

Constructivism Reconstructed

This work attempts to read the movement of constructivism in Russian avant-garde architecture by the separation of its constituting components. Being a product of numerous superimposed influences, constructivism is often presented as an architectural style which is dominated by a set of strong graphical instruments. In order to go beyond the techniques of representation, the architectural identities of constructivism will be studied using the following methods: a visual essay and a written work. The visual essay is a collection of projects that are classified in a very subjective way, showing similarities of formal language. The projects are grouped by the resemblance of either form or style, but since a project could be in possession of several stylistic or formal ideas, its belonging to a group could be discussed. Based on the research of the visual essay the written part analyses five components of constructivism: artistic influence, structural approach, formal symbolism, functional proposal and spatial strategies. The two parts are complementary, showing the broad scope of the subject.

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Enoncé Théorique de Master en Architecture

Groupe de suivi: Kersten Geers, Nicola Braghieri, Andrea Zanderigo
EPFL 2015

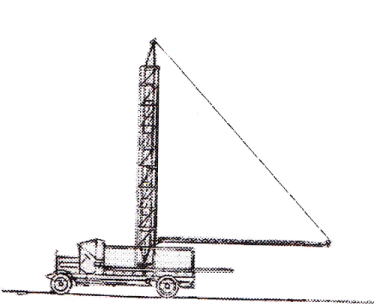
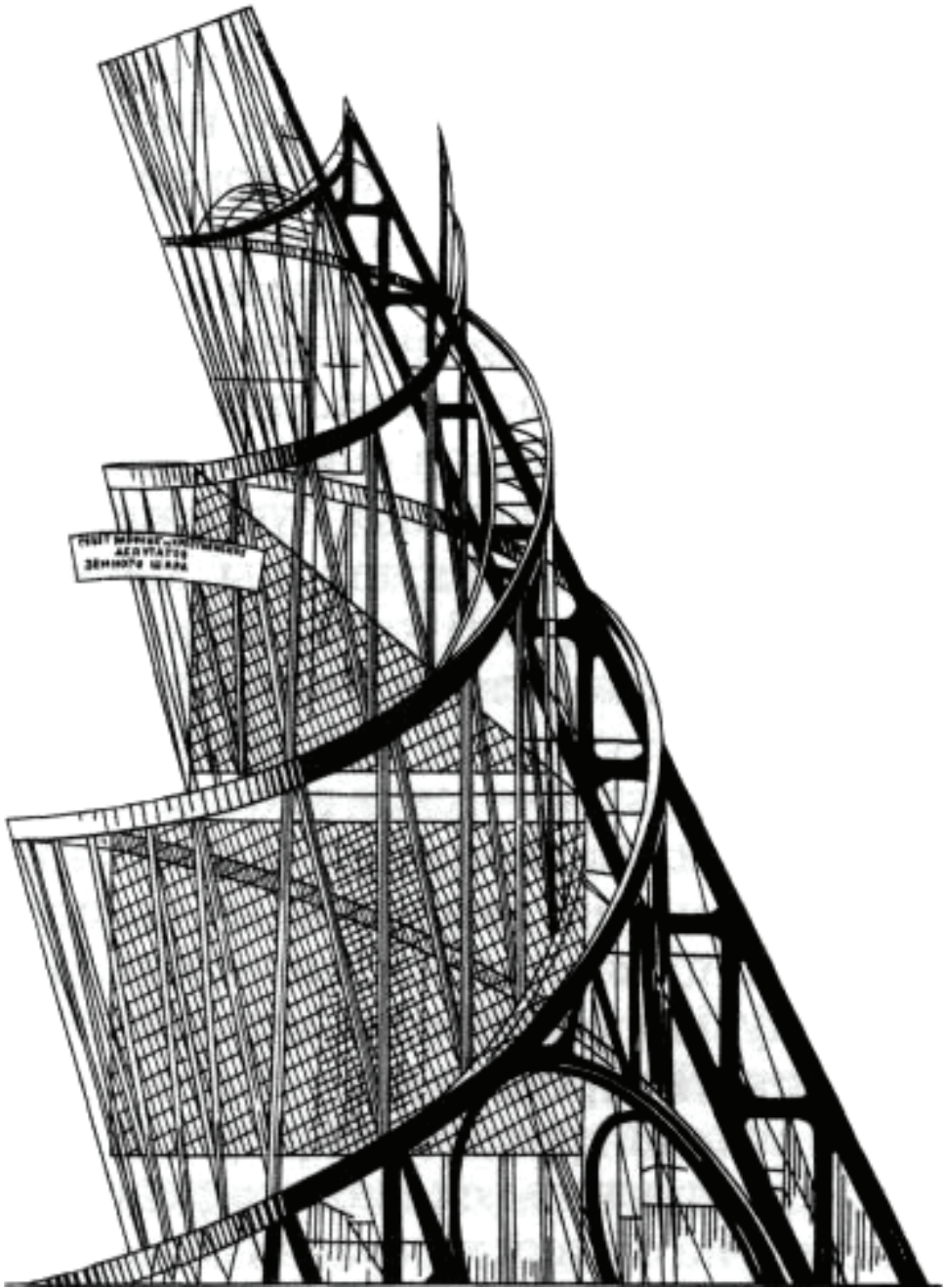
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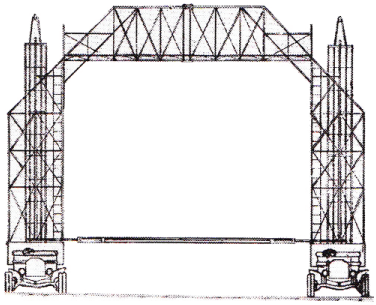
Part 1

The visual essay

V. Tatlin. Monument to the III International. Leningrad. 1919



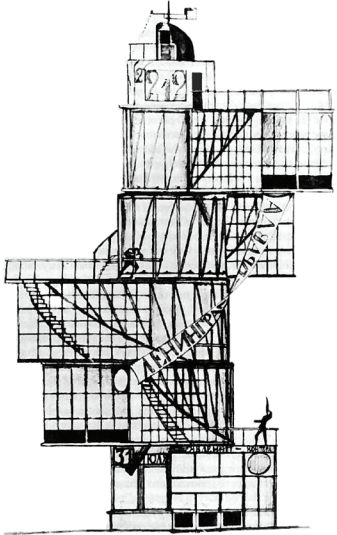
A. Babichev. Auto-agit-theater
Project. 1922



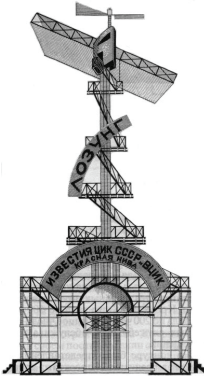
A. Babichev. Auto-agit-theater
Project. 1922



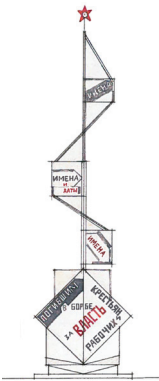
A. Rodchenko. Hanging construction
1920



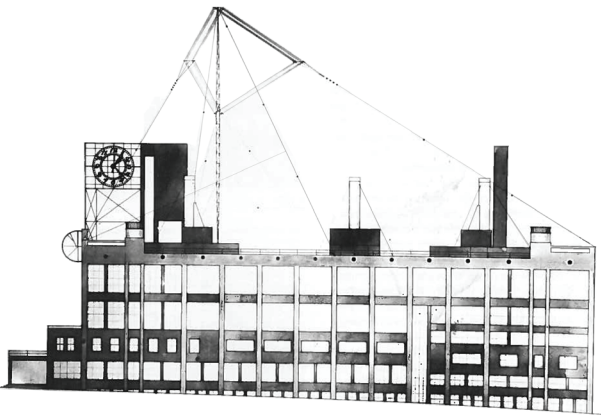
K. Melnikov. Leningradskaya Pravda
Moscow. 1924



B. Gladkov. Izvestia Pavilion
Moscow. 1923



V. Krinskij. Sketch of a monumnet
1919

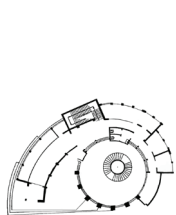
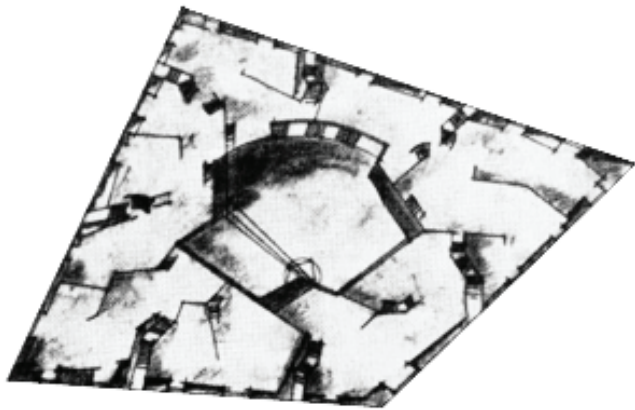
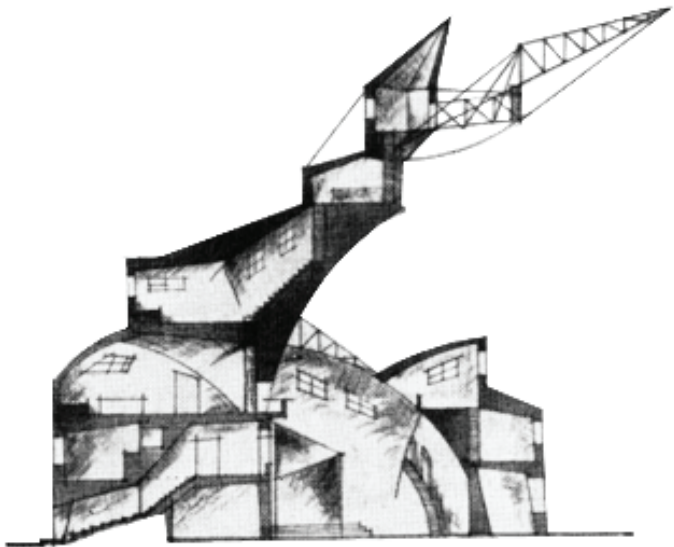


A. and L. Vesnin. Telegraph
Moscow. 1925

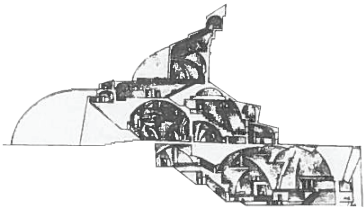


A. and L. Vesnin. Future city
1925

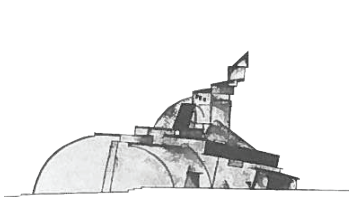
N. Ladovskij. Experimental project for a communal house. 1920



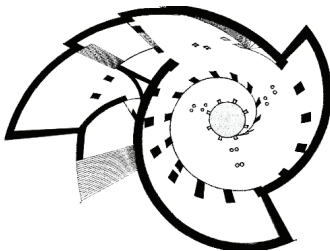
Sivortsov. Pavillion of Commerial Representation
1928



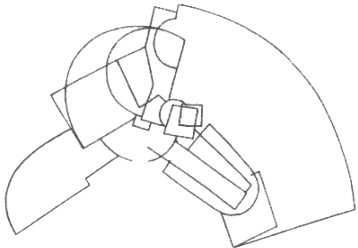
Shevchenko. House of Soviets
1920



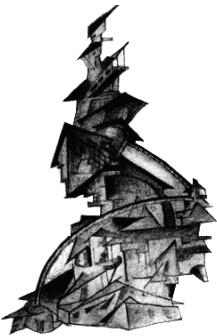
Shevchenko. House of Soviets
1920



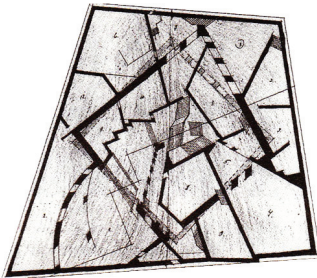
V. Balikhin. Project of a library
1921



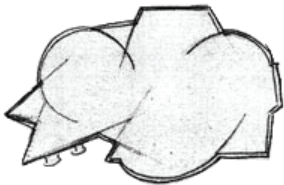
Shevchenko. House of Soviets
1920



G. Malu. Experimental project of a communal house
1920



S. Mochalov. Project of a library.
1921

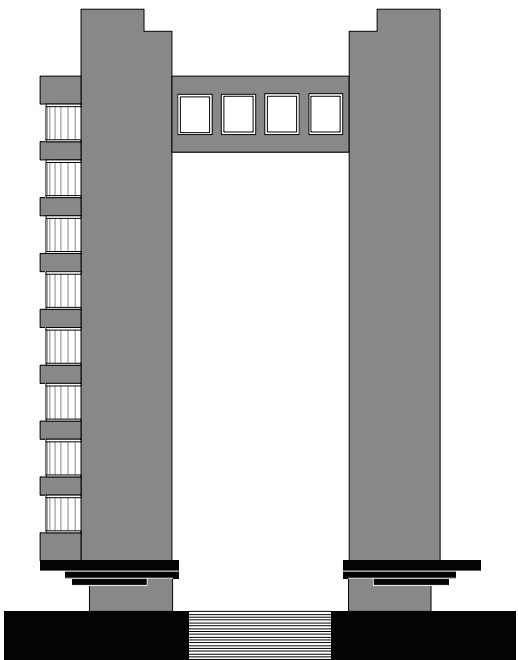
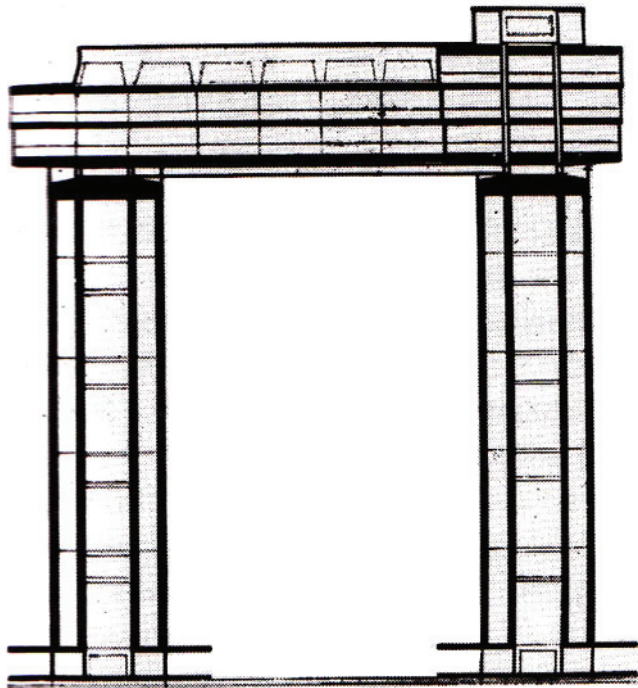


B. Korolev. Eperimental architectural projects
1919

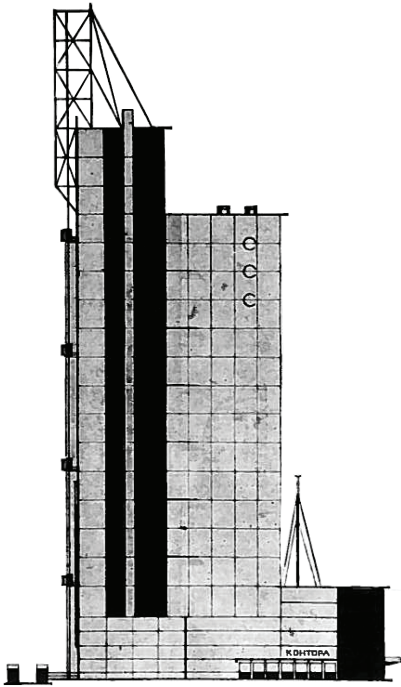
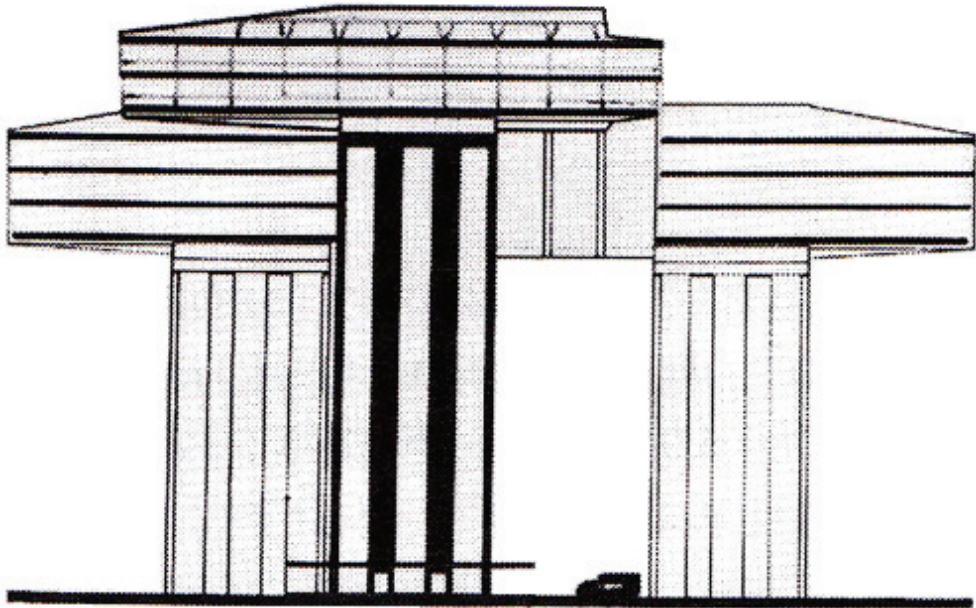


G. Malu. Experimental project of a communal house
1920

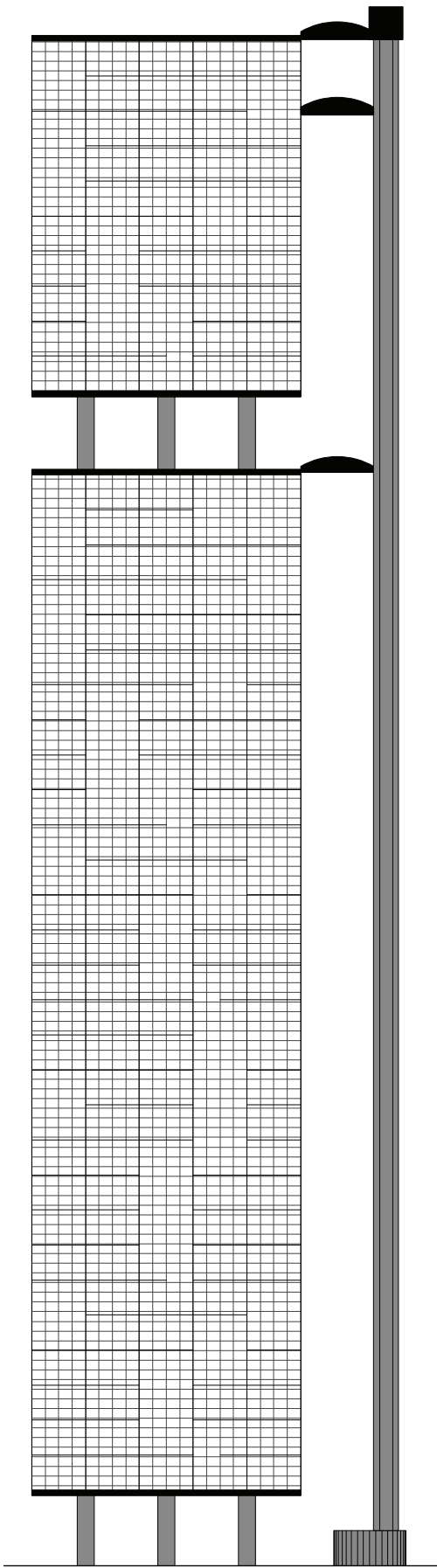
L. Lissitzkij. Horizontal skyscrapers. Moscow. 1923



Merzon. Mausoleum as a monument
1927

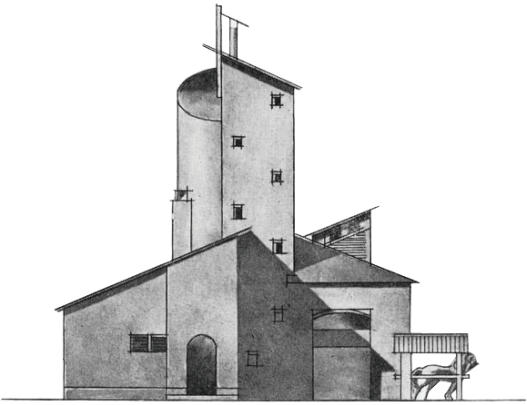
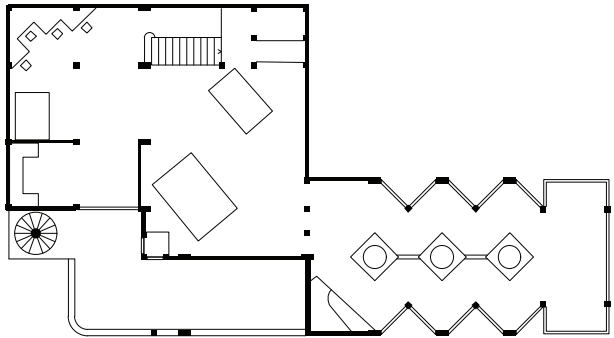
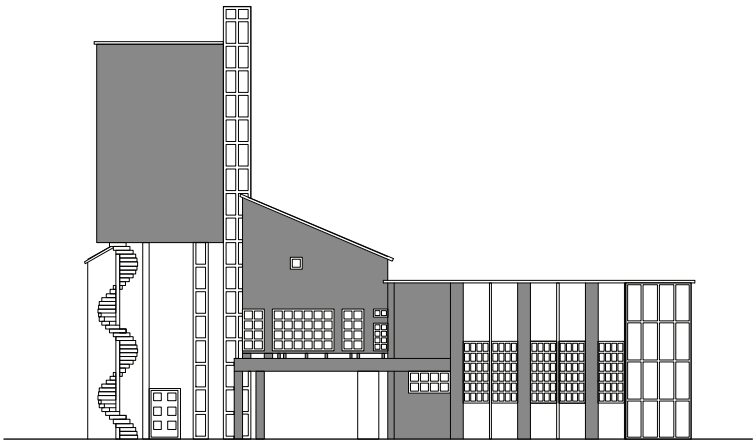


I. Leonidov. Project for a typography of "Izvestiya"
Moscow. 1926

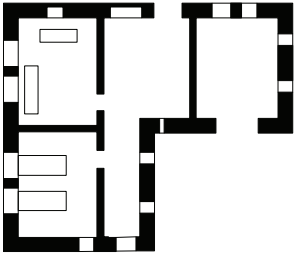


I. Leonidov. House of Industry
1929

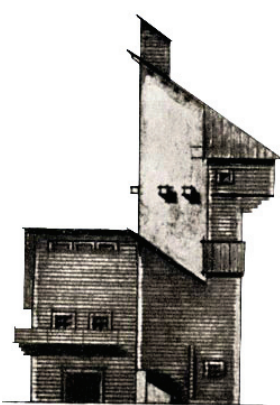
K. Melnikov. Mahorka Pavilion. Moscow. 1923



I. Golosov. Forge.
1921



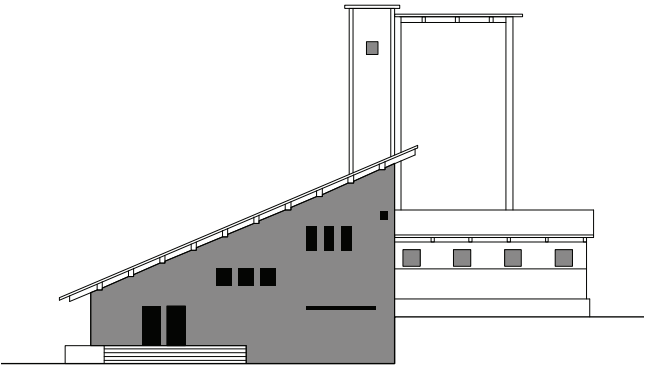
I. Golosov. Forge.
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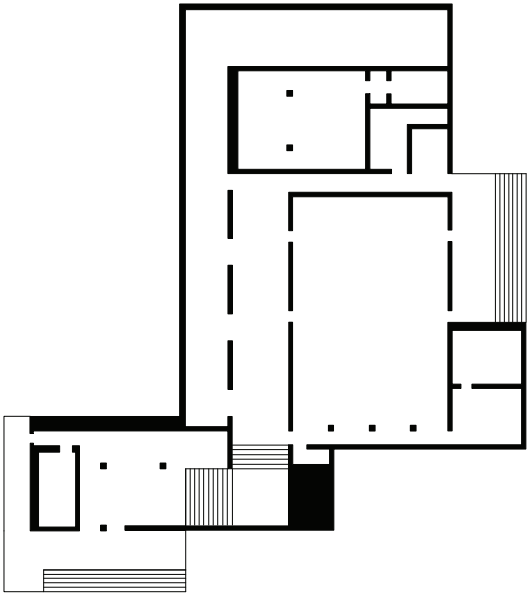
I. Golosov. Horse-breeding
Moscow. 1922



I. Golosov. Horse-breeding
Moscow. 1922

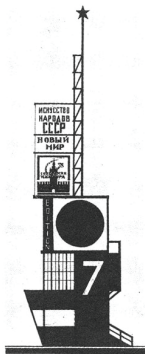
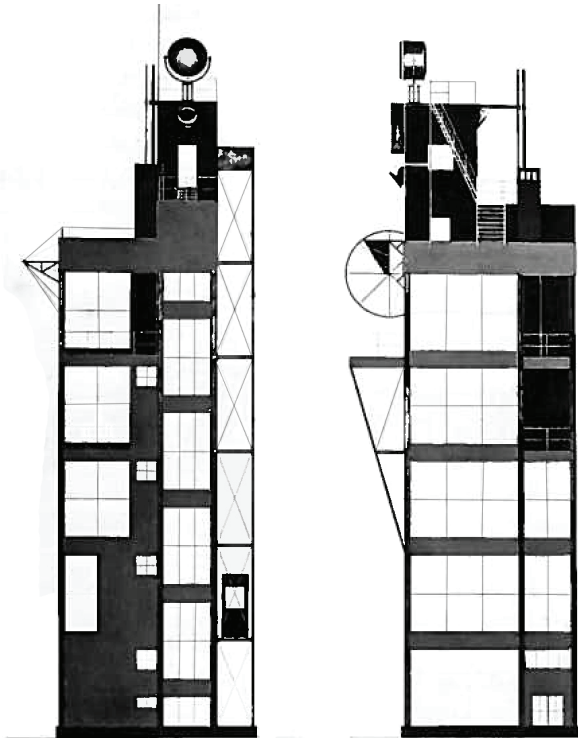


I. Trofimov. Project of a Reading-hut
1932

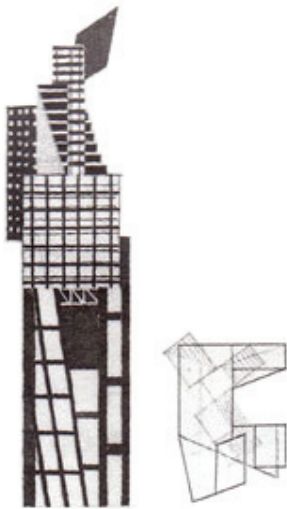


I. Trofimov. Project of a Reading-hut
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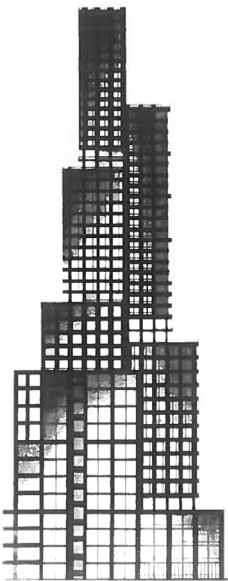
A. Vesnin. Leningradskaja Pravda 1924. Moscow



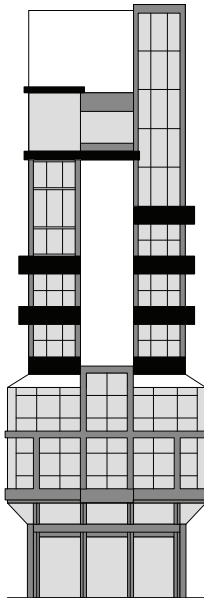
V. Krinskij. Project of a kiosk-tribune
1925



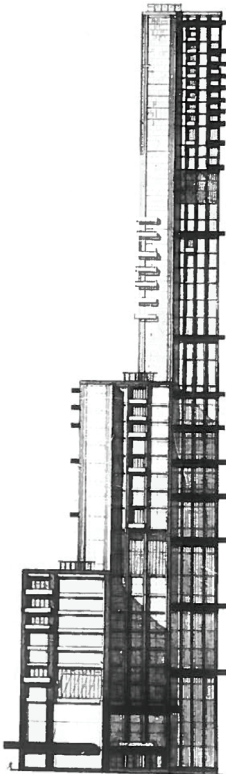
V. Krinskij. Experimental project of a skyscraper
1922



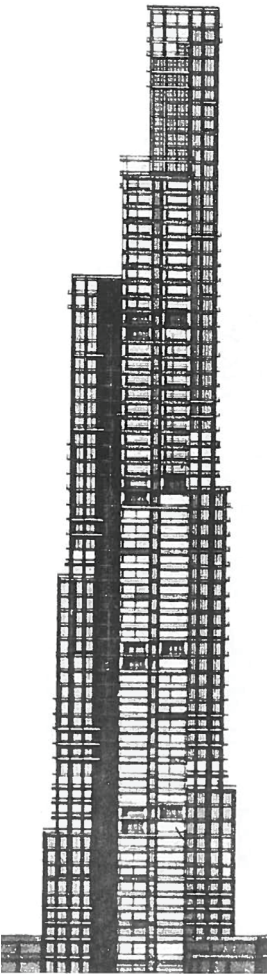
V. Lavrov. Exercise on dynamics, rhythm
and proportion on a vertical axis. 1924



L. Rudnev. Future city
1927

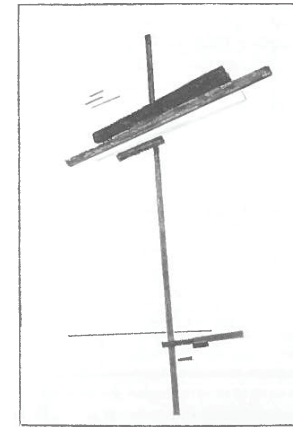
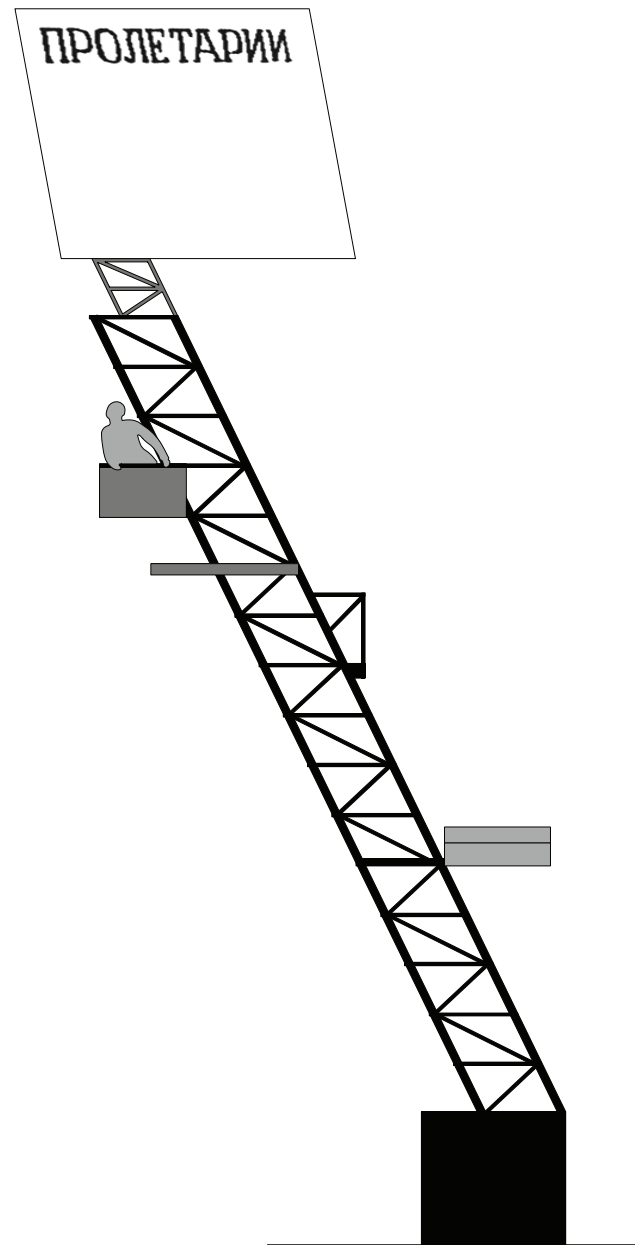


I. Iozefovitch. Exercise on dynamics, rhythm
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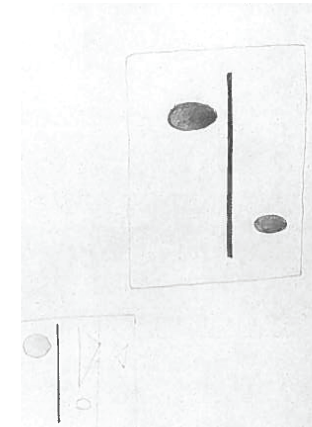


I. Volodko. Exercise on dynamics, rhythm
and proportion on a vertical axis. 1924

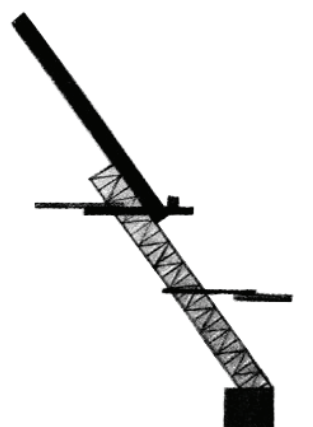
L. Lissitzkij. Lenin's Tribune. 1924



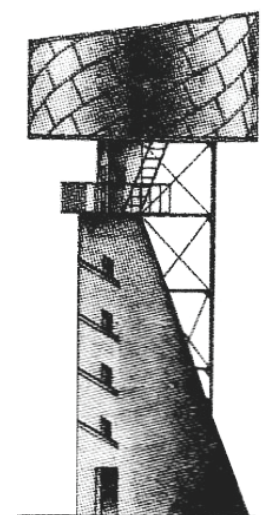
K. Malevich. Magnetic composition of architectonic type
1920



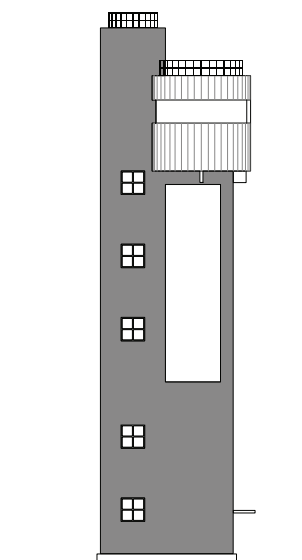
K. Malevich. Two oval forms and plan in extension
1916



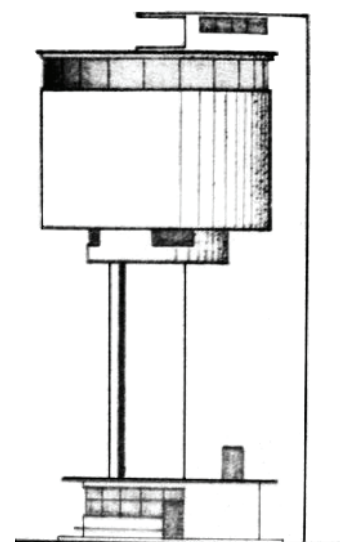
Chashnik. Tribune project
1920



V. Petrov. Water tower
1921

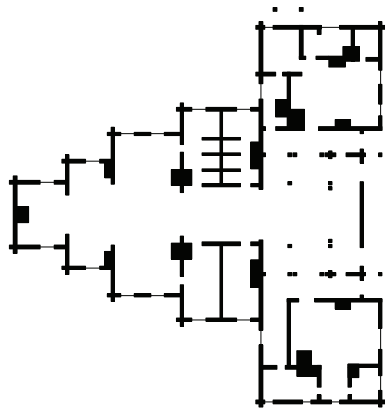
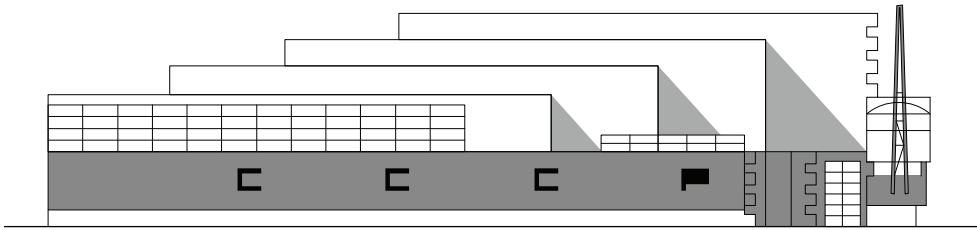
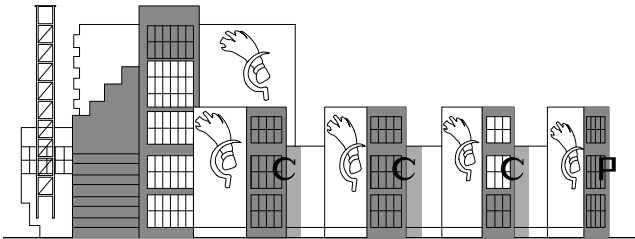


I. Chernikhov. Water tower.
Leningrad. 1931

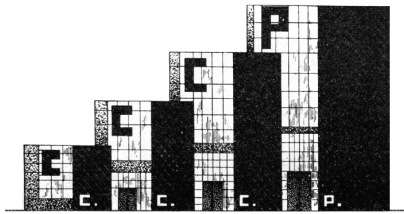


Reisher. Water tower
1928

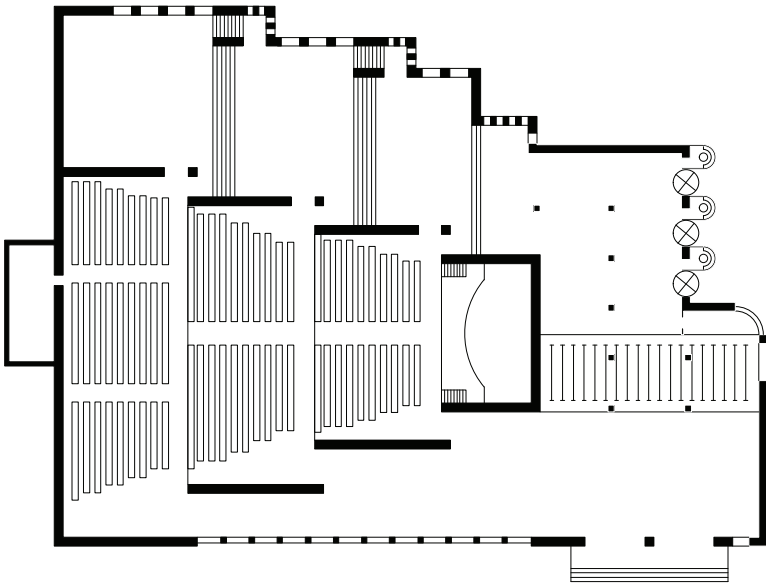
I. Golosov. USSR Pavilion. Paris, France. 1925



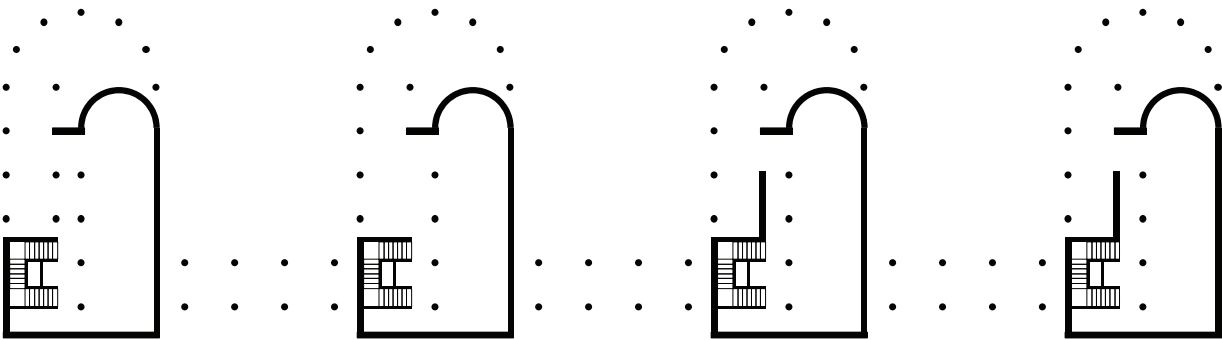
A. Nikolskij. Project of a volost sovjet
1921



N. Ladovskij. USSR Pavilion
Paris, France. 1925

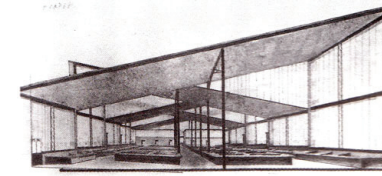
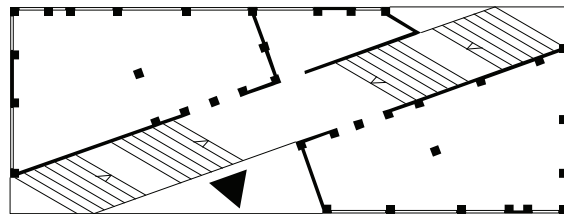
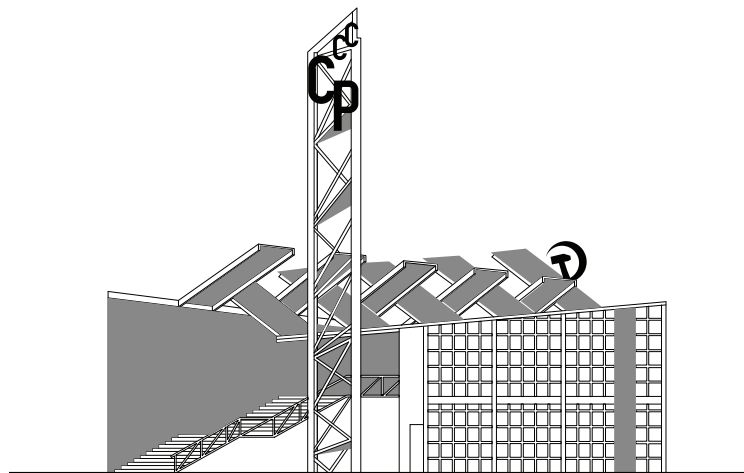


N. Ladovskij Studio. Project of a cinema
1932

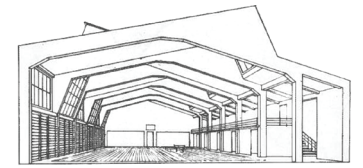


L. Lissitzkij. Project of a Pravda Complex
1930

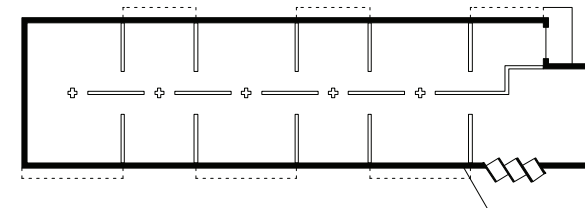
K.Melnikov. USSR Pavilion. Paris, France. 1925



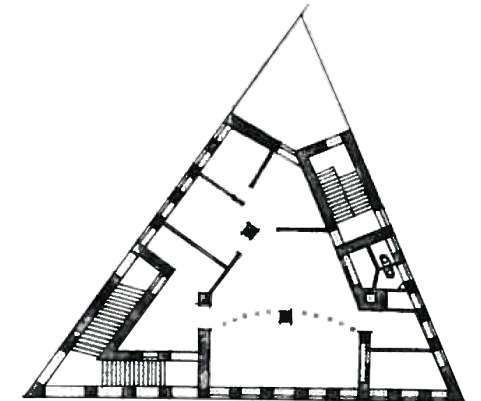
I. Volodko. Project of a covered market
1923



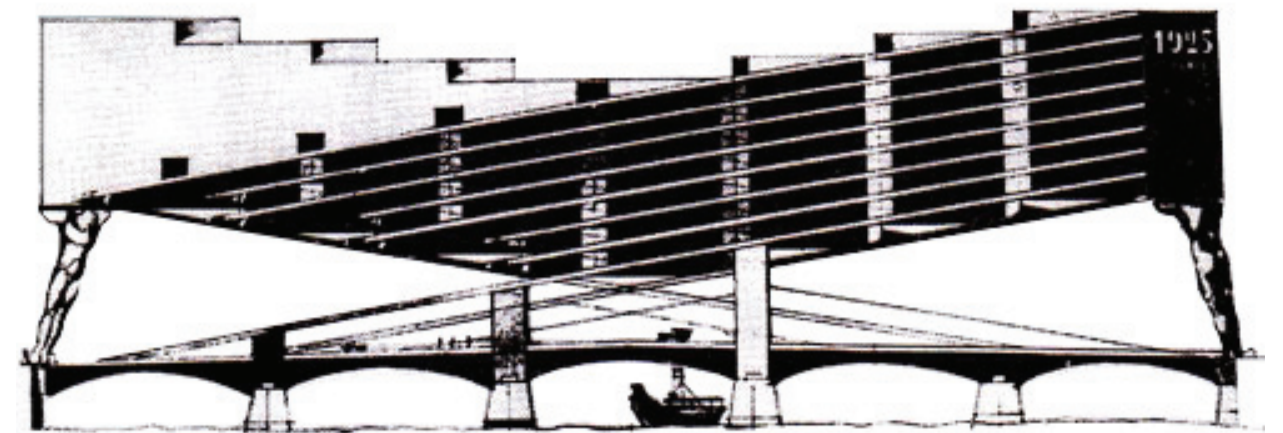
Lamson, V. Petrov. Sports club
1928



I. Volodko. Competition for the USSR Pavilion of torgpredstvo
France. 1929

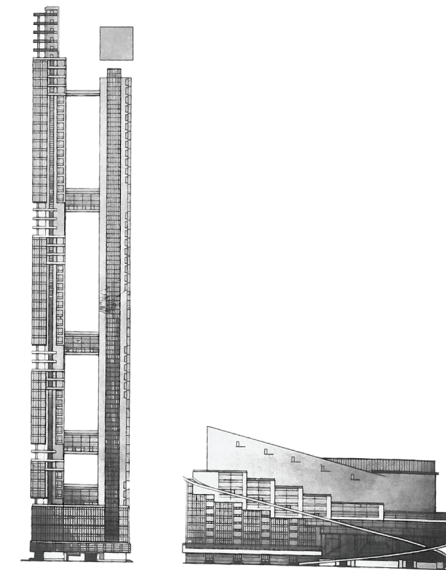
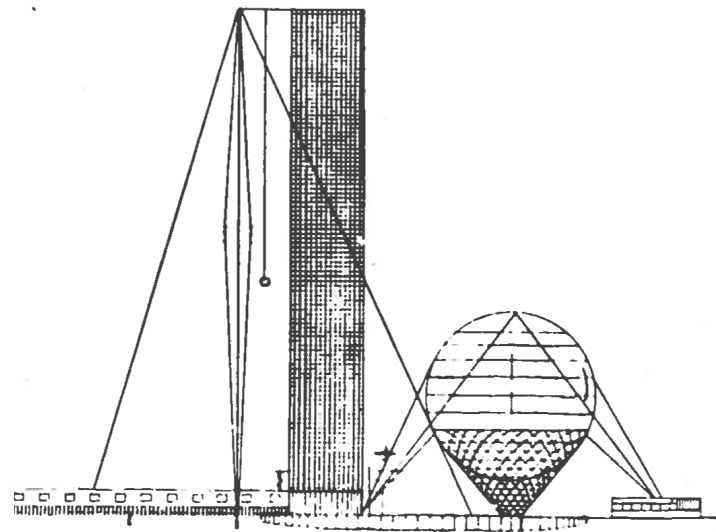


K. Melnikov. Administration building Sukharevka market
Moscow. 1924

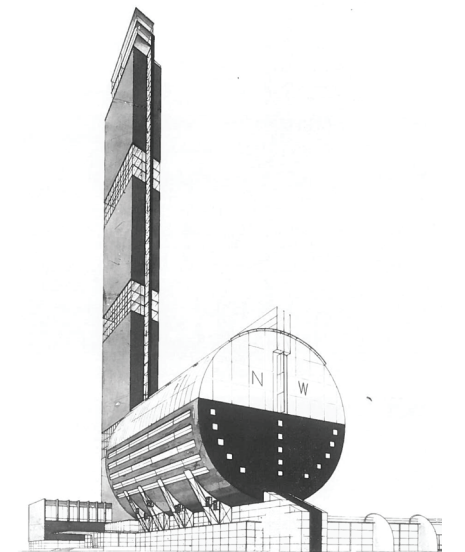


K. Melnikov. Garage-parking
Paris, France. 1925

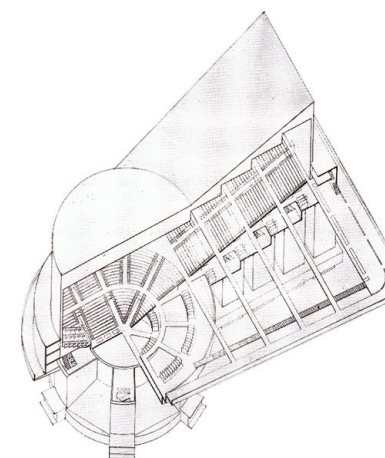
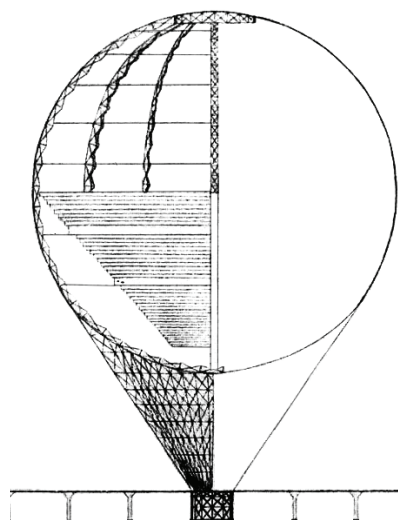
I. Leonidov. Lenin Hills Institute. Moscow. 1927



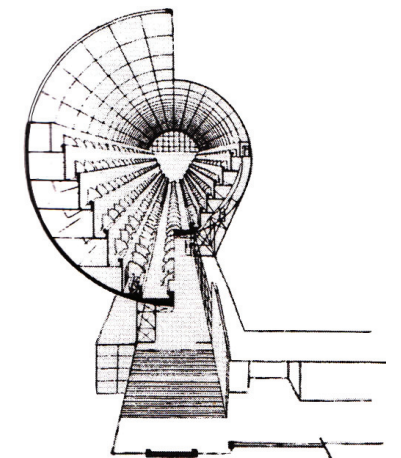
G. Glouschenko. Congress Palace. Diploma.
1927



Pashkov. Project for a library
1927

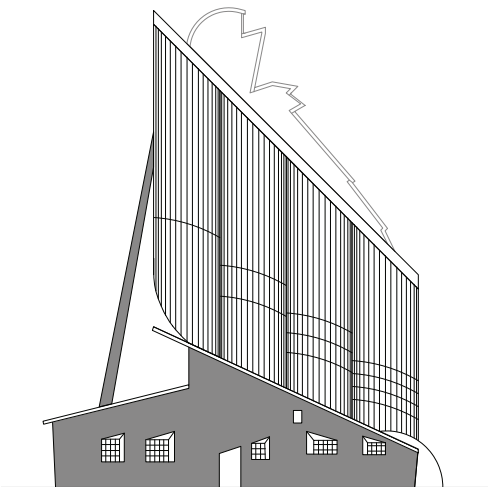
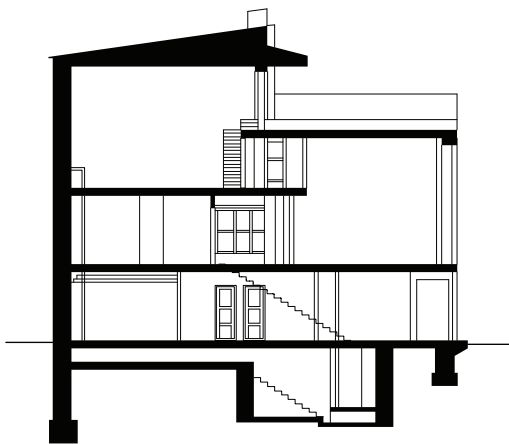


G. Glouschenko. Congress Palace. Diploma.
Section. 1927

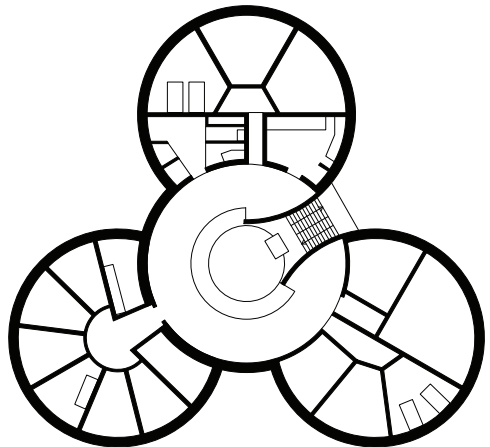
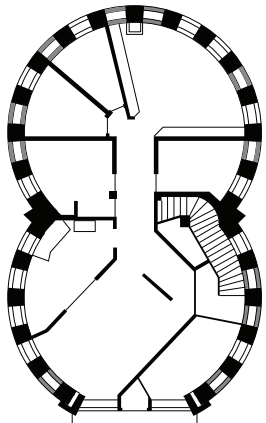
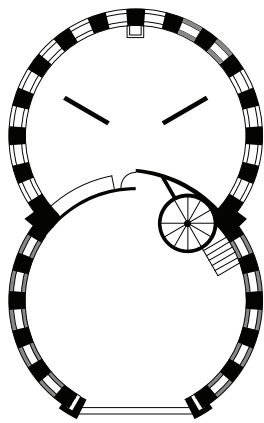
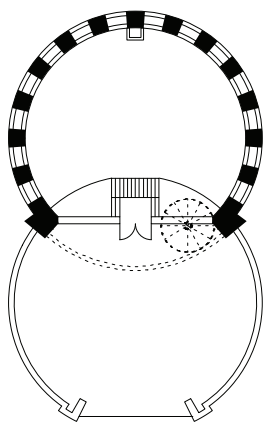


Pashkov. Project for a library
Section. 1927

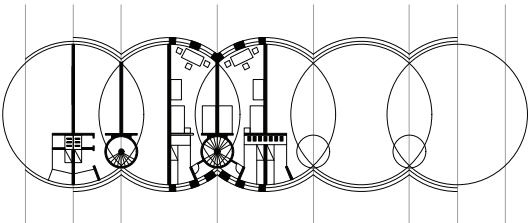
K. Melnikov. Melnikov house. Moscow. 1927



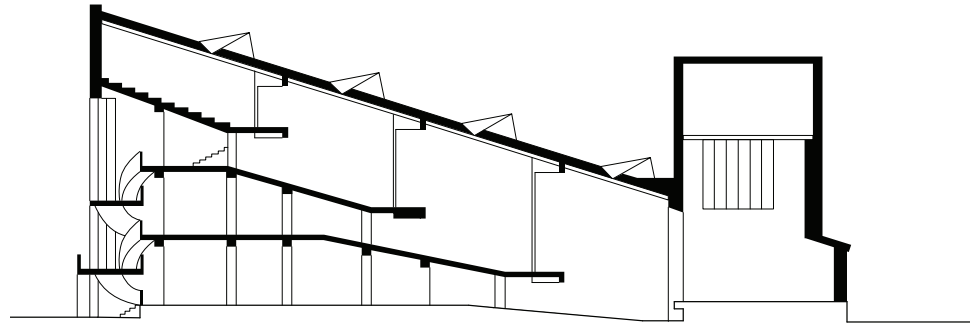
Vegman. Form Exercise. Silos
1927



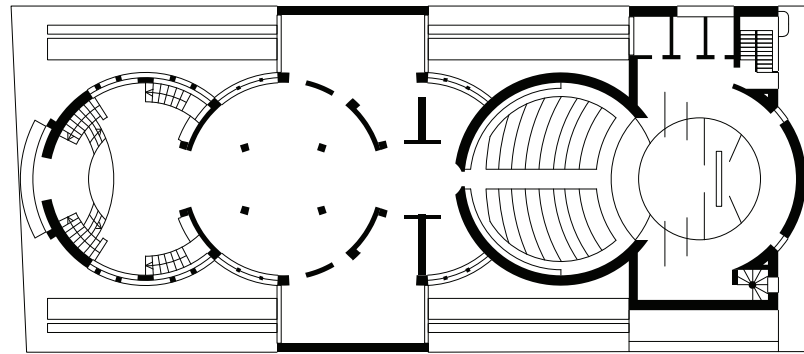
K. Melnikov. Housing project
1929



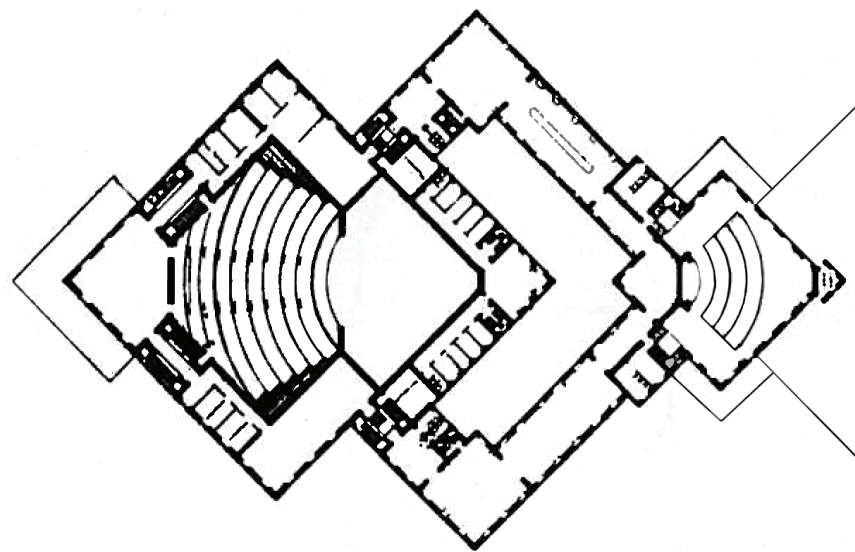
K. Melnikov. Housing project
1929



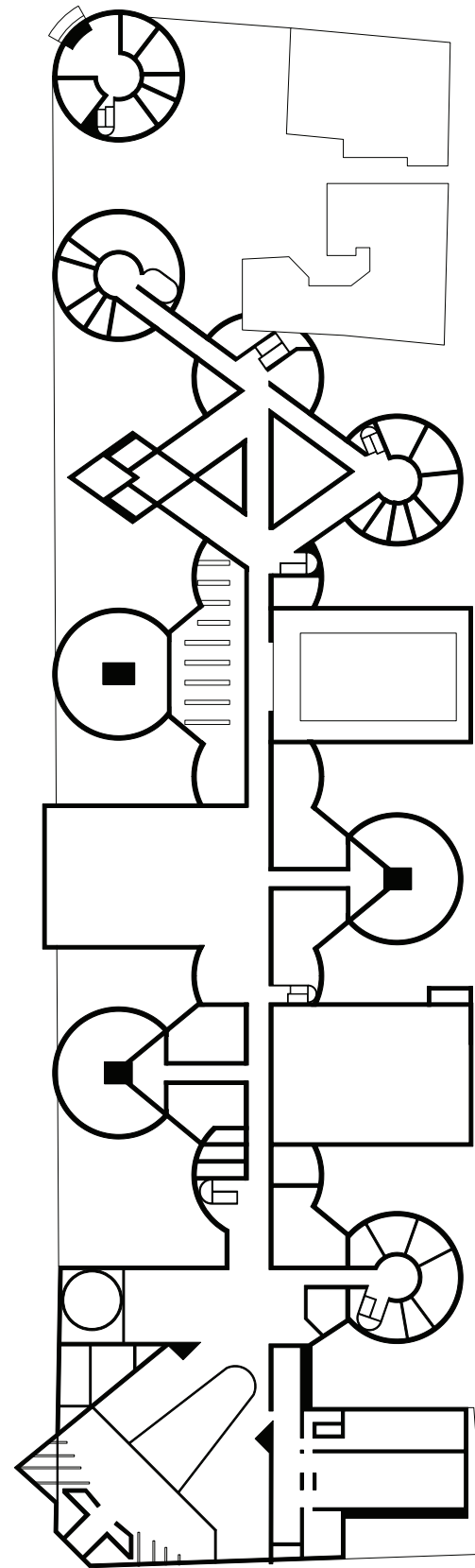
K. Melnikov. Zuev Club
Moscow. 1927



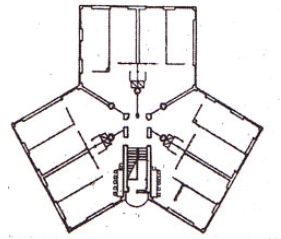
K. Melnikov. Zuev Club
Moscow. 1927



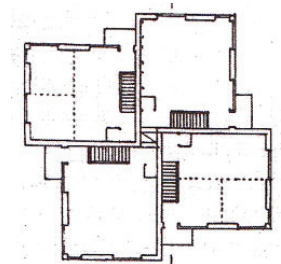
Belograd. People's House
Ivanovo-Voznesensk. 1924



K. Melnikov. Frunze Military Academy
1930

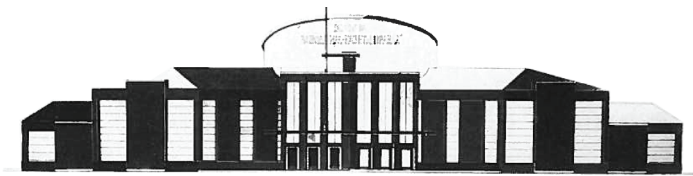
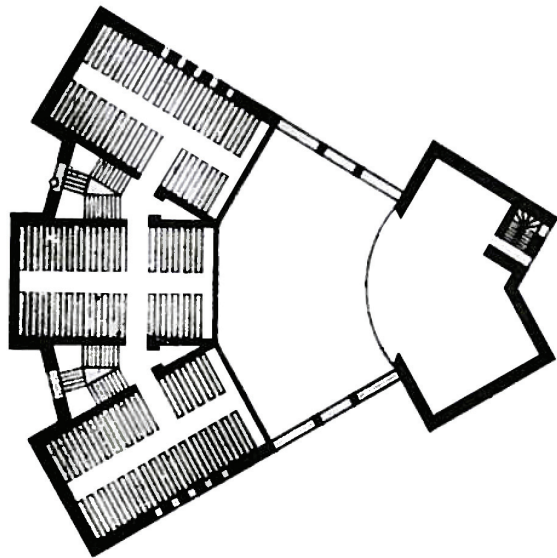
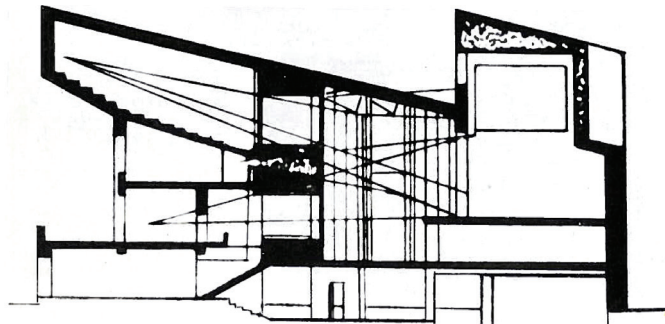
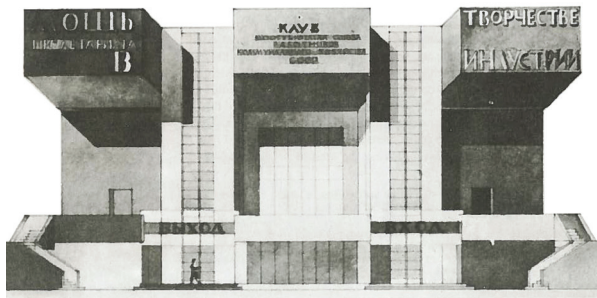


N. Ladovskij. Project of an industrial village
Kostino. 1929



N. Ladovskij. Project of an industrial village
Kostino. 1929

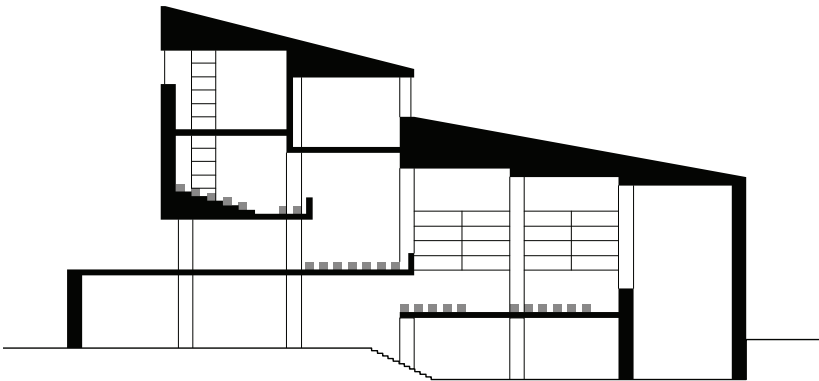
K. Melnikov. Rusakov Club. Moscow. 1928



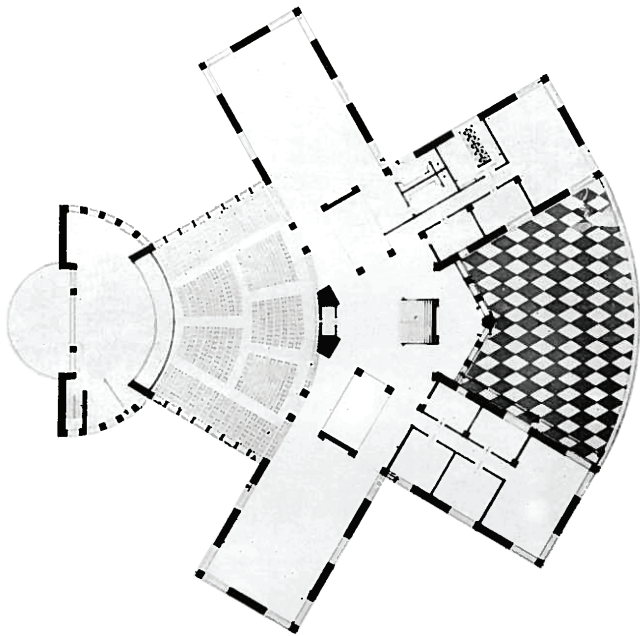
K. Melnikov. Dulev Club
Moscow. 1927



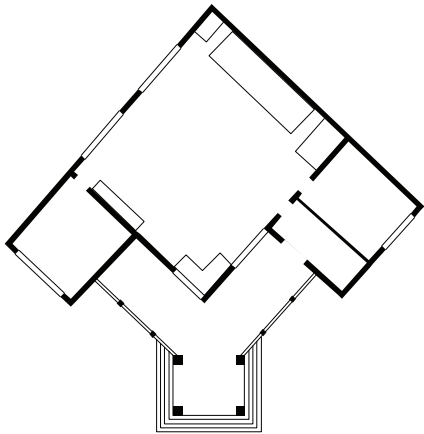
E. Mendelson. Sketch of an industrial complex
1914



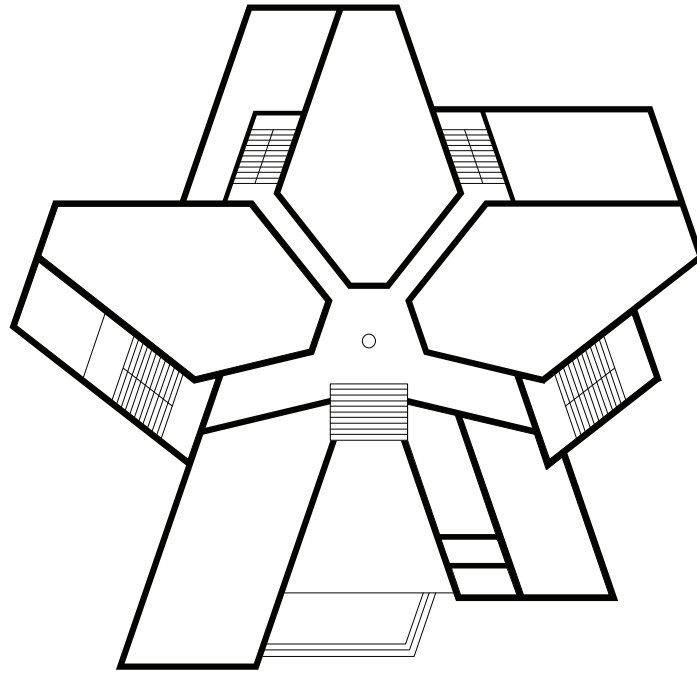
K. Melnikov. Frunze Club
Moscow. 1928



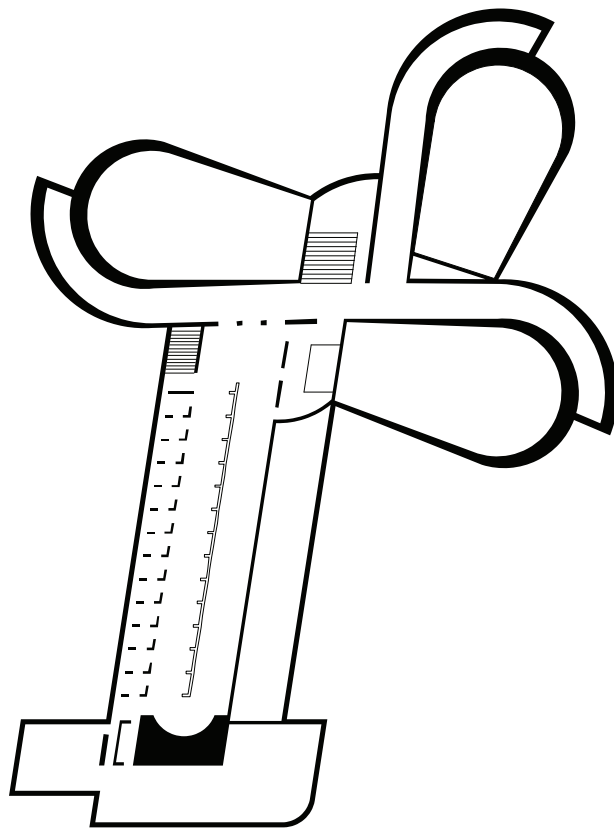
K. Melnikov. Dulev Club
Moscow. 1927



Lavinskij. Reading-hut
1925



L. Grinshpun. Project of a cinema
1929



Unknown author. Project of a cinema
1929

Part 2

Components

As illustrated by the visual essay, the products of constructivism portrayed by a large diversity. The result seems to be chaotic as there are as many forms as there are projects. It is reasonable that there are similarities in form, however one should not forget that the visual essay presents only a fraction of constructivist projects, which means that there should be even more variety. This phenomenon of chaos is too obvious to be neglected. Inserting constructivism into the historical context might explain the origin of the form diversity.

In the beginning of the 20th century, Russia was going through several major crises. The defeats in the war with Japan, the Great War, the weakened position in the industrial development, put the country and the government in a very unfavourable position. After abolishment of tsarism and the civil war that ended in 1920 the left artists, painters and writers had their freedom to introduce their intellectual inventions as an alternative to the artistic movements of the old regime. Their art was full of political and social references and had a real task to make a reform on a social scale. At the same time the industrialization was growing and taking effect very quickly. The technological development was a great inspiration as it was the process that was nourishing the society and bringing it to evolution. Given that two revolutions, political and industrial, hit the country at the same time, there had to be a way to rebuild a totally new environment based on the ideological and technological forces.

Eventually, the new inventions started to be eagerly injected into the society, being quickly interpreted and digested by the artists. Poet V. Mayakovsky wrote: “a revolution of content is impossible without a revolution of form¹”, the representatives of the creative professions were thus given the task to find the form that would suit the content. The artistic environment was, however, unstable as the multitude of ideas drew it in different directions. The society was about to build itself up from zero, the quest for the new form made to a certain extent an overproduction of ideas. In architecture this phenomena was translated by the struggle to find a right balance between the various ingredients that compose an architectural object. The relation between form and function had to be reestablished, the statue of structure had to be reconsidered, the aesthetical image was to be discussed, and all that while assessing the architectural and spatial qualities of a constructed object. In the chapters that follow a study is made on how the diverse forces of different origin reacted inside an architectural project, how artistic, technological and ideological influences were collaborating inside one unitary object. Architecture was a domain that made all the intellectual inventions overlap inside some very compact architectural products, which made the projects become complex and intense, carrying a big concentration of various influences.



V. Ermilov. Tribune. Kharkov. 1927

Art and architecture

An artist can be a creator only when the shapes of his paintings have nothing to do with nature.²

K. Malevich

From paper to built environments

Considering Russian avant-garde as existing mostly on paper, it may seem that constructed objects inherited a lot from fine arts, while neglecting some of the architectural features of the built space. The artistic movements distinguished themselves as radical interpretations of reality. The abstract suprematist art was functioning as an intermediate state between the old and the new reality: abolishing the rules of the conventional figurative art it introduced a new system of abstracted visions that were to be the blank canvas for the new developments in the society. As drastic changes with a total dismissal of the spiritual and material values were taking place, a painted subject could not have a predictable face, it would be hidden behind the primitive forms of suprematist art.

Gradually the language of suprematist shapes would invade the environment in form of art objects, posters and signs, gaining a very strong social role. Later, the formal approach of painters will be applied on the fabricated environment, making the abstraction become a reality, a present component of the city. The personal vision of a group of artists became everybody's life. Chronologically the emergence of art into social environment can be described as three steps: the old figurative reality rejected, the abstraction of the old and the appearance of the new figurative reality that was derived from the abstraction. What used to be a painted abstraction was materialized, becoming the new existing environment. The consequences were such, that many parallels between the painted and the built world could be drawn. The concepts that were purely artistic were transmitted to architecture.

Production art versus aesthetics

The difference between the aesthetic art and the production art was important as it underlined an essential separation between the concepts of visual quality and the concepts of methodological approach. Suprematism, though radical and revolutionary as it was, was more a principle of aesthetics than a tool to rebuild the society. It could be compared to impressionism or cubism, being an artist's interpretation of the environment, rather than an idea of a new reality. Constructivism, on the contrary, was conceived as a principle of production, as a method that it was suitable to apply to reconstruct a new social environment. An artist movement called Veshism was its pre-

decessor, being a principle of production of utilitarian things. Art was conceived as work, on the equal basis as the work done in the factories and industries. Constructivism acted on a similar basis, being inspired from the products of technological progress, although it should not be interpreted as a simple application of the industrial innovations. B. Arvatov states the factors³ on which this method would depend: the material, the process of production, the task of organization and the conditions of perception. With these factors as a starting point a set of methodological approaches were produced. It is important to underline that constructivism as an artistic movement also belonged to abstract art. Its abstraction, in contrast to suprematism did not lay within the method of representation. On the contrary, constructivism clearly depicted the details, the materials and the articulations of the subject. What remained unknown was the area of application of a particular creation. Like the “Hanging construction” of A. Rodchenko, constructivism suggested a method that could be applied in building, but it did not make a precision on what kind of construction it could be suitable for.

When the two principles of production and of aesthetics were applied to architecture, it seems that their use was not clearly separated; the two principles often coexisted in the same project, in different scales or on different levels of detail. The Institute on the Lenin’s Hills by I. Leonidov was definitely referring to the constructivist ideology by the use of exposed structure, showing the static concept and the structural sculpturesqueness that added to the general ensemble. On the other hand, the pure volumes floating in the landscape showed a very clear reference to the abstract art and to the search of the symbolic meanings of the geometrical shapes. Some projects tended to be more constructivist, some more suprematist. The general attitude was that they often did coexist inside one creation, which could be quite natural as the two movements were complementary in their nature. Suprematism had the task to give a formal shape, while constructivism was responsible of its materialization.

Visual perception

The emergence from paper art had carried the consequences that the constructions keep the properties of the art objects. These properties had without a doubt an importance for the formal and spatial qualities of a built space, but the most obvious and superficial observations lay within the subject of our visual perception. The techniques of composition, colour use and formal shapes taken from the visual art added another dimension to the subject of architecture: it made each of the architectural buildings become a monument, a three-dimensional painting or sculpture at the same time as it carried its architectural properties.

Given that the built space was treated using the rules of artistic composition, some visual principles of architecture were neglected. The abstraction of elements (should it be volumetric shapes or the composites of a facade) had the effect that the buildings had lost the expression of scale, which the Tribune in Kharkov of V. Ermilov illustrates quite well. Its size would remain a mystery if not for the contextual buildings and scale figures. The fact that aesthetics, ornamen-

tation and building details such as windows, doors etc, were highly dependent on the industrial references also contributed to that effect. Given that the products of industry did not have any established set of rules on proportion, the sensation of scale was partially lost, as illustrated by the Experimental project of a tower. The size of any architectural element was simply unpredictable. Even the habitual items such as entrance, stairs and doors could have unusual dimensions. In what concerns the geometrical form, there was even less rules: any simple form as cube, sphere or cylinder could bear any scale. An architectural project did appear as a composition without scale like an item of suprematism.

Also the artistic styles were inherited by architecture. The representations of the buildings clearly reveal the bearing of a style. The Monument to the III International by V. Tatlin, the Izvestiya Pavillion by B. Gladkov, the projects of I. Leonidov were clearly constructivist, the Tribune in Kharkov of V. Ermilov, the Library of Pashkov, the cylinder projects by K. Melnikov were suprematist, while the projects of N. Ladovskij carried a trace of cubism. The projects were buildings with a supplementary dimension of artistic language applied on them. This language was clearly non-architectural, it made a building take part in a much wider cultural domain of artistic experiments on expression. However, unlike the artworks, constructions could not neglect the issues of physical properties and technical resolutions. Constructivism had the role of searching for concepts of technological utility, although the application of these concepts had not only an utilitarian role, but also formal and stylistic features. The next topic is about what role the structural and physical issues were playing in the formation of a project.

1. Mayakovskij, Vladimir. *An Open Letter to the Workers*. Газета Футуристов [Gazeta Futuristov], 15.03.1918, p. 8

2. Malevich, Kazimir. *From cubism and futurim to suprematism*. Moscow, 1916

3. Khan-Magomedov, Selim. *Pioneers of Soviet Architecture*. New York: Rizzoli International publications, 1987, p. 146



N. Trotskij. 2nd Thermal Power Plant Leningrad. 1930

Structure and form

Upon the scales of metal fishes
I read the new mind's' attribute.
But you,
could you
complete a nocturne
performing on a drainpipe flute?⁴

V. Mayakovskij

Engineering structures as architecture

Artistic experiments of A. Rodchenko revealed the need of exposition of structure as the symbol of technical progress. Engineering science was a big obsession, the progress of the society was to be illustrated in the new architecture, in order to show the nature of the modern, progressive times. The works of V. Shukhov were an eloquent example on how the structural systems could become a representation of an era. However, despite their shape, the Shukhov towers illustrate no more than an example of technical progress, being a purely structural concept of engineering. It definitely had a quality of beauty in its elegant structural solution, but the conception of structure did not exceed its utilitarian function. The constructivist architecture went further: the structural concepts became a subject of form, space, and identity, putting structure in a category of style-generating elements. The innovations within the structural engineering, the techniques of prefabrication, the visual look of the industrial buildings, they all were interpreted in the avant-garde by the reconsideration of their aesthetic values. When comparing the Monument to the III International of V. Tatlin with the towers of V. Shukhov, the difference is easily detectable. Unlike the towers of Shukhov, Tatlin's Monument was using the metal structure not only by the need of a technological support, but also to increase the dramatic look of the tower, it truly discovered an expressive structural form. Its structure became the form, its stylistic, aesthetic and space-generating feature of the building.

This obsession can be traced in other projects. The Institute on the Lenin's Hills of I. Leonidov is a spectacular example of the exposition of structure. Here, all the bearing systems were theatrically placed outside the built volume, forming an important element of composition of equal importance with the parallelepiped and the sphere that were the primary forms in the ensemble. In the less radical projects, like the Leningradskaya Pravda of A. Vesnin or the Izvestiya Pavillion the industrial elements were given an additional sculptural and aesthetic value. Being very far from industrial, these buildings still possessed of an industrial look, tricking our perception.

The use of prefabricated elements, rough materials, exposed structure etc, was again the feature of style and a connotation to industry and machines. In some cases the reference to the machinery world was brought to the extreme, giving the project the ability to transform space in

time, being in motion like a real mechanism. But before the real physical motion can be discussed, there was an important intermediate state that was the apparently dynamic composition with no actual movement performed.

Visual motion

Inspired from the artistic works such as K. Malevich's "Magnetic Composition" or the "Hanging Composition" of A. Rodchenko the anti-gravitational configurations were challenging the logic of the physical laws. It can be observed in the projects of the Lenin's Tribune of L. Lissitzkij, that were probably inspired from the industrial items such as water towers, where a considerably large volume was placed high above the ground on a apparently fragile support. The same was present in the Leonidov's Institute on the Lenin's Hills where the sphere auditorium was floating in the landscape, or the Library of Pashkov where the enormous cylinder seemed to be about to roll. Those are the examples of static entities that have a tendency to illustrate a dynamic behaviour despite their static nature. These objects challenged the structure that was used to support a design that was not following the logic of static rules. It became a tool to create a contradictory image where the rules of the physical universe were to a certain extent rejected, realising a project that seems to be unreal or unstable. These static objects were hinting of a possible dynamic that could exist within architecture.

One might consider that the paintings of suprematism or the static compositions of L. Lissitzkij or N. Ladovskij and A. Rodchenko were not about objects that were in their continuous motionless state, but that they depicted a set of items that were going through a dynamic process, being represented at a certain moment of their movement. The interpretation of the motion could be indicating how to read a spatial setting. N. Ladovskij in his teaching established a set of rules that determined the behaviour of a composition in terms of the properties its composants. The analysis was built around the physical properties that were purely visually determined. The actual size and mass were not considered as factors that could define space. What was important was the visual weight, size and stability. These factors had a direct effect on the visual and spatial dynamism, becoming space-directing and motion-giving. In that way a present visual motion was an eloquent tool of architectural grammar. The use of inflected volumes to translate space drew the attention to its deepness, the direction of its flow or its entrances and exits.

Physical motion

"We have overcome the static architecture of pyramids. Our architecture flies, rolls, swims"⁵. With the static sculptures that reveal a dynamism inspired from the moving machinery objects, the ideas of constructivism turned into dynamic systems, carrying a special vocabulary of non-static volumes.

In architecture the relation between form and motion was a popular subject. Starting with the

sculptural experiments of A. Rodchenko and V. Tatlin, architecture began to produce built spaces that were physically transformable. The mechanical systems of engineering were used for conventional dynamic systems as bridges, but also for other types of construction, which had no real utilitarian need to be in motion. The dynamism as being introduced on all scales, from details (as structural articulations) to whole buildings as the Monument to the III International of V. Tatlin or the Leningradskaya Pravda of K. Melnikov, converted the built architecture into mechanised organisms. Their existence could be more ideological than utilitarian: The motion inside the Monument for the III International was there for purely symbolic reasons. The dynamism played the role of transmitting an ideological message, rather than being there for architectural purpose.

The component of usefulness was, however, also present inside the dynamic environments in form of flexibility. First of all one shall note all kinds of light transformable and transportable installations. The light kiosks, tribunes and pavilions were easily constructed and transported. The project of the Auto-agit-theater by A. Babichev showed the aspect of dynamism that was present in the society. A programmatic element could be moved, transformed, deconstructed, all due to the need. Another example is the Leningradskaya Pravda of K. Melnikov that could be considered as both symbolic and flexible. Its movable parts definitely refer to the programmatic nature of the project. The media tower was well illustrated by the rotating all-seeing volumes. The concept of flexibility was inside the changable position of these volumes either due to the sun or to the space arrangements. In fact the transformable space was present in many projects, such as the Ruskov Club of K. Melnikov or the Auditorium of the Institute on the Lenin's Hill of I. Leonidov. Along with the transportable theater of A. Babichev these projects represent constructivism as as the transformation of architecture into a machine that was nourished by the social need, where the programmatic uncertainty was compensated by the spatial transformance.

4. Mayakovskij, Vladimir. *Could you?* Требник Троиx [Trebnikh Troih], Moscow, 1913

5. Kantsedikas, Alexander; Yargina, Zoya. *El Lissitzkij. Film of Life*. Moscow: RGALI, 2008



I. Chernikhov. Water Tower. Leningrad. 1931

Shape as an icon. The symbolic meaning of form

With my arms across,
a cross on the summit-peak
I catch my balance,
gesticulate like mad.⁶

V. Mayakovskij

Ideological shapes - from communism to industrialization

Left art, having a very important social role, had to search for a way to depict the social identity inside the built space. There was a chaotic situation of uncertainty about how things should look. Two main subjects were clearly present: the political messages and the reference to industrialization. Curiously, the subjects coming from the two domains were quite similarly shaped and often had similar expression. Comparing the Rusakov Club of K. Melnikov and the Industrial Complex of E. Mendelson, the Lenin's Tribune of L. Lissitzkij and the Water Towers, there was a distinct similarity in shape. It seems that the idea of a progressive society (no matter what kind of progress it is, political or technological) was portrayed using the same tools of symbolism. What seemed to be an important message was brought through the appearance of the new built items, their integrity and presence inside the social life of the individuals. A building had to be explicit and readable, somehow dramatic and emotion-provoking. The importance of the appearance laid thus within its expressivity and its monumentality.

Composition and meaning

A lot of attention in form conception was given to the search of a more or less precise grammar of symbolism of simple geometrical shapes. A considerable part of symbols was inherited from art, together with their grammar of form. Malevich had built a system of significations that were attributed to simple shapes: square was symbolizing the world, a circle was the movement of the Earth, a triangle - the supreme power. The colours also had their codes: red symbolized the revolution, white - the origin of good, black - the origin of bad etc.⁷ When this symbolic language became part of architecture it was transformed into a grammar of volumes: where form, size, weight and gravitational properties had a specific meaning. Compositional techniques were used as tools in order to create a narrative plot. The theorisation of architectural composition by Ilya Golosov⁸ made it possible to distinguish built objects as being neutral or negative, passive or active, dominant or dominated. The language of volumes was used as a tool to make a design speak, revealing the expression that laid within simple volumetric arrangements. A volume could not be conceived with neutrality, its expressiveness would lay directly within its geometric nature, transmitting a message that had a direct influence on the perception. In that way the Water Tower of I. Chernikhov

was not only a strong image of industrial architecture, but also a powerful composition with geometrical symbolism. The cylindric volume placed high above the ground was at once a water tank and a mass that defies gravity, which makes it both utilitarian and monumental. If we consider the Horizontal Skyscrapers of L. Lissitzkij as an example of a shape that was not totemic, it would be clear that there was also a clear coexistence between utilitarian concepts and geometrical symbolism. The skyscrapers were conceived as a network covering the city of Moscow, as a concept of densification. The volumetric approach was the placement of very long and heavy horizontal volumes above the ground, which created the image of an upper-level city that floated in the sky. Its expressiveness was again due to the rules of geometric grammar of form and weight.

The language of geometry, however, did have its limitations. Being based on the relation between size and weight, it was much dependent on the scale of a built space. In constructivism, as can be seen from the visual essay, all sizes were present. The projects of a smaller size were not necessarily less eloquent as monuments. Naturally, they would be less dominant in terms of size, but they must have been in possession of an element that would make them distinct. This component is believed to be the sculptural expressivity.

Monumentality and expression

V. Kandinskij in his compositions⁹ searched for the revelation of the common emotional reactions a combination of form and colour could evoke. The role of the unconscious perceptual processes was studied through the analysis of a set of objective regular patterns within the art of composition. He called his works for “monumental art” that touched the psychological and emotional state of a human being. In an indirect way this approach touched architectural conceptions, changing the meaning of a monumental expression. A monument was no longer a matter of scale, weight or other physical or aesthetic principles, but an emotion-evoking setting.

Surely, there existed forms that were easily interpretable in terms of monumentality, like the high rise tower of V. Tatlin or the skyscrapers of V. Krinskij . They had a sculptural quality that reminded us of their belonging to art, while possessing a form that did not question their monumentality. Their size, their heaviness, their impact on the surroundings were definitely the factors that gave them the virtue of a monumental construction.

Looking at the objects that were less impressive in terms of size, height or weight, it is still clear that they did have a component that makes them monumental, although it must have been something else than the direct physical properties of the form. The use of form as a tool to create independent emotion-evoking items opened the possibility to the expressive sculptural monument to exist. Detached from the urban tissue due to its form, such a construction was put in a special position of independence and autonomy. The use by K. Melnikov the cylinder as an alternative urbanistic form illustrated that idea. The cylinder that was inserted inside an existing city tissue, was a form that totally detached from the surrounding geometry, putting itself in a position of independency. It had no reason to be a monument due to its programmatic characteristics, no

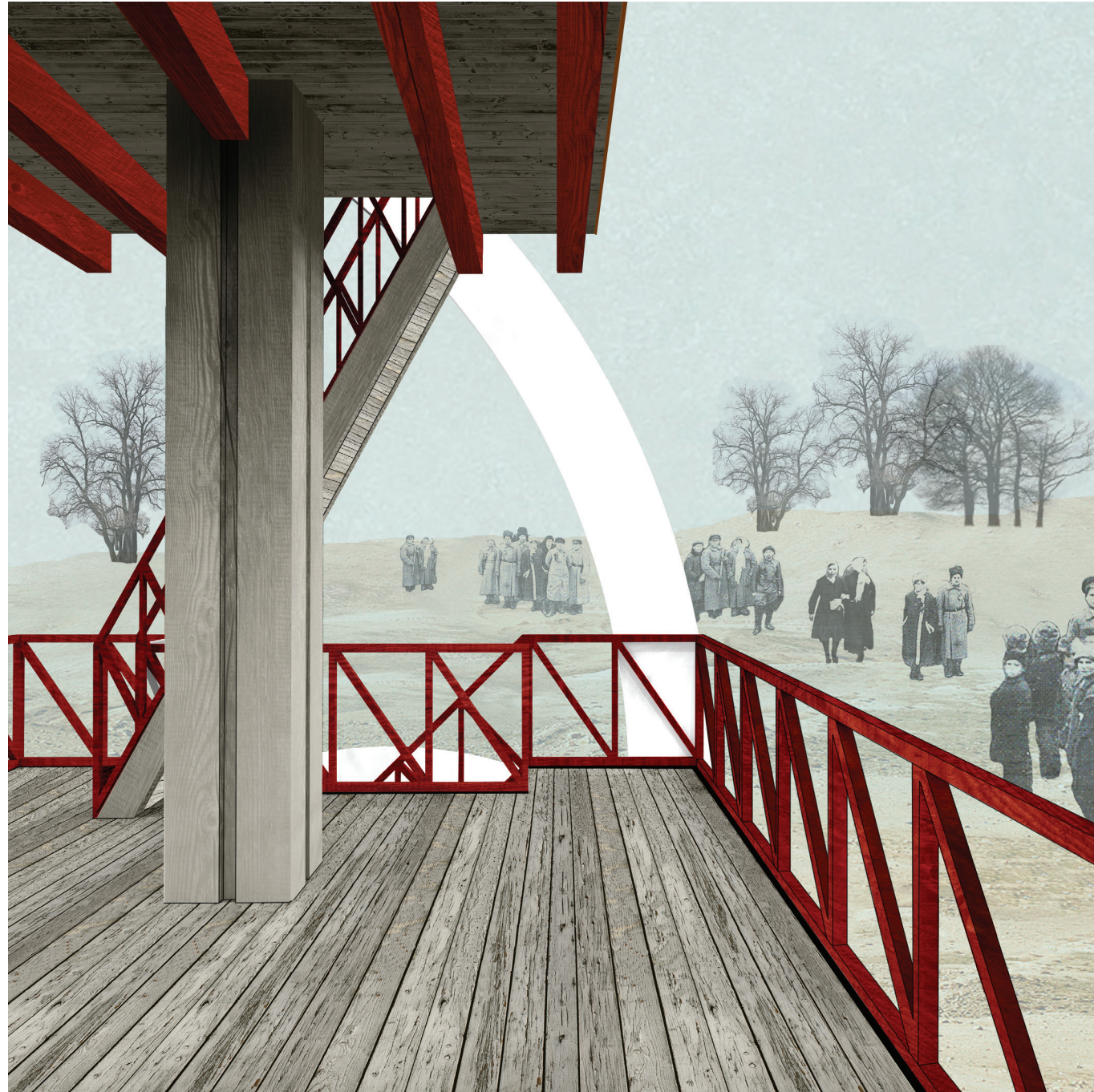
matter if it would be a housing unit or a worker club. However, due to its formal properties it definitely was a monument, only because of its position, form and independence. The strong point of these small-scale projects was not the oppressive look, by the artistic approach. It can be seen in the project of Mahorka Pavilion by K. Melnikov where the sculptural quality were not dependent on the size and the weight of the volumes, in contrast to the Melnikov's Rusakov Club where the monumentality was produced by a robust and almost repulsive image. In Mahorka-like projects the attention to the building was drawn by other means: a positive dynamism, an independent position and a very high expressiveness, which makes even a less imposant construction take a dominant role in a built context.

6. Mayakovskij, Vladimir. *About that*. Moscow. 1923. Transl. by Herbert Marshall

7. Khan-Magomedov, Selim. *Pioneers of Soviet Architecture*. New York: Rizzoli International publications, 1987, p. 63

8. Khan-Magomedov, Selim. *Ilja Golosov*. Moscow, 1988

9. Khan-Magomedov, Selim. *Pioneers of Soviet Architecture*. New York: Rizzoli International publications, 1987, p. 62



B. Gladkov. Izvetia Pavillion. Moscow. 1925

Content as an icon. The symbolic meaning of function.

And I learned the alphabet from signs,
leafing through the pages of tin and iron.¹⁰

V. Mayakovskij

Function reinvention

In the chronological evolution of an abstract form that went through the transformation into a three-dimensional built space, the next step would be the insertion of a function inside the form. The left movement had produced new program concepts that were to be housed inside the abstracted architecture. The revolution did touch the content, transforming the residence into social housing, the theaters were replaced by the worker clubs and the palaces of culture, the restaurants were defeated by the vast factory-kitchens. These programs that illustrated the lifestyle, were they not portrayed as very important ideological symbols? Did they not contribute to the total ideological image a building?

Let us consider for instance the workers club, which was one of the most specific programmatic invention of socialism. The function of a workers club in providing a place for working people where they would bring their time free from work, was a substitution for the usual social and cultural spots. The reinvention of such a precise programmatic element had to be reflected in the recreation of an image and a spatial organization in order to inject this type of project into the people's life. Still, if we consider the existence of the worker club as an abstract form with no precise image in terms of shape, size or space, it will be a strong ideological invention because of the content that lays within the concept. In that way the function was iconic in itself without yet been given a precise material dimension. To such iconic functions may be added the reading huts, the factory kitchens, and of course the media towers.

The media towers and other means of mass information such as tribunes and to a certain degree the kiosks and pavilions acted like spots of communication that assured the integrity of the socium. The role of the function was hence extremely important as it determined and shapes in a very strict way the life on an individual. However, despite the very precise and repetitive definition of function, there is little evidence on a common formal language for each specific program. As shown in the visual essay, program and shape were not interdependent. Melnikov applied the same techniques of cylinder juxtaposition for both housing and worker clubs, towers could be an infrastructure for media, cultural or political buildings, industrial installations were similar to the clubs or pavilions in form. Although the search for the appropriate image of each specific program did exist, the establishment of a truly efficient system of geometrical grammar was not quite ac-

complished. The function of a building had to be expressed by the addition of another component. That was where the verbal expression played an important role clarifying and magnifying a building's functional and ideological meaning.

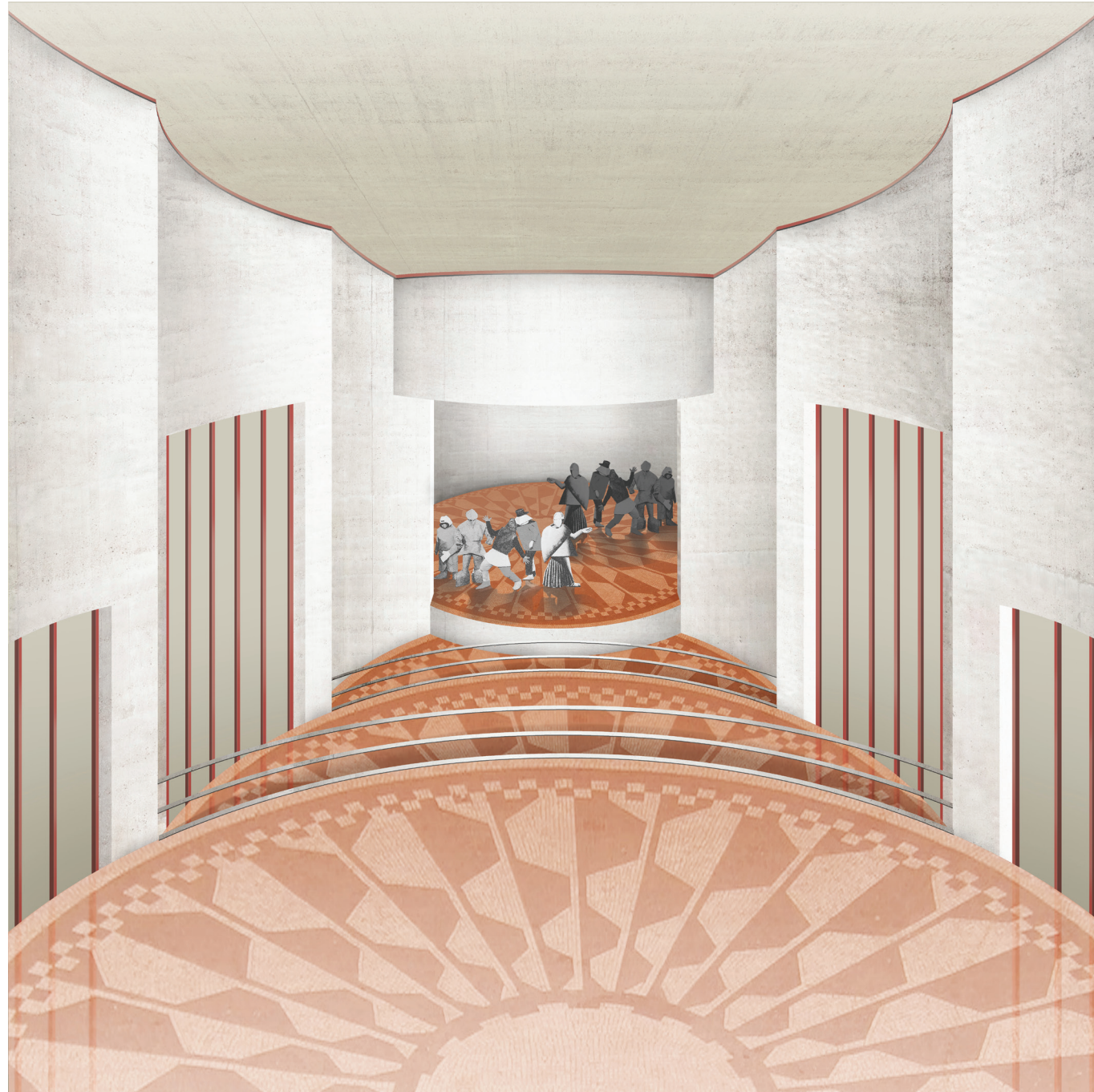
Verbal expression

The grammar of form was probably too metaphoric and not enough explicit: it needed another component that would enable us to read the signification behind one shape or another. In the early 1920s artists collaborated often with writers, which made the expression of the desired message both graphic and verbal. A. Rodchenko worked closely with the poet Vladimir Mayakovskij in making signs and posters, converting the conventional sign of neutral verballity into a poster that was truthfully strong and explicit, generating a message both verbally and visually. In this way the two components were complimentary: the symbolic of shape was strengthened by the language and vice-versa. The application of slogans and signs on the built facade translated the architectural buildings into enormous billboards. This concept was seen on the media towers, on the clubs, on the factory kitchens, on the pavilions: everywhere where an element of program was present. Everything had its name exposed on the facade. The application of a sign to a building, transforming it into a billboard, had its consequences in the architectural conceptions. The sign could be integrated in the compositional design as a volume that had that specific function to carry a slogan as in Gladkov's Izvstiya Pavilion.

Rodchenko's idea about an "upper facade" was based on visibility and had a great impact on the form of the city. In his opinion the upper level of the city had to house the new architecture in form of towers, bridges, public spaces, all including their verbal component. His ideas question the scale of the built space: the dimension of the upper facade composants was to be very significant, which would enable the space to be readable from very far away. In that sense the city with all its components of visual and verbal elements was given an almost cosmic dimension. It could be compared to a collection of posters of a territorial scale, making the function becoming a very iconic feature as it was to be highly exposed and visible from long distances.

Being represented only by words the existence of function still had to be materialized. An approach in treatment of the space that was contained had to be developed. The next topic will treat the human dimension: what space experience could one expect when the function was inserted into a given mould.

10. Mayakovskij, Vladimir. *I love. My university.* Moscow. 1922



K. Melnikov. Zuev Club. Moscow. 1927

From form to content, from content to space.

Every form is a universe.¹¹

K. Malevich

Function obeys form

Considering avant-garde architecture as an intersection of visual and functional attributes, it seems that the function had a secondary role in the generation of a project. The influence of the compositional methods was premordial: the form was conceived as an independent and eloquent concept. The function had to a certain extent obey the formal environment. It could be portrayed by a comparison between the cylinder projects of K. Melnikov: Melnikov house, the Zuev Club, the Housing Project and the Military Academy. They all had different functions, while the similarity in formal approach was dominating. The same goes for the projects of N. Ladovskij and his followers. In those two cases an obsession by a form or an architectural image lead to the use of the same formal elements to systematically make projects different in scale and program, but similar in shape. Shape and content were hence not interdependent, form did not define content and vice-versa. The consequence was that function was forced to inhabit the form, which resulted in a set of spaces that seemed to be problematic in terms of use as they were not adapted to the function of the building. The issue of spatial quality was, nevertheless, treated with precision and accuracy. Even though the form was initially an artistic concept, it became very soon a component of architectural composition, and had its significance in terms of spatial properties. Volumetric configuration gained an additional meaning within architecture. Besides being a grammar in terms of symbolic expression, they have become a grammar of space and architecture. The form was no longer conceived only according to its expressive, technical or utilitarian qualities, but also as being space-directing. It had to serve the need to orientate in space.

Form as a mould

The space that was enclosed inside the form did not have the same liberty as the exterior. The outside was the representation of the architectural figure. The function with its space had to adapt to the outer shell. But again, it does not mean that the inside space was a direct derivative of the exterior form. There was often a dissonance between the atmospheric qualities of the enclosed and the exterior space, but these differences were more due to the unsimilar significance that a building could have inside and outside. The look of Rusakov Club, inherited from the brutally looking factories by Mendelsohn was part of a general ideology with its robust and monumental appear-

ance. Its inside spaces were on the contrary responding to the program of workers club, a place for social interactions. In other cases a difference in the interior treatment appeared for projects with similar outside form. Typically all the cylinder projects of Melnikov while being similar in outside, took use of the cylinder in a manner that corresponded to the function: housing projects used each unit as a separate entity, while public buildings possessed of an open space inside the succession of the cylinders. The program inside had simply to adapt to its inflexible skin, but it did it in an intelligent way, inventing a diversity of spatial settings.

Other situations exist where the occupation of the mould shows the strategies that leave room for flexibility. Taking the form as a strictly defined, untouchable shell, the content was allowed to arrange itself due to the need. The auditorium of Leonidov was designed in order to host between 400 and 2000 individuals, which means that it could be divided in sectors despite its pure and uniform look on the outside. The fragmented configurations as the Covered Market of I. Volodko, the USSR Pavilion of I. Golosov, the Zuev Club of Melnikov and the Military Academy were all composed of several volumetric units that function as spatial separations, being part of a continuous space. In Melnikov's club, as illustrated by the image, the very enclosed property of cylindrical rooms, created a hint of intimacy inside a continuous space. Also, for his Rusakov club Melnikov actually did design sliding mechanism that would allow the transformation of rooms, which the fragmented plan totally allowed.

Circulation as a shaping strategy

It would appear that space was in general treated with creativity, without being only a contained room. In each case the inside space was definitely being given a specific character. In order to look further let us subdivide the contained space into parts. By separating it into several strategic levels the content would no longer be considered as a homogeneous substance, but a hierarchical system consisting of livable space and circulation. The way circulation was treated is quite curious, since depending on how it was injected into a project, it could appear to be shape-giving. Let us consider three projects in which circulation was treated differently: the House of Industry of I. Leonidov, where circulation was outside the building; the Mahorka Pavilion, where livable space was not separated from circulation; and the USSR Pavilion of K. Melnikov, where circulation was clearly shaping the rest. Mahorka Pavilion, as other projects of the same type, had the property that the inside space had no predefined organization. It seems like the identity of the outside volumes was unclear and the volumes themselves did not have a defined spatial role inside the project. In this way the relation to the outside was weakened. All the interior space was contained in the outer volume and had no impact on the general composition. The project of Leonidov is in a radical opposition to the Mahorka. What we have is a huge parallelepiped inserted into the landscape, with the vertical circulation put outside the volume, leaving the livable spaces to be independent from the circulation. In this project the circulation had an effect on the general volumetric configuration of the project as it was contained by an independent volume. The third case of Melnikov's

Pavillion was the one where the components of the program had an impact on the form. The circulation was a shape-giving element that cut through the volume, breaking with the model where form was primary with obeying function. In the case of the pavilion the accent on the circulation was magnified by the presence of the sculptural elements above. The functional part was then housed inside the resulting form that was produced by its primary volume and the deformation caused by the circulation.

As seen from this brief illustration, the inside space was an important preoccupation. Its importance laid not only within the necessity to make a form livable, but also within the maintenance of spatial quality and proportion. The three examples of circulation strategies show that gradually the spatial concepts were integrated into the formal design: the space was given the possibility to have an impact on composition. Being the last component of constructivism, spatial relations break the forms of abstract art into a figurative and understandable grammar of architecture.

11. Malevich, Kazimir. *From cubism and futurim to suprematism*. Moscow, 1916



V. Krinskij. Experimental project of a skyscraper. 1922

Conclusion

Constructivism appears like a real mise en scene with its decorations, the plot and the actors. While absorbing a huge amount of inspiration sources, constructivism could be compared to a theater play being a synthetic cultural domain. In this architectural movement the complementary ingredients were combined into one unitary whole. The interrelation of form and function was its specificity: it can not be imagined without the formal conceptions, just as it would not exist without the reinvented program. Due to this collaboration between the form and the function constructivism became a lifestyle-creator.

What it had formulated was to an extent an artificial and utopian environment where the forms of abstract art gave the feeling of unrealness. It might seem to be contradictory that architecture copied the products of art to such extent. What could be a possible reason for that was the fact that suprematist art had come very close to architecture in its geometrical shapes. Even when the painted subject had nothing to do with construction, its form could be easily applied while conceiving a built space. The fact that an artistic movement took such a direction could be a lucky coincidence that was so crucial for the identity of constructivism.

The next fundamental aspect is function that was literally dictating how an individ should live. With the industrialization the functioning of a city was studied to the smallest detail defining the everyday life of a citizen, the functioning of schools, canteens, public buildings and places of social interactions. Another big city architecture was born. It shall be said that constructivism covered a vast domain within construction. Having existed for only a short period, it contains a huge amount of conceptual ideas: from details to urban planning, from furniture arrangements to program conceptions of whole cities. Every element that was treated by constructivism was strictly shaped, which made every spatial setting gain a strong character with very precise limits and definition.

The question is, could constructivism exist today? Probably it could, but within other formal and cultural frames. It would be necessary to isolate new contemporary postulates that would be the base of new constructivism. It is important to remember that constructivism was before all a method. First a method of production within the art, then an architectural method. Constructivism was highly inventive basing itself only on a positive progress within all the fields it was taking inspiration from. The inspiration sources of today would not be the same as 100 years ago in Soviet Russia, but it would be part of the work to define the ideological, social, technological and aesthetic fundamentals. Finding the harmony between the components, while exposing them to the maximum in the creation a powerful and eloquent space, could be a way of defining a new contemporary constructivism.

General literature

COHEN, Jean-Louis; DE MICHELIS, Marco; TAFURI, Manfredo. URSS 1917-1978: La Ville, L'Architecture. Paris: L'Equerre, 1979

KHAN-MAGOMEDOV, Selim. *Pioneers of Soviet Architecture*. New York: Rizzoli International publications, 1987

KHAN-MAGOMEDOV, Selim. *Vhutemas. Moscou 1920-1930*. Paris: Editions du Regard, 1990

MALEVICH, Kazimir. *From cubism and futurim to suprematism*. Moscow, 1916

MAYAKOVSKIJ, Vladimir. *An Open Letter to the Workers*. Газета Футуристов [Gazeta Futuristov], 15.03.1918

MAYAKOVSKIJ, Vladimir. *Could you?* Требник Троих [Trebnikh Troih], Moscow, 1913

NAKOV, Andrej. *Kazimir Malevich. Catalogue raisonné*. Paris: Société Nouvelle Adam Biro, 2002

KOPP, Anatole. *Town and Revolution. Soviet Architecture and City Planning. 1917-1935*. London: Thames and Hudson LTD, 1970

Architects

KANTSEDIKAS, Alexander; Yargina, Zoya. *El Lissitzkij. Film of Life*. Moscow: RGALI, 2008

KHAN-MAGOMEDOV, Selim. *Ilja Golosov*. Moscow, 1988

KHAN-MAGOMEDOV, Selim. *Alexandre Vesnin et le Constructivisme*. Paris: Philippe Sers, 1986

STARR, Frederick. *Melnikov. Solo Architect in a Mass Society*. Princeton, New Jersey: Princeton University press, 1978

Rodchenko. Spatial Constructions. Galerie Gmurzynska. Ostfildern-Ruit, Germany: Hatje Cantz Verlag, 2002