

# Institute of Statistics, Unknown Project of Ivan Leonidov, 1929-30

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## ABSTRACT

The article considers a previously unknown project of the "Institute of Statistics" of I. I. Leonidov. After considering the authenticity of the new materials, the project is analyzed in the context of the work of I. I. Leonidov and Soviet architecture of the 20-30s as a whole. The analysis of the project allows us to restore the logic of Leonidov's creative evolution from the "Lenin Institute" 1927 to the project of the People's Commissariat of Industry 1934.

**Keywords:** *I.I. Leonidov, Constructivism, Institute of Statistics, Narkomtyazhprom, Stylobate, Tower.*

## 1. INTRODUCTION: DETECTION AND THE QUESTION OF AUTHENTICITY

New pandemic reality, while limiting us in our usual contacts, at the same time provides a chance to start new ones. So, unplanned leisure and the virtual space of Facebook brought me together with the French architect Laurent Beaudouin, professor at the Ecole d'Architecture Val de Seine, Paris.

On his page, I noticed images I had never seen before: two facades, signed "I. I. Leonidov. Institute of Statistics, 1929-30" [1]. In response to my question about the source of their origin, Mr. Professor addressed me to the Pompidou Center. Indeed, on the website of the Pompidou Center, I found both facades: a short facade, 0.191 X 0.293 m. [2] and a longitudinal facade inv. No. AM 1997-2-234, 0.2 X 0.296 m. [3]. Both sheets are "gouache on black cardboard. Received in 1997 from the Alex Lachman Gallery". Links to the originals, are given in the notes.

The character of the structure depicted on them makes certain adjustments to the existing knowledge about the architect's creativity and its evolution. Given their almost complete obscurity to Russian experts, doubts about their authenticity as the first reaction to this news is explainable. So, it should be evaluated before considering the project on its merits.

### 1.1 Visual Analysis — Size, Preservation State and Style

Comparison of the material and sizes of the sheets from the Pompidou Center with the data from the catalog of known Leonidov originals compiled by A. P. Gozak [4] demonstrates their compliance with the practice of I. I. Leonidov in the late 20s. A close analogy of the sheets from the Pompidou Center are the plans for "variant B" of the project of the "club of a new social type", 1928: 181x232 for the "club" and 191x293 for the "institute". In this way, the Leonidov's graphic sheets, looking so monumental as the printed illustrations, are essentially miniatures in the original.

The appearance of the cardboard sheets with smoothed scuffs at the corners and damage places from the edges is similar to the condition of the known Leonidov' originals. The style of the drawings also fit with our knowledge about the Leonidov's cotemporary graphics. Thus, the primary visual analysis does not provide arguments against the authenticity of these artifacts. These are the only materials of the project (and works attributed to Leonidov) that are in the collection of the Pompidou Center.

### **1.2 "Institute of Statistics" in Russian Sources**

In the SA ("Sovremennaya Arhitektura") magazine of the 1929-1930 years, Leonidov was the leader in the number and completeness of publications, but the project of the "Institute of Statistics" is not even mentioned in it. In the text of the first post-war publication on Leonidov, P. A. Alexandrov and S. O. Khan-Magomedov in 1972, the "Institute of Statistics" is casually mentioned as a "competition entry" [5]. However, there is no evidence of the competition itself and other entries of the "Institute of Statistics competition" to date. In later editions devoted to Leonidov, in particular, in the "complete collection of works of Leonidov" by A. P. Gozak and A. I. Leonidov [6] and in the last large monograph by S. O. Khan Magomedov about Leonidov [7], "the project of the Institute of Statistics" is present only as a line in the list of the architect's works.

### **1.3 Dating of the Project**

The Pompidou Center dates its facades to 1929-30. All domestic publications give the year 1929. The annotation in the State Catalog indicates 1930. Therefore, it is not possible to clarify the date without further research.

## **2. PROJECT'S CONCEPTION AND PRELIMINARY PUBLICATION**

The composition of the institute consists of two parabolic volumes – a multi-story cigar-shaped tower and a low domed volume, placed on a prismatic 1-2-story stylobate. An interesting feature of both parabolic objects is their mushroom-like character, suggesting the design of a supporting trunk with cantilevered slabs extending from it. (предложение удалено)

The scale of the original drawings is close to 1:1000. Based on this, the total height of the structure is 102m, the lower diameter of the tower-28m, and the dimensions of the stylobate - 100X214 m.

Due to the lack of permission for the use of reproductions (appeals to the copyright holder remained unanswered), the condition for publishing a note about the project was the production of images that convey the idea of Leonidov in a different graphic manner, and thus avoid claims from the copyright holder. Leonidov's originals are made in the conceptual and sketchy manner

inherent to him, also due to their miniature size, and have a number of inconsistencies with each other: the sizes of the tower, the small dome and the stylobate are slightly different, a number of elements available on one sheet are omitted on the other. The resulting need to bring together two projections, clarify and concretize obscure places, gives the task an element of reconstruction of the author's idea.

The character of the tower is taken from the longitudinal facade, the small dome volume, its size and height ratio to the tower – from the short facade. The height dimensions of the stylobate in the original facades differ markedly. For the stylobate in the new drawings, the average values are accepted. Judging by the trees that cover the central part of the stylobate on the short facade and are located not in front of it, but in the depth of the volume, there should be a curdoner or courtyard between two side wings. As a canopy over the entrance at the back of the courtyard, an undulating covering is used, which is visible on the longitudinal facade. On both facades there is a motif of a stepwise descending wall. In the reconstruction, these walls are shown in a grid of facing seams, present in all known cases of Leonidov's use of this motif. The nature of the image of greenery, as far as possible, follows the manner of Leonidov. Final images ("Figure 1" and "Figure 2") with the accompanying text were published by the portal Archi.ru [8].



Figure 1 The Institute of Statistics' short facade, reconstruction corresponding to the sheet № AM 1997-2-233.

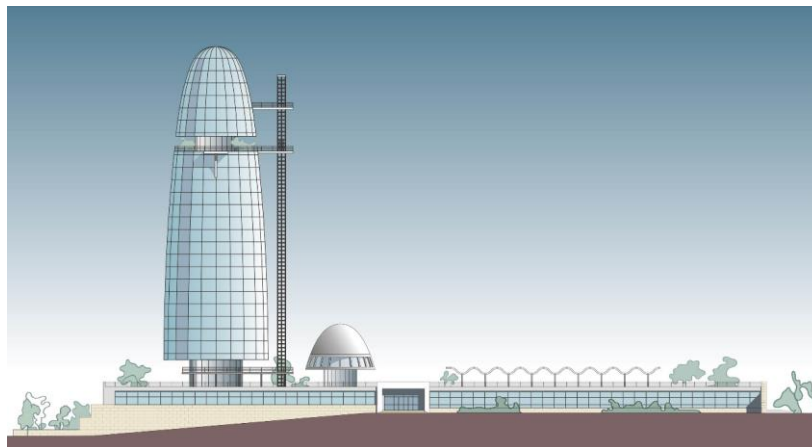


Figure 2 The Institute of Statistics' longitudinal facade, reconstruction corresponding to the sheet № AM 1997-2-234.

Also a brief description and a proposal for the reconstruction of the "Institute of Statistics" appears in the book "Lo spazio cosmico di Leonidov" by Professor Luca Lanini of the University of Pisa, first edition – December 2020 [9]. Professor Lanini bases his reconstruction on polaroid images he received from Moscow (according to the story by N. L. Pavlov, made by the buyer of the facades in the late 70s and left as a souvenir to the sellers). Attention is drawn to the I-shaped shape of the stylobate, which is not confirmed in the newly revealed general plan of Leonidov.

### 3. DISCUSSION AND PRELIMINARY CONCLUSIONS

The publication on Archi.ru dated April 20, 2020 caused a lively discussion on Facebook pages [10].

Doubts were expressed about the new images, which allegedly did not correspond to the "Leonidov style" and offended the tastes of connoisseurs of Leonidov graphic style. The intention of these differences and their necessity was justified by me above and later found understanding.

Professor O. G. Maksimov of MARKHI expressed the following opinion: "Could an architect-thinker and a master of graphic

composition take and put on the podium next to the high-rise volume its almost exact upper part, while maintaining the same design solution?"...) Why, why??? Nonsense!". In his opinion, it calls into question the authenticity of the originals of the Pompidou Center.

Professor E. B. Ovsyannikova of MARHI published the following opinion by Professor N. L. Pavlov, who is closely acquainted with the Leonidov family and specializes in his work:

- "1. Drawn in good faith, but, as always, without a clue...
- 2. In the original, there are really two domes — this theme is still present in the early clubs.
- 3. According to Ira, these two sketches were sold in the second half of the 70s, during the lack of money, when Andrey did not work, to some Dutch... who left two small photos, almost a Polaroid. That's how they got to the West.
- 4. During the preparation of the exhibition for the centenary of Leonidov, I scanned these photos, and they were even published somewhere.
- 5. As far as I know, this is a project of the club-from 1947.

- 6. The project of the Central House of Statistics, mentioned by Adamov in the list of works in our anniversary collection, is not mentioned in the list of works by Alexandrov, it is also unknown to me."

The opinion of Prof. L. N. Pavlov is very valuable as confirmation of the facades authenticity and information about the circumstances of their export from the USSR. However, a number of assessments raise questions: "in the list of works by Alexandrov", that is, in the book of 1972, "Institute of Statistics" is mentioned not only in the list of works, but also in the text [11]. And the avant-garde project with a 20-storey tower is hardly seems as the "club project of 1947".

In my opinion, the argument outweighing the scales in favor of the existence of the "project of the Institute of Statistics" and the authenticity of the Pompidou facades, became the drawing of the master plan of the "house of the CSU of the USSR" in the collection of the Shchusev State Research Institute, number in the State Catalog:6970722. The drawing is signed: "The House of the CSU of the USSR. Competition project, architect I. Leonidov 1930". ("Figure 3")

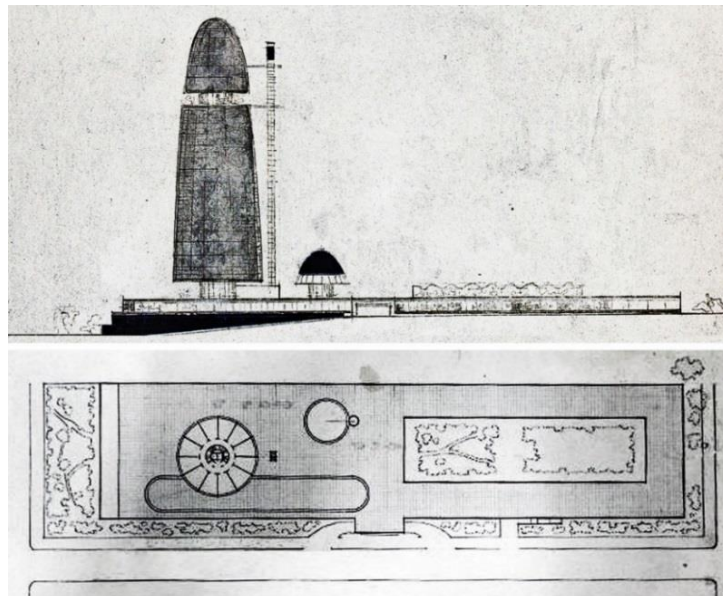


Figure 3 The master plan of the "house of the CSU of the USSR" from GNIIMA (below) fully corresponds to the facade from the Pompidou Center (above, given in the negative).

The master plan is quite consistent with the Pompidou facades. It is hoped that further research will reveal other project materials. To date, we can draw the following conclusion from the discussion: two facades from the collection of the Pompidou

Center are highly likely authentic and belong to the "project of the house of the CSO of the USSR" or the "Institute of Statistics" of 1929-30. Since all of Leonidov's big projects of 1927-31 were competition entries, the "house of CSU" hardly was

an exception. Thus, the very existence of the Leonidov project is the only evidence of the competition for the "house of the USSR CSU", about which nothing was known until now. This is what we will proceed from in our further discussions.

#### 4. THE PROJECT OF THE "INSTITUTE OF STATISTICS" IN THE CONTEXT OF LEONIDOV'S WORK BEFORE 1932 AND THE ARCHITECTURE OF THE SOVIET AVANT-GARDE

The project belongs to the period of the apogee of the constructivist period of the architect's work (1927-31). It is preceded by the project of the "club of a new social type" of 1928, and it is contemporary with the project of the House of Industry and, apparently, a bit earlier than projects for Magnitogorsk and the Palace of Culture of the Proletarian district. The project of the "Institute of Statistics" is undoubtedly of no less interest than any other of Leonidov's famous avant-garde projects. The composition of the institute consists of two parabolic volumes placed on a developed stylobate. Let's analyze the composition of the institute by its elements.

##### 4.1 A Lifted Parabolic Dome on a Stylobate: Projects of the "Institute of Statistics" and "Club of a New Social Type"

The smaller volume is a parabolic dome with a strip of glazing at the bottom, familiar to us from

the project of the "club of a new social type". In general, both projects, with two parabolic volumes similar in shape but different in size, are close enough to consider the "club" a direct predecessor of the "institute". They are united by such a feature as the lifting of the domes above the ground, standing on the narrow base giving the overall shape a mushroom-like character. Another aspect (in addition to the domes), in which the "Institute of Statistics" is a direct development of the project of the "club of a new social type" is the square slab of the "club" stylobate used here for the first time in Leonidov's work (and probably in the history of modernist architecture in general). The rudimentary podium of the "club" in the project of the "Institute of Statistics" is developed into a vast 1-2-storey stylobate with an inner courtyard, on which both parabolic volumes are placed. The scheme, in many respects anticipating the project of the later Narkomtyazhprom. (ссылка удалена)

##### 4.2 The Parabolic Tower: Shape and Meaning

The second parabolic volume, a cigar-shaped tower, is unprecedented in the architect's previous work. Nevertheless, some of its features are present in a number of contemporary Leonidov's tower schemes (variants of the House of Industry). Apart from the characteristic outdoor openwork structures of the elevators with bridges thrown over to the building, the feature common to both is the gap at the upper third of the height. A hyperbolic tower sketch from a notebook of the turn of 20-30 years is shown in a row of Leonidov towers. ("Figure 4") One more common feature in the both designs is a wave-shaped canopy.

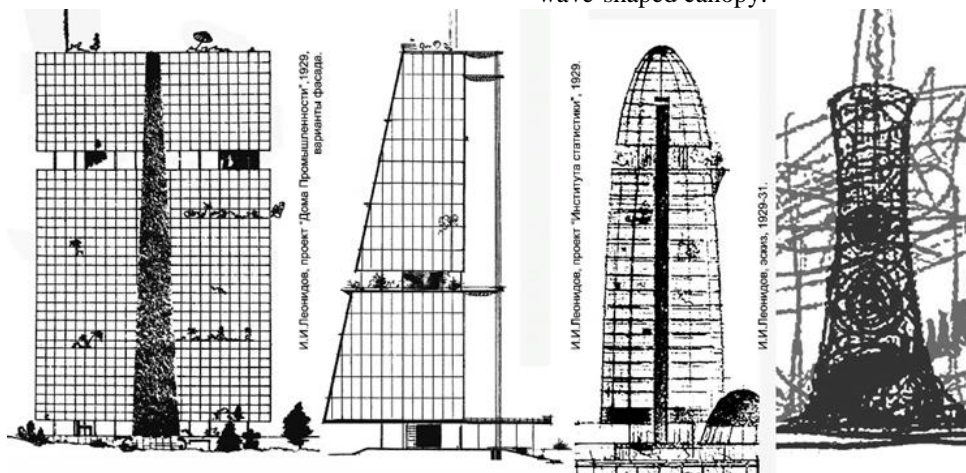


Figure 4 The Leonidov's tower schemes of 1929-30: the House of Industry, two variants, the Institute of Statistics, and the first sketches of the hyperbolic tower.

Reflecting on Leonidov's possible interpretation of parabolic forms, we can make two assumptions:

- The airship

It was in 1929 that the airship appeared in Leonidov's projects, such as the competition entry for the Columbus monument in Santo Domingo. Since this it became a favorite entourage element of Leonidov' drawings. Moreover, it is not difficult to determine which one! A comparison of the images convinces us that this is a Graf Zeppelin LZ-127, built in 1927 and for a long time remained the largest, most modern and fastest. Leonidov also could see this airship "live" during its landing in Moscow on September 10, 1930. So, the desire to liken the tower's shape to the most impressive symbol of technological progress of its time looks logical and plausible.

- The mathematical graph

The addition to parabolas (and then hyperbolas) could also be a consequence of Leonidov's characteristic aestheticization of mathematical curves. What is known from his remark of 1934: "If this curve is a graphic representation of the process of movement ..., it is no longer an arbitrary line, but an admirable graph that carries beauty" [12]. Familiar to us epidemic graphs well illustrate the connection of parabolic curves with statistics. Perhaps for Leonidov both considerations had weight, and here we see an early manifestation of the multi-layered imagery of Leonidov's later projects, first of all - the People's Commissariat of Industry.

## **5. THE "INSTITUTE OF STATISTICS" PROJECT IN THE CONTEXT OF LEONIDOV'S WORK AFTER 1932. "INSTITUTE OF STATISTICS" AND "NARKOMTYAZHPROM"**

Leonidov's work falls into two distinct parts – before and after 1933. And the apparent suddenness of the transition from one period to another, the small number of signs that anticipate this changes, is significantly mitigated by the newly identified project of the Institute of Statistics. The late Leonidov works are characterized by the play of concave and convex forms, which is immanent to both his architectural creativity and furniture design. The formal language of this period and its neoclassical and archaic - Egyptian roots were presented by me in the article [13]. Paired parabolic and hyperbolic volumes of the halls, paired

"convex" and "concave" vases, made us assume a similar pairs of towers. However, the hyperbolic tower of the NKTP project of 1934 still remained without a pair, except for the strange rocket-shaped structure in the project of the "Kolkhoz Club with a hall for 800 seats" of 1935.

The parabolic tower of the Institute of Statistics fills this gap, being the direct predecessor of the hyperbolic tower of the NCTP project of 1934. In the tower of the Institute, we can see in the bud all the features of the famous rostral tower of the NKTP: translucency, the lift carried out to the outside, even the cantilevered podium planned on the facade, the predecessor of the "tree mushrooms" that cling to the hyperbolic tower of the People's Commissariat of Industry. Moreover, in Leonidov's notebooks of 29-31, there are a number of sketches of hyperbolic structures, indicating the temporal proximity, if not the simultaneous origin of both forms

Another feature that brings the project of the Institute of Statistics closer to the project of the Narkomtyazhprom as well as to the project of the "Club of a new social type" is the use of a pair of objects of different sizes of similar shapes – two paraboloids in one case and two hyperboloids in the other. ("Figure 5")

One more feature of the project of the Institute of Statistics, anticipating the project of the Narkomtyazhprom, further developed in the projects of clubs and structures of the Southern coast of Crimea, is a rectangular stylobate with inner courtyard and stepped edges. This in Leonidov's later projects will acquire a distinctly archaic character, addressing us to the ziggurats and apadanas of Antiquity.



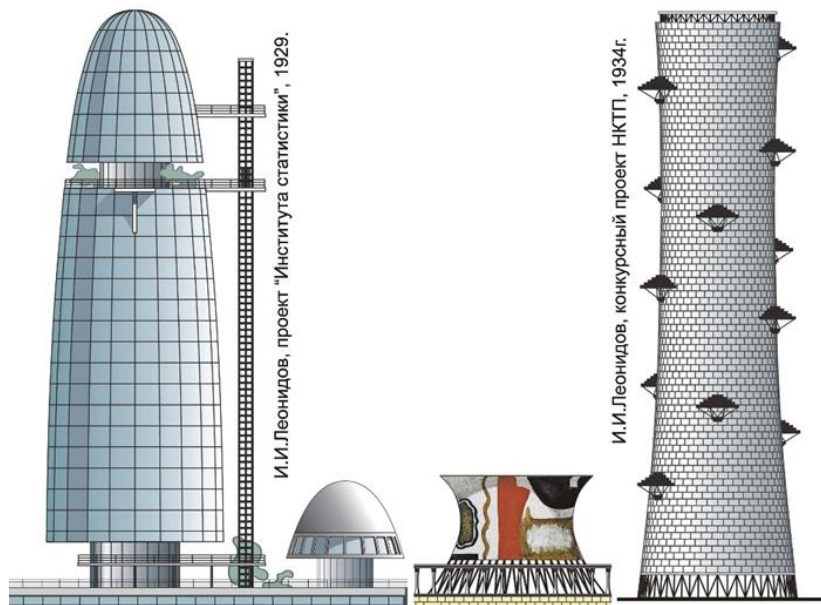


Figure 5 The hyperbolic shapes in the Narkomtyazhprom project as an inversion of the Institute of Statistics' parabolas.

## 6. THE PROJECT OF THE "INSTITUTE OF STATISTICS" IN THE CONTEXT OF THE ARCHITECTURE OF THE SOVIET AVANT-GARDE OF THE 1920S-30S AND THE "MODERN MOVEMENT"

Already S. O. Khan Magomedov suggested the Leonidov's priority in the use of the parabolic dome as architectural form. This priority could only be challenged by Mikhail Barsch and Mikhail Sinyavsky in their Planetarium, but initially they thought of the Planetarium dome as hemispherical. Its final parabolic shape appeared only after 1928, which dates back to the Leonidov project [14]. The parabolic dome in the characteristic Leonidov interpretation was also reproduced by Ignatius Milinis in the competition project of the "Hammer and Sickle" club, 1929 [15]. And perhaps, even by Le Corbusier himself in the competition project of the Paris Palais Tokyo in 1935 [16].

The idea of a stylobate with an emphatically expressive volume standing on it seems obvious to us today, one of the standard schemes for the architecture of the "modern movement". Meanwhile, it, like everything else, has a beginning – and I. I. Leonidov is among the most likely contenders for authorship. The very concept of the stylobate dates back to ancient times and in the first decades of the twentieth century was part of the traditionalists' repertoire. This can easily be seen in

the example of the competition for the Palace of Soviets, in which it is rare among the avant-garde proposals, but common among the traditionalist ones. And it is fixed by the final project. A reservation should be made for the Ginzburg-Gassenpflug project, where the parabolic volume of the great hall is placed on a square stylobate, largely repeating the central complex in the "variant A" of the Leonidov's project of the «Club of a new social type».

Also in the interpretation of the parabolic shape as a multi-storey glazed structure, it is close to the parabolic tower of the Institute of Statistics. Apparently these Leonidov's projects with the Narkomtyazhprom are the germ of all further "volumes on the stylobate" of the architecture of the "Modern Movement".

Leonidov's very interpretation of these volumes, whose shape changes from rectangular prisms to objects of more complex geometry, is also ahead of the world trends. Fully manifested themselves only half a century later. From Oscar Niemeyer's Brazilia National Assembly to Jorn Utzon's Sydney Opera House and many others. Also it could be suggested that the similarity of the parabolic towers of John Foster (St. Mary Axe 30, London, 2003) and Jean Nouvel (Torre Agbar, Barcelona, 2004), with the Leonidov Institute of Statistics tower is not entirely random. The project was exhibited at the Pompidou Center and the mentioned "architectural stars" (or their employees) could hardly pass by.

7. CONCLUSION

The above considerations are summarized in the form of a table in "Figure 6", which shows the

formal-compositional evolution of the Leonidov type of social ensemble. From the project of the Lenin Library Institute, 1927, to the competition project of the Narkomtyazhprom, 1934.

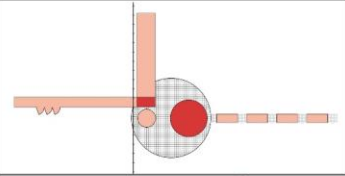
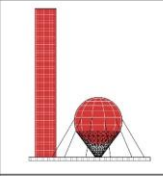
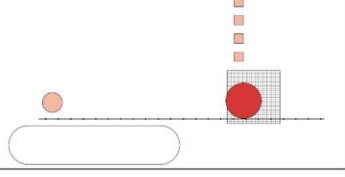
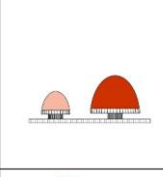
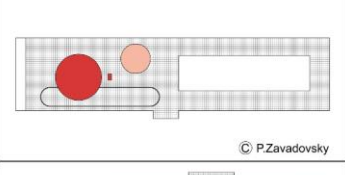
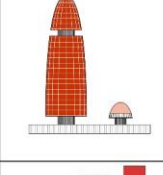
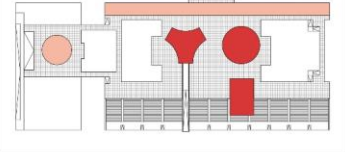
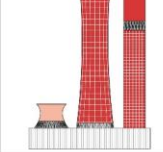
<p>1 V.I.Lenin Library Institute  1927</p>		
<p>2 Club of the New Social Type  1928</p>		
<p>3 Institute of Statistics  1929-1930</p>	 <p style="text-align: right; font-size: small;">© P.Zavadovsky</p>	
<p>4 NCTP building  1934</p>		

Figure 6 The formal and compositional evolution of the social ensemble type in the works of I.I.Leonidov during 1927-34.

- 1. The V. I. Lenin Librarian Institute, 1927: Open composition, developing along the coordinate axes, the suprematistic in its roots. Composed of pure volumes of the simplest geometry - prisms and a sphere. A round terrace, half-cut into the slope is the precursor of future stylobates.
- 2. The Club of a new social type, 1928: The same compositional principles applied to the parabolic shapes. Introduced here by the first time. Bigger of which stands on the small square one-story stylobate also the first of its kind.
- 3. The Institute of Statistics, 1929-30: The stylobate grows and absorbs other elements of the composition. Its prismatic shape gives the composition a accomplished, closed character. The same two paraboloids on the same "legs" as in the Club, but one of them now is an office tower.
- 4. The Narkomtyazhprom building, 1934: Accomplished composition with signs of axial symmetry. The stylobate is the largest and most architecturally developed element

of the composition. The pair of parabolic shapes, the domed hall and the tower, are replaced by their inverted invariants, the hyperboloids of the same function.

So, this "Figure 6" shows the evolution of Leonidov's compositional thinking. This shows the project of the Institute of Statistics as a kind of missing link, important for our understanding of the internal logic of Leonidov's work.

Until recently, the change in the work of Leonidov, which occurred after 32-33, was commonly explained by external political pressure. Now we see that this turn was also prepared by the previous evolution of Leonidov's work.

**AUTHORS' CONTRIBUTIONS**

This paper is independently completed by Peter K. Zavadovsky.



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