 amounted to 6,600 inhabitants of which 4.655 concentrated in the central settlement and the remaining 1945 lived in eight secondary settlements (*usadba otdeleniya*). These latter reproduced the traditional linear village with a population of nearly 200-220 inhabitants each, whereas the central nucleus was a workers' settlement (*rabochikh poselok*), including training students.
The 1928 scheme envisaged the central settlement made up of five parallel functional strips – logistics, production, facilities, housing and leisure – connected by three perpendicular axes starting from the two production units of the MTS. The two outermost axes extended southwards into two bridges across the river to reach the dairy plant and the southern portion of the sovkhoz. The central axis instead extended northwards across the railway into the Rostov-on-Don/Salsk road, which reached the logistic area of the railway yard including the grain silos[7].
The production sector (*proizvodstvennyj sector*) corresponded to the MTS, and included garages, repair workshop, fire brigade. Another diagonal axis stemmed from the passenger railway station, which, before reaching the cen-

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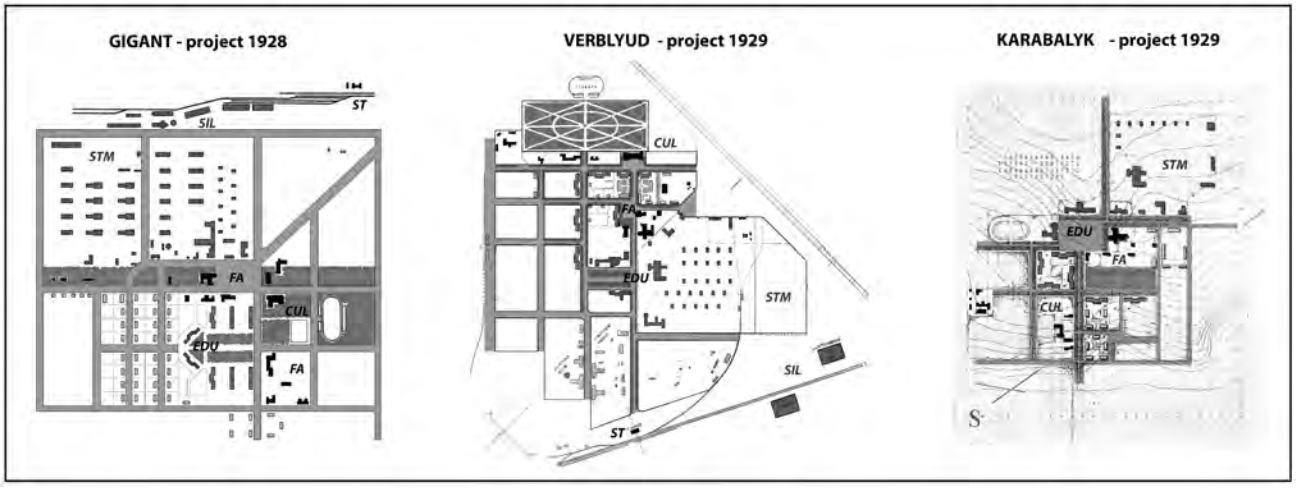

Fig. 4
The standard project for the central settlement (*central'naja usadba*) of the Experimental State Grain wovkhoz by Teplobeton, 1928-29 (author reconstruction, 2022).
Legend. EDU - education: Sovkhoz Gigant (expected population in the central "Agrotekhnikum" Institute settlement - 4000 inhab.) – Institute "Agrotekhnikum" - 100 students; Sovchoz "Verblyd" (expected population in the central settlement - 4000 inhab.) - "Institute of Engineers-Mechanics of Socialist Agriculture" - 1000 students; Sovchoz "Karabalyk" (Kazakhstan, expected population in the central settlement - 2000 inhab.) Institute "Agrotekhnikum" - 600 stud. CUL: Palace of Culture; Workers' Club, Park. FA - Services: 1st and 2nd level school; nursery, administrative centre of the State Farm; public canteen and factory-kitchen; sauna-laundry; cooperative shop; hospital. STM - tractor and agricultural machinery station: mechanical workshop; testing laboratory of tractors and towed machinery; garages for tractors, for combines, for seeders, for convoys; garage for cars and trucks. SIL - Silos: mechanized grain touching; supply stores. RES - Residential types: student hostels, houses with 2 and 3-bedroom apartments; single houses for 2 families; Cottage. ST – railway station.

tral square, aggregated all public buildings: Sovkhoz direction, kitchen factory (*Fabrika kukhnya*), department store (*Universal'nyy magazin*), school and workers' club. A green buffer zone separated productive from residential units, which also included some multi-storey communal buildings, terraces of single-storey houses of a traditional type, and the *Agrotekhnicum* student dorm designed by P.A. Golosov, and replicated in Verbljud. The embankments of the ponds near the dairy plant catalysed the resort area.

Verbljud – the "educational town" and its American experts

Against the same steppe background, Gigant and Verbljud central settlements had a rather different character. Sovkhoz Verbljud spanned over 50,000 ha: 30,000 near the central settlement at Verbljud railway Station and 20,000 corresponding to *Zlodeyskaya* and *Egorlykskaya* railway stations (Eramishancev, 1930: 12). Verbljud was established as an "Educational-experimental grain state farm" (*Uchebno – opytnyj zernosovkhoz*) in line with plans by the American agronomist and manager Harold Ware[8], enrolled in 1928 as a consultant of *Zernorest* to set up a network of scientifically managed farms in northern Caucasus and Kazakhstan. In his capacity of Verbljud Deputy Director of Production and Training, from 1929 to 1932, Ware invited American experts to work as adviser and trainers of Russian staff, or else as teachers in the first agricultural-engineering university in USSR, namely the Institute for mechanical engineers of socially-owned farms for 1000 students (*Institut inzhenerov-mekhanikov socialisticheskogo zemledeliya*)[9] established in Verbljud in 1930.
The presence of American experts materialised in the houses assigned to them: six cottages (Tokarev 2017, p. 45) designed as a kind of semi-detached Russian izba. Vasilij Eramishancev[10], who designed Verbljud along with other grain state farms, explained that Verbljud had a special character, not only due to its «rationally organized mechanized economy», but also because it provided cadres for standard state farms. These included tractor drivers, machine operators and mechanical engineers from the school of theoretical training, who knew all the processes of machine processing. State farms were implemented and managed in accordance with a broader program, thereby acting as cultural, training and scientific centres (Eramishancev 1930, p. 11).
The initial construction program of Verbljud foresaw 1,200 residents, an Institute for 200 students and an agro-technical laboratory. Courses for 500 students were launched as early as spring 1930, which, by the end of that year, were upgraded into a university training of 1.000 machine engineers

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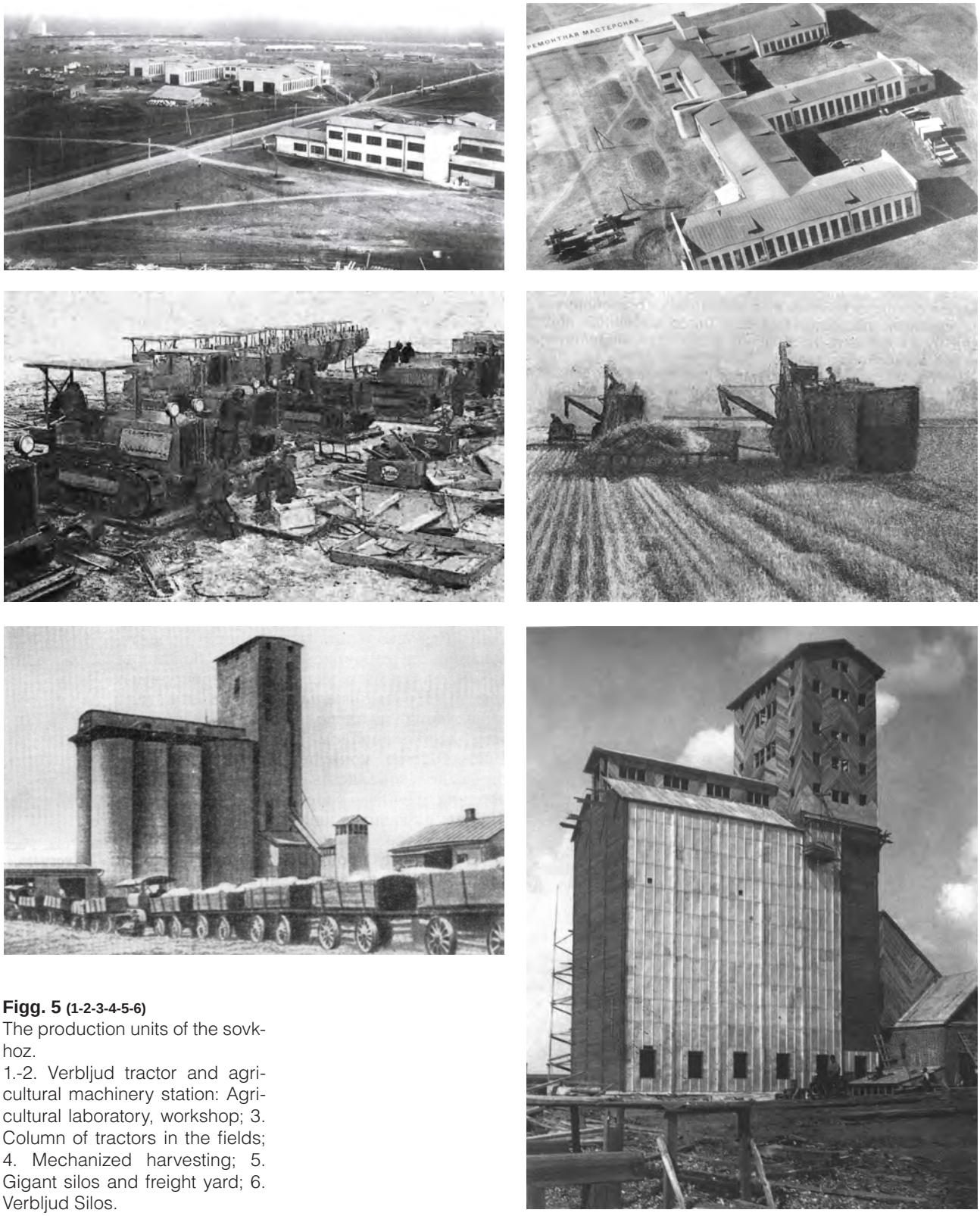

Figg. 5 **(1-2-3-4-5-6)**
The production units of the sovkhoz.
1.-2. Verbljud tractor and agricultural machinery station: Agricultural laboratory, workshop; 3. Column of tractors in the fields; 4. Mechanized harvesting; 5. Gigant silos and freight yard; 6. Verbljud Silos.

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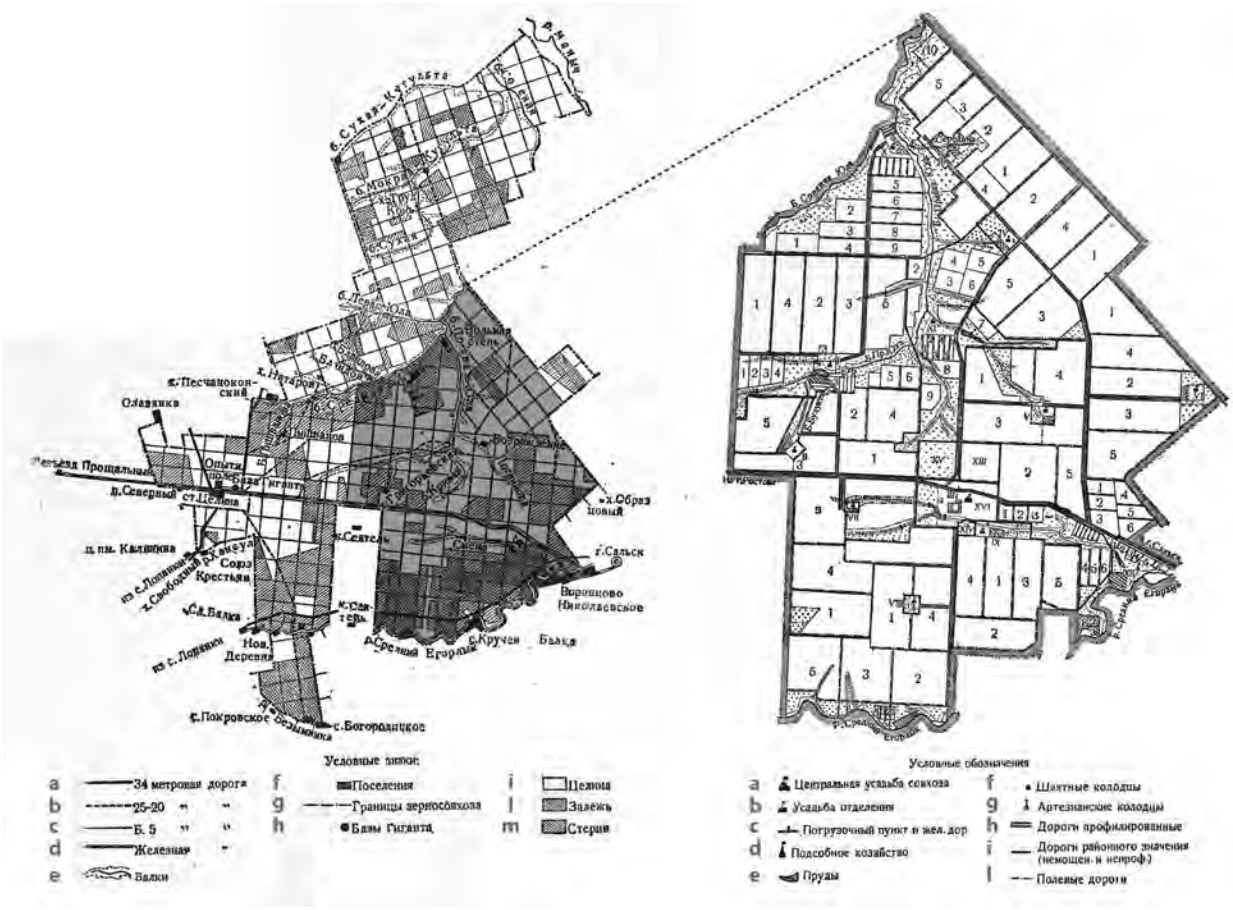

Fig. 6
Extension and territorial articulation of the sovkhoz Gigant, 1928-34.
On the left, area of the sovkhoz in 1928-1933, ha. 127.078: in dark tone the sector of the sovkhoz Gigant in 1934; a – 34-m. large road; b – 20/25-m. large road; c – 5-m. large road; d – railway; e – depressions; f – settlements; g – boundary of the sovkhoz; h – bases (tractor columns); i – terr. belonging to Tselina distr.; l - terr. belonging to Zalezh distr.; m – terr. belonging to Sternya distr.
On the right, farming organization of sovkhoz Gigant in 1934, ha. 48.671: a - Central sovkhoz farm; b - Farm branch; c - Loading point and railway; d - Ancillary activities; e – Ponds; f - Mine wells; g - Artesian wells; h - Profiled roads; i - Local roads (unpaved and not profiled); l - Fields roads. Source: Abrosimov and Koval' (1939).

of socialist agriculture. To meet these new requirements, the settlement expanded to 4.000 inhabitants (Eramishancev, 1930: 11) and in 1939 accommodated 8800 people.
The Plan of the "Central Settlement of Verbljud" materialised its "scientific" character along the axis stretching from the railway Station to the Park of Culture. This narrative sequence included the *Institute of mechanical engineers of socially owned farms* (equipped with a dedicated Laboratory, the Mechanical workshop of the MTS, and the sovkhoz Direction), the square of collective facilities (kitchen factory, club-school, and department store) and that of the Palace of Culture (with the Park of Culture encompassed by schools and hospital).
Unlike *Gigant* central settlement, the sectors of the town were not parallel to the railway but inclined of 45°, to optimize the buildings exposure to insolation and winds.
The Institute of mechanical engineers of socially owned farms and its laboratories differed from the rest due to strong constructivist character of their Architecture. In comparison with those of *Gigant*, the residential buildings of Verbljud, are more varied, responding to a more articulated social composition. In fact, they include a large student dorm, a small hostel for singles and small families, 2 and 3 rooms apartments and the cottages for guest experts.

Agrarian Constructivism

The two experimental *Zernosovkhoz* Gigant and Verbljud stood out from other rural settlements realised in the 1920s and 1930s due to their constructivist design, marking a clear break with traditional layouts and architecture made up of linear terraces and izbas.

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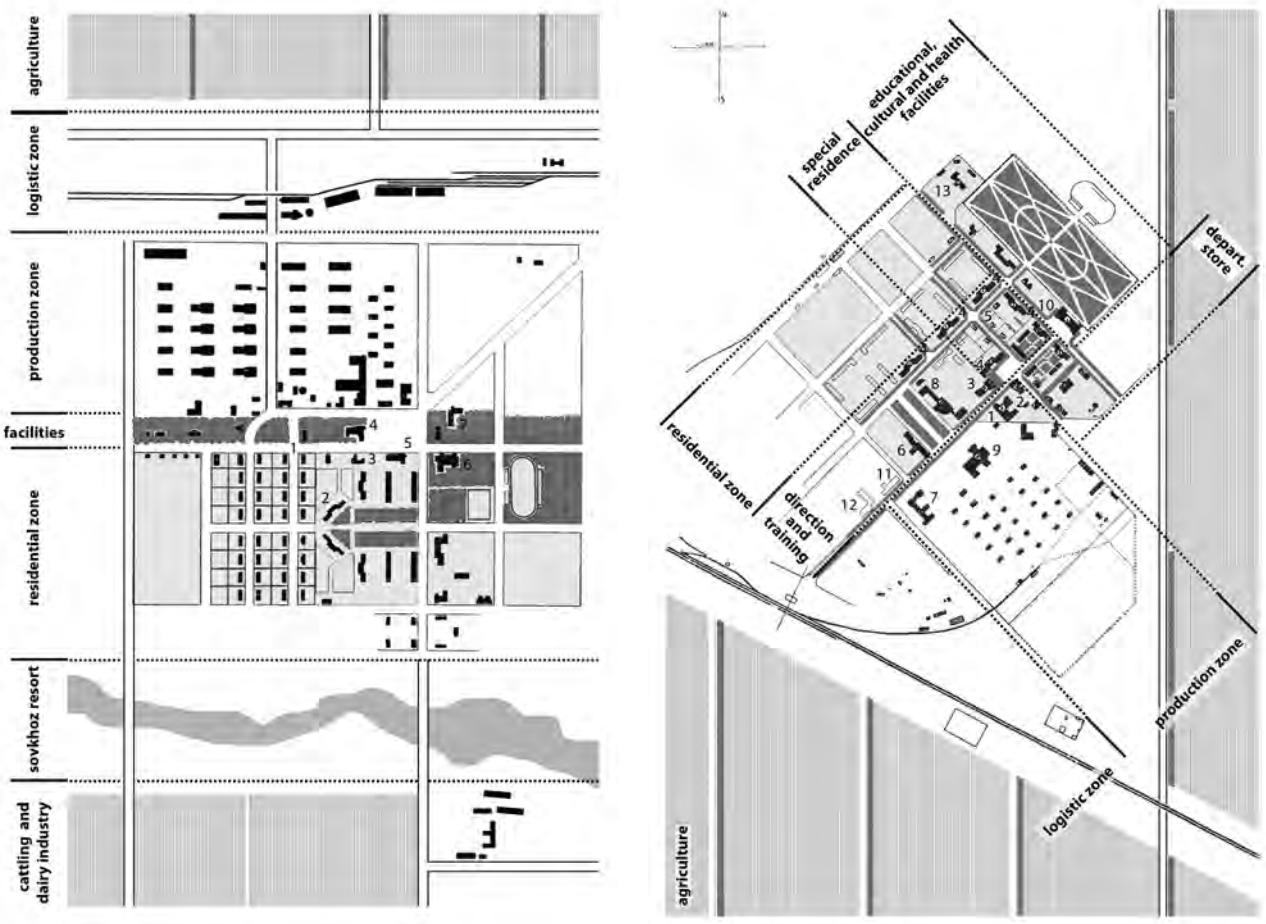

Fig. 7
Plan of the central settlement of Gigant and Verbljud, 1928-20. (author's reconstruction, 2022)
Gigant, originally planned by V. I. Eramishancev, P. A. Golosov, N. M. Vavirovskij, F. N. Andreev and A. M. Krylov, 1928-early 1930s.: 1 - residential area with terrace houses, 2 – Agrotekhnikum, 3 - Sovkhoz Direction, 4 - Communal kitchen, 5 - Department store, 6 - Worker's Club, 7 – School. (base map source: Baranov, 1975 : 138)
Verbljud, Originally planned by V. I. Eramishancev, P. A. Golosov, N. M. Vavirovskij, F. N. Andreev, A. M. Krylov, 1929- early1930s: 1 – Communal Kitchen, 2 – Department Store, 3 – Club-school, 4 – Hostel-house for students, 5 – Cottages for foreign experts, 6 – Agro-technical laboratory, 7 – Repair Shop, 8 - Institute of socially-owned farms' mechanical engineers, 9 – Mechanical Laboratory, 10 – Cinema-theatre, 11 - Sovkhoz Direction; 12 – Hotel. (base map source: Eramishancev 1930, p. 13; Baranov 1975, p. 140; Bylinkin et al. 1985, p. 78)

Yet, the central settlement diluted constructivist architecture into traditional elements and building types. The school, the department store, the workers' club and the dorm in Gigant resemble other buildings of the same type built in the industrial towns of URSS during the first Five Years Plan. The residential units instead were a simplified version of the houses found in linear Slavic villages.
The dorm and the other collective apartment buildings designed by P.A. Golosov at Gigant and Verbljud featured the same volumetric composition enhanced by flat roofs with bower, just like the contemporary designs by Ilya Golosov for the industrial city of Ivanovo-Voznesensk in central Russia. During the implementation, however, pitched roofs replaced flat roofs. Facing this "domestication of form" P. A. Golosov elaborated a color plan of the facades that exalted their abstract and constructivist composition.
The adoption of pitched roofs, so common in Russian rural architecture, in the constructivist sovkhoz buildings was probably coping with the need to differentiate industrialised agricultural settlements from industrial towns.
The founding settlements of Gigant and Verbljud in 1928-29 were a real laboratory during the making of the First Five-Year Plan.
The theoretical debate on the socialist city began at the beginning of 1929 (Ceccarelli 1970) while the Five-Year Plan, as Eisenstein observed while concluding the filming of *Old and New*, was already producing a radical transformation of the territorial and urban planning with the two sovkhozes of the Salsk steppes now under construction. The two sovkhozes were thus able to offer a concrete example for the elaboration of theoretical models of socialist cities[11].

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Figg. 8 (1-2-3-4-5-6)
Architecture of the facilities buildings and educational system of the sovkhoz Gigant and Verbljud, 1929-31.
1. Club-school (left), of the factory-kitchen and canteen (right) of Verbljud with the communal housing for students in the background; 2. Gigant shopping centre; 3. Gigant Workers' Club; Gigant Primary and Middle School; 5. Complex of the "Institute of Mechanical Engineers of Socialist Agriculture" in Verbljud, 6. Dormitory for students and cottages for foreign lecturers in Verbljud.

4. The landscape transformation of the urban workers' terminal of mechanized agricultural production of the First Five-Year Plan.

Countryside reorganization with sovkhoz and kolkhoz systems from the First Five-Year Plan, with the mechanization of agriculture and the production of a surplus of agricultural products to feed a growing urban working population,[12] also changed the organization of the distribution of food products in the cities comparing with the years of the NEP. During the initial years of the First Five-Year Plan, still in a frame of experimentation with building types that were to characterize the socialist city, two new types were developed in the agri-food sector: the kitchen-factory and the bread factory, the latter in a radically reformed version compared to the past (Fisenko, Volchok 2018).

The model working-class district of the socialist city is illustrated in a propaganda manifesto by Aleksandr A. Deyneka entitled *Let's transform Moscow into the socialist model city of the proletarian state* of 1931. The slogan divides the space into three sectors: the area of production, the residential area, and the area of consumption, linked by the transport network. The residential part illustrates an animated scene of the residential complexes gathered around the green space with the services.

The "socialist facilities" are set in the green park surrounded by buildings for culture, like workers' club and the school, enclosed by the large complex of the factory-kitchen in the background. The complex of Stachek Square in Leningrad in the Kirovsky district (Kirikov and Shtiglic, 2008) is among the different examples of this type of socialist civic center, one of the most accomplished of the time is; in this discrict were located the famous Putilovsky plant producing the tractors of the final scene of *Old and New*.

Around the square, were the Gorky Palace of Culture and the adjoining building of the House of Technical Studies, (Kirikov and Štiglic 2008, pp. 94-103) on one side and the House of Cooperation on the opposite one. The latter includes a kitchen factory capable of distributing 84,000 meals a day, to which is attached a shopping center (*universal'nij magazin*), cafes, and restaurants[13].

The large complex had the most sophisticated mechanical systems at that time for meal production and distribution.

The other protagonist of the new form of food distribution was the large bread factory, the most important example of which were the factories built with the "system" of engineer G. L. Marsakov, constituted by a compact cylindrical organism that uses ring conveyor belts for the different stages of production, distributed on different levels connected by belts and elevators.

Five plants were built in Moscow and two in Leningrad following the "Marsakov system". According to size they were able to produce from 30-60-100 and up to 180 tons of bread per day.

Marsakov also designed a kitchen-factory based on the same system as circular conveyor belts.

Compared to the bread factory project of 1926, inaugurating the sequence of this type of plant, the mill, and the silos are now ideally located in sovkhoz agro-industrial complex. In this new context, the vertical landmark of the silo has disappeared appearing otherwise as a distinctive landmark of the reformed agrarian landscape. The other element that disappeared from the urban landscape is the wholesale market replaced by complexes of the type of the Leningrad House of Cooperation.

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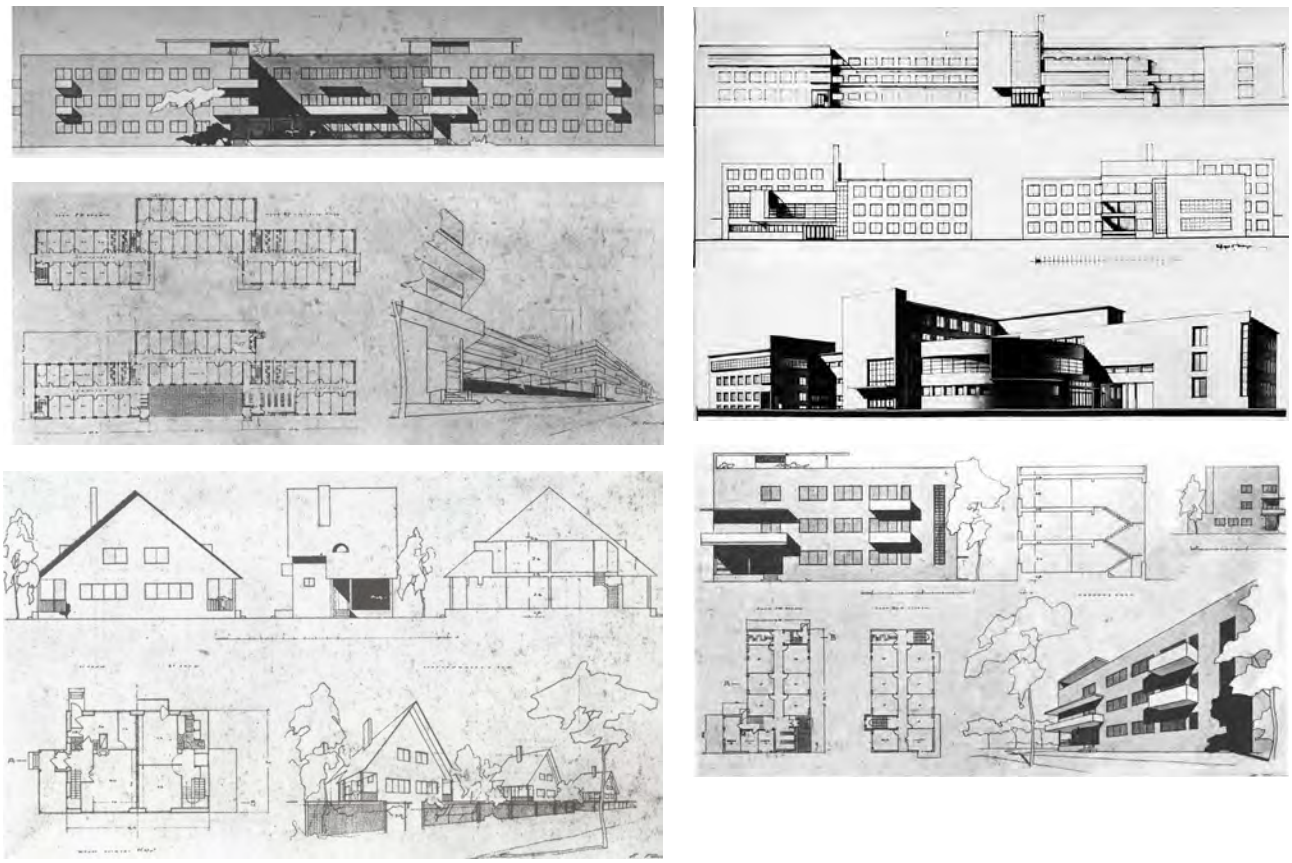

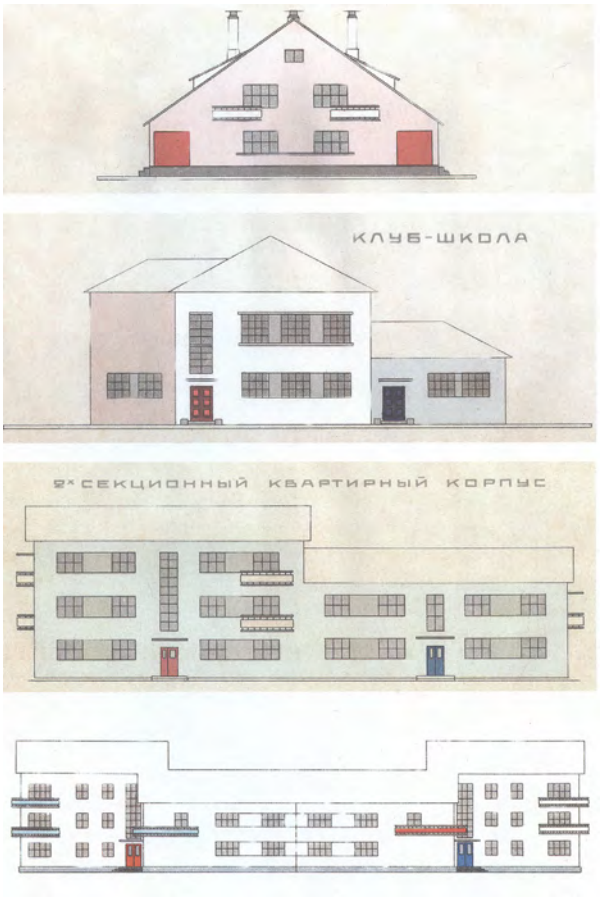

Figg. 9 (1-2-3-4-5)
Agrarian constructivism. Projects of the company Teplobeton» for Gigant and Verbljud, 1929.
1.,2.,4. P.A. Golosov, Dormitory for students, cottage for foreign teachers, residence of studios for Verbljud, 1929; 3. N. M. Vavirovsky, complex of the Institute of Mechanical Engineers of Socialist Agriculture in Verbiud, 1929; 5. P. A. Golosov, Color plan for the foreign teacher's cottages, the club-school, the apartment building and the Verbljud student dormitory, 1929.

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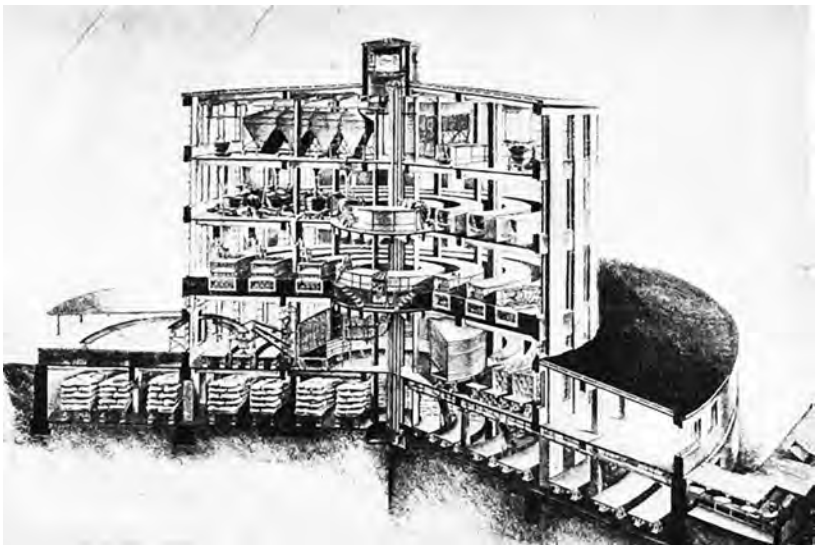
Figg. 10 (1-2-3-4-5)
Food distribution devices in the socialist city of the First Five-Year Plan, 1929-31
1. A. A. Dejneka, Propaganda Manifesto of the First Five-Year Plan *Transforming Moscow into the Socialist Model City of the Proletarian State*, 1931; 2.-4. A. K. Barutčev, I. A. Gil'ter, I. A. Meerzon and Ja. O. Rubančik, House of Cooperation including the factory-kitchen in the Kirovsky district of Leningrad, 1929-31: bird's eye view, mechanized kitchens and canteen; 5. G. L. Marsakov, Factory-kitchen project with mechanized distribution of meals, 30s; 6.-8. G. L. Marsakov, Bread Factory No. 11 (1937), Bread Factory No. 5 (1931) and scheme of operation of the bread factory plant with the "Marsakov system" (1930).



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Concluding note

In presenting these projects as a whole, as an architectural section between city and countryside in the USSR of the 1920s and 1930s, we tried to highlight the extremes of architectural research that imagined, on the one hand, the construction of an articulated system with typological specifications identified at all scales, and on the other tried to picture a specific expressive of modern rural architecture.

After 1933, with the Socialist realism in art and architecture, the avant-garde project for the socialist countryside and for the socialist city in the USSR, had been forcibly abandoned.

At this juncture, reinterpretation, and reproduction (in the worst case), of the Slavic village's traditional models of architecture became the only admitted research address in the countryside.

This phenomenon is evident in the soviet literature dedicated to countryside architecture from the late 1930s until the Khrushchev Thaw.

In this context, the ideal architectural section that linked the city and countryside in the avant-garde project was divided into two different sheets: "vernacular" became the term epitomising countryside architecture, and "engineering" the term epitomising the urban food distribution facilities.

Notes

[1] A Russian production of the Fordson model (Cohen 2020).

[2] The *Komsomol* was the Soviet communist youth organization.

[3] The two architects built in 1929 the famous building of the Moscow Planetarium among the icons of architectural constructivism.

[4] In the Soviet system, food products were collected in warehouses (*ovashchaya basa*) that provided for distribution to state food stores. The Balotny Market was partly transformed into a park, and in the area of the Spirits Market was built the House on the Riverfront, the large residential complex intended for the cadres of the Soviet state, built by B. Iofan in 1929-31.

[5] *Zernotrest* (State Association of Soviet Grain Farms) existed from 1928 to 1931.

[6] Pantelemon Aleksandrovich Golosov (1882 – 1945), brother of better-known Ilya, also OSA member.

7 The actual settlement differs in the disposition of collective residential buildings.

[8] An agronomist and member of the USA Communist Party, in the early 1920s Harold M. Ware (1889–1935) worked in the Soviet Union, in Perm in the Urals. In 1926-1928, he organized the *Russian Reconstruction Farms*, a joint Soviet-American venture supporting training and experimental farms. Ware was also plenipotentiary representative in the USSR of major American producers of agricultural machinery. Moving back to USA in 1932, Ware became a Soviet agent but died in a car accident in 1935 (Carr and Davis,1969; Harris 1986; Fitzgerald 2003; Nikulin 2010).

[9] Today «Azov-Black Sea State Agro-engineering Academy of Sciences» (Taranov and Zaydiner, 2012: 7).

[10] In 1927, Vasilij I. Eramishancev (1875-1958), worked in the Supreme Council of the National Economy and was engaged in the design of workers' settlements for *Zernotrest* in North Caucasus and Kazakstan. See: Kazus' 2009, p. 189, 488; Eramishancev 1929, pp. 782-785; Eramishancev 1930, pp. 11-13.

[11] We have developed a detailed reconstruction on this aspect in a contribution in printing progress entitled "Old and New. Delving into the origins of collectivization" (Meriggi 2022).

[12] The model of economic development set by the Five-Year Planning aimed, as well known, to accelerate the industrialization of the country. In general, the strengthening of agricultural production was functional to produce a surplus of foodstuffs intended to feed the working population in the industrial cities, composed of former peasants released from rural work thanks to mechanization. See Baransky 1956.
[13] By A. K. Barutčev, I. A. Gil'ter, I. A. Meerzon and Ja. O. Rubančik, of 1929-1931, authors in the same years of other factories-kitchen in the main working-class neighborhoods of Leningrad. See: iidem, 1933; Kirikov and Štiglic 2008, pp. 104-108.

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