

Article

Metamorphosis of the Architectural Space of Goetheanum

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Abstract: In the beginning of the XX century, political, economic, and demographic revolutions contributed to the emergence of extraordinary people. In architecture, they were Frank Lloyd Wright, Antonio Gaudí, Frank Owen Gary, Le Corbusier, Hugo Hering, Alvar Aalto, Hans Sharun, Walter Burley Griffin, and Marion Mahony Griffin. Each of them was given a lot of attention in the media resources and their creativity was researched in different fields of knowledge. However, Rudolf Steiner's work remains controversial to this day. Although many of the architects mentioned above enthusiastically commented on Steiner's architectural works, there was always ambiguity in the perception of this mystic architect. Such a careful attitude to the work of the architect is due primarily to his worldview, his extraordinary approach to art and architecture in particular, because it is in architecture that Steiner was able to implement the basic tenets of anthroposophy, which he founded. The purpose of this study is to determine the content of the spatial structure of Steiner's architecture, which makes it unique in the history of architectural heritage. The authors offer the scientific community the first article in a series of articles on the anthroposophical architecture of Rudolf Steiner and the philosophical concept that influenced the formation of this architecture.

Keywords: Rudolf Steiner; anthroposophy; architecture; Goetheanum

1. Introduction

The beginning of the twentieth century was marked by emotional and intellectual conflicts that have become embodied in new artistic and literary trends and philosophical views. The accumulation of such great ideas, events and their unpredictable consequences put some artists in the spotlight and forgot the others. Among the undeservedly forgotten was the work of Rudolf Steiner, whose philosophy was incomprehensible to mass perception and contained views unacceptable to Christian society because they conflicted with Christian dogma. Rudolf Steiner's architectural creativity must be seen in close conjunction with his outlook. It is through the works of Steiner that one can often learn about the motives of his architectural decisions. Despite the researchers' attention to the Goetheanum, the ancillary structures of the Rudolf Steiner Architectural Complex carry no less important information than the Goetheanum itself, yet remain unaddressed today. For the researcher of Rudolf Steiner's work, the most valuable source is without a doubt the memories of his friends and followers. Among the published memoirs today we can find the memoirs of Andrey Bely [1], Herbert Khan [2], Asia Turgeneva [3],

Margarita Voloshyna [4], and others. An analysis of Steiner's life and anthroposophical doctrine was made in the works of Bondarev G.A. [5], Rudy Lissau [6], and Karen Swassjan [7]. The analysis of Steiner's architectural works in the context of the world architectural heritage is analyzed in the works of Sokolina A. [8–11] and Elena Bogdanovich [12]. An important contribution to the study of Steiner's design work is the dissertation of Reinhold Johann Fet [13], and concerning the architecture of Goetheanum, Fiona Gray [14], Marina Agranovskaya (Emmendingen) [15], and Latief Perotti [16]. David Adams [17], Ionova O.M. [18], and others devoted their research to the Waldorf school. The aim of this study is to determine the purpose of the architectural spatial structure of Steiner's work, which makes it unique in the history of architectural heritage.

2. Main Materials

Andrei Bely wrote about the misunderstood ideas of Rudolf Steiner “who understood Paul's fiery spirit (Apostle Paul), [as] he also understood Steiner: he understood his problem—the problem of the seeds of future unexperienced flowers. He was completely sealed with the seal of fire and a real understanding of the now incomprehensible and modern problem: “thinker”, “scientist”, “teacher”, “yogi”, “magician”, “occultist”, “anarchist”, “crusher of the basics”, “chancellor of the order”, “gnostic”, “cultivator”; and he did not fit into the framework of this literature! Paul was a fidget: and so was Steiner. Thundered that one; and this one rattled. When I read Paul's cry that he was everything for everyone to wake some up, I say to myself: “Oh, I understand; I saw Steiner!”” [1]. Even during his life, Steiner felt the enmity of theologians, Catholics, Protestants, occultists, Marxists, nationalists, and Nazis. There were two attempts on his life and the arson of his greatest creation, the Goetheanum (Figure 1).

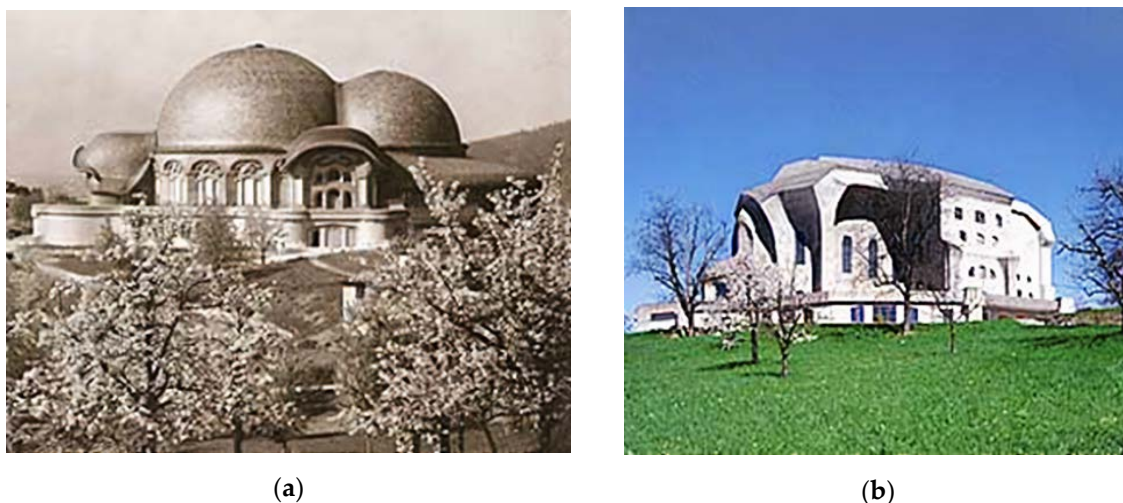


Figure 1. (a) Goetheanum of 1913–1920; (b) Goetheanum of 1925–1928 [19].

Almost 90 years after Steiner's death, his anthroposophical postulates remain as keenly stimulating for ideological opponents. Despite the complexity of the anthroposophical teachings of Steiner, at the beginning of twentieth century, his ideas and doctrines, as well as those E. Blavatsky, A. Aksakov, E. Shure, P. Shenavar, Dr. Papus were popularized in art. V.S. Turchin writes in detail about it, analyzing the situation of the twenties: “Inheriting the doctrines of mysticism, esoteric and occult sciences, alchemy, dreaming of a synthesis of the religions of the West and East, both ancient and new, reading Boehme, Swedenborg, and the founders of the Masonic orders, the artists rushed to a new Theosophy, which at the beginning of the century was reborn into anthroposophy, what A. Besant and her followers spoke of... Theosophy was associated with the artists of the Nabi group and the founder of the Rose and Cross association, Sar Pelladan, members of the Free Aesthetics society in Brussels, and Italian J. Segantini, Odilon Redon, and the young K. Petrov-Vodkin, E. Munch and F. Kupka,

G. Klimt and E. Carrier. A little later V. Kandinsky, N. Kulbin, the brothers Burliuk, K. Malevich, A. Exter, P. Mondrian, and R. Delaunay... “[20].

It was Steiner who became the intellectual source from which Ukrainian cultural figures like L. Kurbas and G. Narbut borrowed their ideological and creative ideas. They organized the circle of “creators and scientists” (Kiev, 1916), where “Steiner’s theories” were studied. The members of the circle were prominent representatives of Ukrainian culture (F. Ernest, M. Zerov, Ya. Stepovyi, P. Tychyna, and others), who later became known as “Executed Renaissance” [18]. The idea of the creation of a new world of Kazimir Malevich was clearly in line with Steiner’s theosophical idea. “The strategy proposed by K. Malevich (for the reconstruction of urban space) was based on the fact that the artist considered urban planning, like all Suprematism, as a promising project for a rationalistic world order, the transformation of the world based on the ideas of universal harmony as Creation” [21].

Steiner’s views influenced the creativity of M. Khvylov, A. Bely, K. Boguslavskaya, M. Voloshin, V. Kandinsky, B. Pilnyak, M. Sobashnikov, V. Khlebnikov, M. Chekhov, and others. The implementation of anthroposophical ideas into architectural forms was continued by Eric Asmussen and Joachim Haider, the Camphill Architects in Scotland, a Dutch architect Anton Alberts, and a Hungarian architect Imre Makovecz. Some researchers [22,23] consider Rudolf Steiner’s architecture to be organic architecture. However, to date, there is no single clear and generally accepted definition of organic architecture, as well as its differences from environmental and bionic [24].

Steiner’s architecture can be talked about from the works of Steiner himself and his followers (about 70 works devoted to architecture). This architecture can be called anthroposophical or Steiner’s architecture, since its primary feature is a visualized idea, and all other characteristics are not minor. They follow the idea and attached to it. The architectural form of Steiner’s building was to contain important information, a matrix of anthroposophical doctrine that would be readable over the centuries.

Steiner himself believed that the correct architectural forms of the artist creates a “larynx for the gods” [25], thus emphasizing the role of architecture in the spiritual development of society. Moreover, such correct forms are present in all buildings of Steiner. The building he was speaking about was Goetheanum (named after a German poet and scholar named Goethe). For the shape of the Goetheanum, Steiner chose the shape of a skull. One of the prerequisites for this choice was the idea of the metamorphosis of the image of man: “The inner unity of all nature is based precisely on the fact that, in essence, everything, even extremely dissimilar appearances, are metamorphoses of one original basic form”. The Lord, or as Steiner calls him, the Wise Divine Authorities of the Cosmos, have created us all in one form, but each of us is transformed, changed according to our chosen path, and the strangers we meet. The skull is this common human form that has become zero in the direct metamorphosis: the process of human materialization, the development of the skull from the spine (common to all people), and after zero when the person becomes an individual in his own form.

In the first Goetheanum, the skull was not clearly defined. The main idea here was expressed by the intersection of two domes of different sizes. In the research of Steiner’s architecture by D. Adams the domes of the first Goetheanum expressed the “union of spirit and matter” [17], and for Latief Perotti [16] it was a demonstration of human essence through images of the frontal and parietal lobes of the brain, the somatosensory and somatomotor cortices (Figure 2).

Analyzing the works of Steiner, we understand: the first Goetheanum is the Universe and the human projection of the world through the senses. Further, not without reason, Steiner presents the domes in different sizes: man is not able to comprehend all the greatness of the universe, which is represented by a large dome, he can comprehend only a small part of it. This knowledge is the personality (smaller dome). The intersection of the domes is also not accidental, like everything in the design and planning of the anthroposophical center in Dornach. Steiner embodies his theory of the origin of races. Man is a divine creation, he comes from cosmic energy, is a part of it, and draws strength from it. He is a product of the universe. He is its observer and participant in great actions. Joining, the contact of two hemispheres, is a direct indication of a common space, which, although invisible, is always present. The world exists because it is reflected in our senses, and our perception of

the world is transmitted into space. The concept of quantum theory and its philosophical applications was perceived by Steiner at the beginning of the twentieth century: "The vitality of our building is expressed in the fact that in some sense one dome finds a consciously displayed reflection in the other, in that both domes are reflected in each other, just as existence of the outside world is reflected through the senses of man" [25]. The double dome is present in many buildings of Steiner. "If there was only one dome, then the essence of our building would be dead".

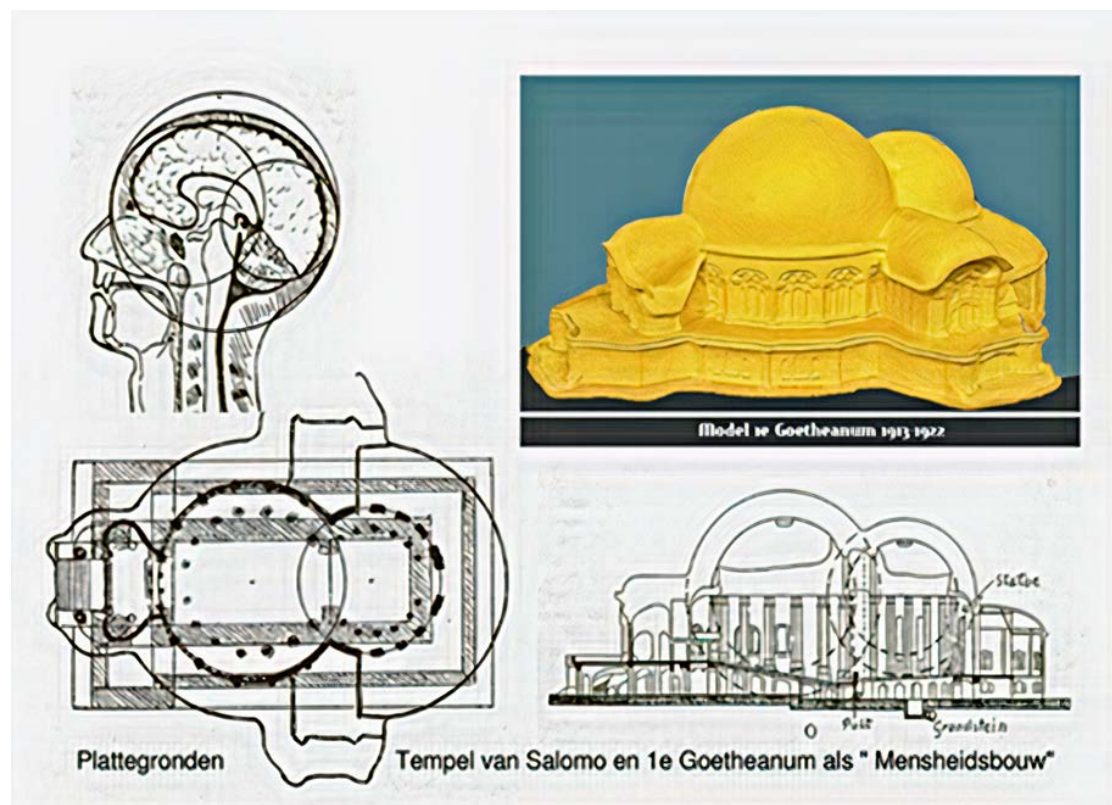


Figure 2. The philosophical structure of the first Goetheanum according to Perotti L. [16].

On the night of 31 January 1923, the Goetheanum was set on fire and burned completely [3]. Since the building was insured for 3.2 million francs, Steiner began active work on the new image of Goetheanum. In addition to the smooth shapes made possible by the use of the latest material, concrete, the new building has acquired a new symbolic meaning.

One can say that Goetheanum of Rudolf Steiner is a continuation of the use of a new material, namely reinforced concrete, in construction, the use of which was invented in Europe by Auguste Perret. In 1904 he built the first residential building in Paris with reinforced concrete, and in 1922–1923 the Church of Our Lady in Le Rennes, which became the first church in France built with reinforced concrete. In 1909 he worked at the firm of Auguste Perret and studied the basics of technical drawing by Le Corbusier. Structure of Steiner's Goetheanum, built in 1925–1928, made entirely of reinforced concrete. Impressive dimensions in differentiated organic design are unique. Steiner was convinced by the advantages of reinforced concrete in terms of fire safety, cost, and its spatial plasticity.

Hermann Ranzenberger, Otto Moser, Ernst Eisenpreis and Albert von Baravalle participated in the design and construction of the Goetheanum as architects/executioners of the project. The first three were already involved in the creation of the Goetheanum in 1913–1919. The Basel engineering office of Leuprecht & Ebbell was responsible for the load-bearing structure in reinforced concrete. Exquisite framework was created by a carpenter from the Anthroposophical Center under the management of Heinrich Ledwogel.

The basic structure with an area of 3200 square meters extends for 90 m in the east-west direction and over 85 m in the north-south direction. The building measuring 72 m by 64 m rises to 37 m in height. The internal space is 110,000 cubic meters, with 15,000 cubic meters of concrete and 990 tons of reinforcement steel. However, the massiveness of the building is only illusory. The building is built of delicate, uninsulated concrete frame structure (separate rooms are insulated from the inside). Reinforced concrete columns and beams are placed with large spacing and concrete slabs 8 cm thick. The walls of the first floor in the west side of the building have a solid thickness of 50 cm. Despite its filigree nature, the load-bearing structure, which is also the skeleton of the building, is extremely strong. The quality of the building is evidenced by the fact that during the first 50 years of operation the bare concrete facade did not require any maintenance whatsoever [26].

It should be noted that Steiner was an esoteric. The esoteric skull has always been regarded as the repository of the soul and it has been thought that the soul continues to live within the skull after a person has died. The human skull is given a special value. In the second Goetheanum, a skull shape is clearly drawn, and domes are no longer dominant in the architecture of the building. Steiner placed all visitors of Goetheanum in their primordial form, in one which, in his opinion, was the ascendant pre-metamorphose point of the people. Having composed the mystery of human creation, Steiner built a concrete skull that was reincarnated with hundreds of souls as spectators of Goetheanum. "The form, writes Rudolf Steiner, is perfect when it is filled with the proper content" [25]. He demonstrates the effect of the metamorphosis of the dead and the living, which occurs with the participation of spectators who are participants in the action. He created what he repeatedly stated in his lectures: "We really must become disciples of the creative hierarchies who have created through metamorphosis, and we must learn to imitate the creative principle of the higher hierarchies in the same way" [25].

Steiner imitates the actions of the higher powers: in the man-made space there is a life that arises through art. Both the actor and the viewer of the Goetheanum become members of the great Steiner mystery. Such a symbolic image could not have been erected just anywhere. The site for sacred structures was carefully selected and researched. Steiner was not able to choose a place for Goetheanum himself. This is why he granted a sacred meaning to the piece of land he owned. Steiner placed the Goetheanum, according to the architect Perotti [16]. The outbuildings were placed within the projection of the Plato Pentacle (ordinary pentagon), and the spiral, according to the Fibonacci mathematical series. The true proportions of this symbol are based on the sacred proportion called the golden intersection: this is the state of a point on any drawn line when it divides the line so that the smaller part is in the same proportion to the greater part as the greater part to the whole (Figure 3). So, when you look from space at the planning structure of the anthroposophical settlement, you can see that Steiner focused on the dodecahedron, which, as a geometric figure, he paid much attention in his work (the plan shows one of the planes of the dodecahedron, the tops of which fix the buildings in space).

The very foundation of the "Corner Stone" was a unification of two copper dodecahedrons, for the 1st Goetheanum of 21 September 1913, consisting of twelve pentagons, was the sacralization of the site. Two united dodecahedrons Steiner laid as a symbol of the indissoluble connection of the universe (macrocosm) and man (smaller dodecahedron) of the microcosm. When Herbert Zoifert writes about the "corner stone" in the Goetheanum foundation, he mentions a document that was placed in a copper vessel. The text corresponds to Steiner's speech: "In the name of the Seraphim, Cherubim, Thrones, Spirits of Wisdom, Spirits of Movement, Spirits of Forms, Spirits of Personality, Archangels, Angels: In the macrocosm, as a microcosm, let man live. Anthropos, represented here also as a twice-duodecimal image of the spiritual world. And inside it the expression of the Rosicrucianism expressing the meaning of our aspiration: Ex Deo Nascimur, In Christo Morimur, Per Spiritum Sanctum Reviviscimus" [27].

Perhaps coincidental is the fact that a physicist from the University of Ulm (Universität Ulm) Frank Steiner, has advanced another version [28] of the Universe structure over the centuries, according to which the latter has the form of a dodecahedron. Thus, it is likely that Rudolf Steiner's feelings,

beliefs, or intuitions prompted him to locate the Goetheanum, which demonstrated the materialization of man on Earth at the center of the dodecahedron (Figure 3), symbolizing the Universe.

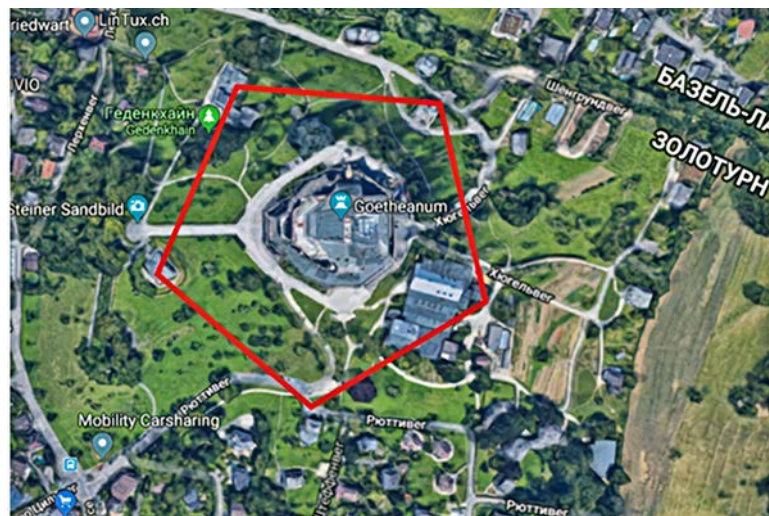


Figure 3. Goetheanum and ancillary structures.

The Universe is invisible and invaluable without the main viewer – the man. The birth of man made the Universe visible as well. By the way, the basic idea of the four anthropic principles proposed by Carter, Hole, Pringle, and others, in the field of studies of astronomical and atomic physics, states that the Universe exists and expands only because it is in us and we observe and understand it. Steiner's understanding of the origin of man and his relationship with the divine influenced his vision of the temple. After all, if the Greek temple, according to Steiner, is the location of the god where no human presence is required, where he is a guest, then the Gothic temple is half the temple. It is incomplete without prayer and human presents. "There is no God in the Gothic temple unless there is a prayer of believers. If it is, it is filled with the divine. The Greek temple is not the house of believers, it was created as a house in which God himself lives, he can stand alone" [29].

Steiner's Temple is a message with information for those who can read, art for those who can admire, science for those who want to learn. However, Steiner with his worldview went far ahead of his time, and therefore was lost from view. The Goethanu, the anthroposophical temple, is not a reflection of the structure of the universe. It is the embodiment of creation of the universe and the evolution of man and his materialization. The main emphasis was on the mission of a materialized person in the world where the Calvary events took place. The Anthroposophical Temple is a language in itself for the disciples in the spiritual science who understand the Universe not only as a great mechanism, but as a living, Spirit-filled organism, a particle of which is present in every human being.

Steiner's creations carry important knowledge, they are filled with symbols and original details, but devoid of symbolic casuistry. Marina Agranowska (Emmendinger) in the analysis of the architecture of the Goetheanum writes that in the account of the building you can see: "the echoes of the organic architecture of the American Frank Lloyd Wright, the roll call with the architectural fantasies of the Spaniard Antonio Gaudi, we see the common with the architecture of quiet expressionism, however the originality and uniqueness of the Goetheanum are undeniable" [13].

However, it should not be forgotten that all these representatives belong to the beginning of the twentieth century, characterized by motifs of organic and bionic architecture, ornaments in the style of modernity. Their contacts, communication could not but affect each other's architectural works. However, an important fact is that each of the architects, and in particular Steiner, contributed something unique to architectural science.

Despite the original dynamic forms, the author's interpretation and the pedantry of the interior first denied the well-known thesis of Louis Sellivan (or Sullivan) that the form follows function.

He did not go along with Antonio Gaudi, who combined the idea, function, and constructive elements. Steiner put the idea above function, and this idea was present not only in the Goetheanum, but also in the auxiliary structures. In order to harmonize the aura of the occult space, Steiner constructed the building of the boiler room in the form of a human spine which symbolized the further evolution of man, or rather his materialization (Figure 4).



Figure 4. The boiler room (1915) [19,30].

If we follow the theory of transformation (metamorphosis) of Steiner, the skull developed in a person from the spine. It is the eve of conscious perception of reality. The skull, which arose from the expansion of one of the vertebrae, became a housing for human consciousness to store information about the Universe. “If you imagine that such a vertebra is expanding, expanding in the way, so that the hole through which the spinal cord passes, because the vertebrae are located one above the other, becomes larger, and the bones accordingly become thinner, and also expanding like something elastic, not only in the horizontal direction, but in other directions, then from these spinal bones a shape arises, which is nothing more than the shape of the bones that make up the shell of our skull. The bones of our skull are, therefore, transformed bones of the spine” [29].

The spine, according to Steiner, is an anatomical element that appeared in humans as a result of his materialization. So, initially, man was a spirit. The effect of human materialization is holistic when operating a boiler room, namely, when smoke rises above a building, giving it life. Important elements of the boiler room are domes that symbolize Luciferic and Ahrimanic in humans: Luciferic, i.e., emotional, provoking killings and wars, aggression, and Ahrimanic, i.e., practicality and calculation. The domes are symmetrical and thus testify to the balance of these two demonic principles, which are alongside of materialized person. Steiner divided spirit of Mephistopheles from Renaissance and Satan from Christianity into two characters who represent two opposite poles of evil in man. Arild Rosenkranz in “The Fruits of Anthroposophy—An Introduction to The Work of Dr. Rudolf Steiner” [31] writes that with the penetration of a true visionary, Rudolf Steiner gave each power an individual shape. In the Goetheanum, these two negatives are shared by a pure soul, very reminiscent of the figure of Christ. Describing the sculptural group of the Gethanum, Arild Rosenkranz concludes that Christ’s own power establishes the right balance in man.

During construction of the boiler room, Rudolf Steiner makes the image presented in the Goetheanum more complicated. Between the two domes that represent sin, he places man, not formed or materialized, but who must already fight for the right to seek spiritual progress. The boiler room resembles female forms in the shape of the sphinx. At the level of the spatial solution of the boiler room, the author presented a large canvas of the spiritual world, according to which the backward, imperfect on the spiritual or mental level cannot find eternity, and always goes into decline. According to Steiner on the Sphinx has not reached perfection on the spiritual level. It has been reborn, and its astral body comes to people in other forms. In his 11th lecture “Egyptian Myths and Mysteries” Steiner writes that, during a sunstroke, “The etheric and astral bodies are freed from one part of the physical body, and these people are transferred to the astral plane and see the degenerate last descendant of the sphinx. It is called by various names. In some places, it is called the midday woman—*Mittags-Frau*” [29]. Midday woman is a well-known character from the folklore of Western Slavic tribes. This is a woman in white clothes who comes to those who do not stop working at noon on the field. As a result, the person receives a sunstroke and, as a rule, can see a reborn sphinx in the form of a woman asking many questions. If the person cannot answer them, the midday woman punishes such a person with severe headache.

The building of the Steiner boiler room is information embodied in concrete forms. It is a ready-made surreal picture of the transformation of a person from a spiritual being into a material being, as well as an image of a soul seeking perfection.

3. Conclusions

The peculiarity of Steiner’s architecture lies in the reproduction of the anthroposophical worldview in the spatial and planning decisions of the Goetheanum building and additional structures. The creation of an architectural complex dominated by a philosophical idea of function.

Rudolf Steiner’s genius is in his unique ability to convey in architectural forms a segment in time and space without having points A and B. Rudolf Steiner captures the image not as other painters do, not as photographers do, he did not convey emotions like music does. Rather, with his art of architecture, he presents to generations a long process and the size of eternity. Steiner looked to the distant future, and he created an architecture that was able to unite humanity through spiritual science.

Steiner’s teachings went beyond classical thinking about architecture. Despite the ambiguous perception of his doctrine and his eccentricity, he forces one to look at architecture as a model for the construction of the universe and the place of man in it.

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