

THE FIRST TRACES OF MODERNISM IN WALTER GROPIUS ARCHITECTURAL IMPRINTS

Oketa Boriçi (Hoxha)

Faculty of Architecture and Urbanism, University of Tirana, Albania,
Email: oketahoxha@yahoo.com

Abstract

This paper consist on a deep analyze of Gropius Modernism. It starts with an interview of Gropius's life, his philosophy, ideology, inspiration and the geographical distribution of his projects. He lived in Germany and USA and designs in both of those places. To know the importance of his projects is important to know at first his client's types and number of competitions that he had participated, moreover won them. Some of his references and inspirations are part of this paper to explain the origin of his projects. He dedicated part of his life and work teaching the students, having his own ideology of teaching. His aim was to let the students free to visualize and find their own solutions for a problem in Architecture. He said: "Architecture begins where engineering ends". Gropius was a functionalist, so it is necessary to explain his style and language of projecting in local building traditions. The paper is focused in his distribution in modernism, most after the World War I. Importance is given to the new terms of: rationalism, standardization, dematerialize in his projects and a deep analyze of the Bauhaus ,as a manifest of Gropius's Modernism, because it was considered the "Style" building of the New Modern Architecture Generation. By analyzing the façade elements, entrance, colors and materials, light and interiors, a wide view of the New Modernism can be seen reflected in Gropius design all of his life. The most of his projects have a simple geometry, made of cubes that intersect into each other, in an asymmetrical way. Geometry is well understood by dramatically cuts of the volumes which can be seen obviously in the object façade. To conclude, this paper ranks its entire project's values specially the Bauhaus, and evident its uses and values nowadays. Gropius mentioned: "Many of the things that seem to be luxuries today will become the norm in the near future". In future approach, this paper could be used as a base for comparison of evolution of New Architecture.

Keywords: *modernism, rationalism, standardization, dematerialization, Bauhaus*

Introduction

Walter Gropius was born in 18 May 1883 in Berlin, from a rich family. He began the school of Architecture in 1903 at Technische Hochschule in Munich. In 1905 he was transferred in Berlin-Charlottenburg and in 1907 Gropius leaved school without a degree, because of military. His work before the World War I made him the father of "New Architecture". Gropius is an example of an extraordinary architect success of a person that wasn't good in drawing, at a time when designing on computer wasn't even known. He was e great teacher, a designer of modern style, an architect that believed on team work. Gropius established Bauhaus in 1919 and directed it for a decade. His first work as an architect was at Peter Behrens's Atelier, as an assistant. He learned from Behrens not only the tools of an architect

but also on how to think on a large context. In that atelier was working also Mies Van der Rohe and Le Corbusier. From 1914 to 1918 he didn't work as an architect because of the War Occupation. After it, Gropius became a member of Crystal Chain that was an important forum, association of architects, for the development of Expressionism. One of his Gropius big ideas was the Bauhaus project with grand vision. In April 1919 he became the director of the Bauhaus with its Expressionist character. After living Bauhaus in 1928, Gropius continued on planning house blocks in his own studio, in Berlin. From 1934 to 1937, Gropius moved to London and worked with Maxwell Fry. At that time he continued writing and succeeded on his book "The New Architecture and the Bauhaus" with an important contribution in International Modernism. In April 1937, he became professor in Harvard University and then Director of the Department of Architecture. In that time he collaborated with Marcel Breuer. In December 1945, he joined "The Architects Collaborative" office. There Gropius designs simple objects by using the elementary geometric forms. He has the merit of the development of Modernism in Architecture in a level that others of his time had not imagined. Gropius died in 5 July 1969, in Boston, 86 years old.

Aim of research

It is important to know the references and the inspirations of Walter Gropius to understand better his projects. Analazing his work is useful to find out many elements and ideas that new architects of nowadays can use in their projects, fitting them in their new contexts. Gropius had his own philosophy and ideologies in projecting in architecture. One of his main concepts was in transforming "technical forms" into an "art form". He called Industry Projects as "Places of labour" where workers could feel comfortable working there, and collaborating to each other. Some of his ideologies in designing were: Expressionism, Impressionism, and Rationalism. It is necessary to find out the clients of Gropius to understand better his designs. They were from all levels of society. He designed for politicians, important fabric owners and even for the masses, the workers, for students and for their masters, public and private. He designed from factories to single family houses. The factories he designed were very sensitive to the workers who work and live there, but some of the private houses owners were somewhere not so glad with their comfortable living because of the heating insulation problems or acoustic insulation problems. In this way this paper can arrive to the positive and negative results of Gropius' work.

Research topics

- **References and Inspirations**

Gropius was of the idea of feeling free in thinking in architecture. When he was the director of the Department of Architecture in Harvard University, he made an article, where has described his teaching ideology. His final aim was to let the students free to visualize and find their own solutions for a problem in Architecture. He said: "Architecture begins where engineering ends" While collaborating with his partners, he inspired a lot from their ideas, for example ,since working with Peter Behrens ,Gropius continued using modern materials and industrial techniques.

America (the mother of Industry) was his Inspiration. Germany, in comparison with the other European Countries was more developed in Industry, but America was the Continent that seemed to develop each day. It had a lot of big projects almost in comparison of Ancient

Egypt buildings. An example of that was the Entrance pylon in the Office Building (Cologne), simple, without many decorations.

Another Gropius Inspiration was the Wassily Kandinsky art, using that in Interior design, more useful in Sommerfeld House, in furnishing decoration, the door, stairs etc.

In some of his project were found the Frank Lloyd Wright or Le Corbusier elements. Sommerfeld House is known for its big deep eaves and horizontally composition of the façade. That was what Wright did in Falling Water House. In the Office Building (Cologne) uses of contemporary elements and evident differentiation in materials were at the style of Wright.

In rationalism designing, he was leaded by some of Le Corbusier ideologies. Even though his models were not as good, Gropius described the Bauhaus Masters' Houses as "machines for living", using Le Corbusier Concept, because of the number of inhabitants in them. However the concepts using by him, were many times misunderstood and his houses were no flexible, sometimes not as successful as Le Corbusier and Adolf Loos models.

- **Philosophy. Ideology**

Some of his ideologies in designing were: Expressionism, Impressionism, and Rationalism. Gropius set contacts to an artist's group of Expressionists in 1918-1919. His participation in this organization "Crystal Chain" illustrates his collective artistic movements occupies that shared the vision of a newly evolving society.

In Torten Housing Estate his ideology was to reduce the rent of the house. That would be possible by combining every simple elements of rationalism in a new model. In Memorial for the Victims of Kapp Putsch is shown the highly abstract orientation of him as an architect. It was a concrete abstract sculpture by the basis of a quick sketch made by Gropius. It was criticized by contemporaries and politicians as an expression of resistance against reactionary.

In 1910, he finished his Program for the Establishment of a General Housing Construction Society on a Unified Artistic Basis) which is known for Industrialization Flats. Since then, the term of Standardization became an important theme in Gropius's Professional life. In 1928, in an essay "Apollo in the Democracy" posted in a book with the same name, he mentioned "The creation of beauty reverberates in a democratic society" (Gilbert Lupfer, 2006) (Gropius, 1968).

One of his known phases: "Only perfect harmony in its technical functions as well as in its proportions can result in beauty".

- **Competitions Participations**

The Modernism Architect, Gropius, participated in many competitions and in most of them, won the first price, but in the most of his projects, he was asked by the object's owners to design for that. Some Competitions:

- *Chicago Tribune Tower* – International competition for Chicago to celebrate its seventy fifth anniversary .Gropius participated in collaboration of Meyer with an asymmetrical tower, in which was shown up the freedom of creating a contemporary model ,a modern impressionism skyscraper, but a model of a gothic style tower won the competition.
- Competition for "*Labour Exchange*" was held in the city of Dessau, by Berlin's building commissioner which was Martin Wagner. Invitations were extended to a limited number of architects of the New Architecture. Gropius was presented with a semicircular object where the term "Forms follow function" have been relatively considered.

- Competition for designing a house model estate with 4000 units (*Dammerstock Housing Estate*) in Berlin – Haselhorsts. Gropius won the first price. There, he saw the possibility of building more economically, improving hygienic conditions by using standard elements and industrialized materials, in a rational architecture.

- **Design Typology**

Gropius was the architect of different typologies of buildings, and not only, but also he designed an airplane skeleton, kitchen dishes, furnishes, non-ferrous metal elements, and memorials like that for the victims of the Kapp Putsch in Weimar. He also designed an automobile, a railroad car etc. He designed not only single buildings but also complexes. The biggest ensemble designed by him was the Graduate Center for Harvard University in Cambridge, Massachusetts. It has a main building and seven dormitories.



Graduate Centre (Harvard University) & the Memorial

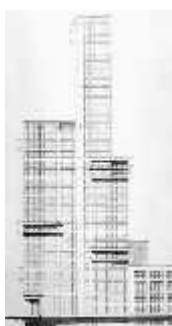
Scientific methods

The first method that is used in this research is analysis. It is important to understand first of all Walter Gropius' life and all his events that took part in it. The analyses started with the countries that he lived, clients he was working for, places where he projected, his concepts, inspirations, ideologies, competitions and then the result of all his projects and buildings realized. The second step that follows this paper is the comparison of his designs with the other architects' projects. Comparing different architects' work it is possible to arrive to some conclusions.

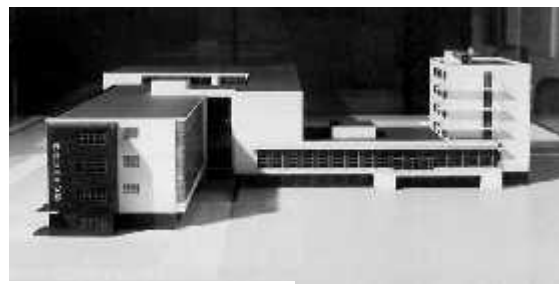
Findings

- **Style and Language**

Walter Gropius' style was without many decorations, ornaments but focused on functionalism and simple geometric forms.



He was a functionalist, whose architectonic style of projecting consisted in emphasizing rational aesthetics, and radical modernism in local building traditions. His aim consisted not only in using useful objects but also in creating aesthetic ones. The main characteristics of his style are: 1) transparency, 2) the emphasis of horizontal elements, 3) monumentality, 4) objective functionality, 5) asymmetrical elements, 6) dynamism and balance between elements, 7) the connection between modern and traditional architecture. For example we can mention the Bauhaus

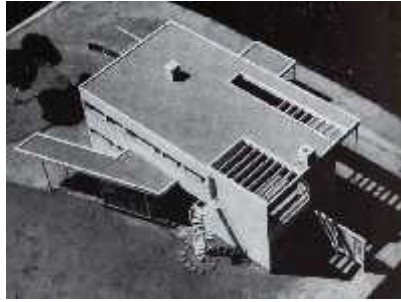


Bauhaus model

functionality, 5) asymmetrical elements, 6) dynamism and balance between elements, 7) the connection between modern and traditional architecture. For example we can mention the Bauhaus

building in which Gropius used an expressionist concept, creates a building with horizontal windows and flat roofs. He also created an asymmetrical massing with open fluid spaces. One of his objectives was to find artistic solutions to industrial buildings to build aesthetic constructions.

Chicago Tribune Tower is an asymmetrically staggered skyscraper, and an example of Gropius's radical modernity. He used the "Chicago windows" emphasizing horizontal elements, and also irregular balconies with a considerate distance from the facade. The composition of the facade is made up of cubic forms and balconies that create rhythm, dynamism and balance between horizontal and vertical elements.



Chicago Tribune Tower

Gropius used the 'White Modernism' which combines cubic forms in the exterior with dark framed windows and white stucco. The Torton Housing Estate is considered to be a new orientation of Bauhaus towards industrial mass production. The building site was constructed as a factory, with walls made of slag concrete blocks and the ceiling reinforced with concrete beams.

Gropius Residence - White Modernism



Total Theatre

We can also mention another important building: the Total Theatre, a multifunctional theatre building, a 'machine' or 'apparatus' in which every contemporary option for staging a play would be available. As a functionalist, Gropius uses rational aesthetics by creating the ellipsoid auditorium with its escalating rows of seats that reflected the external form of the building. The intermediate space between the auditorium and outer skin is also foreseen for access and passageways.



Thomas Glassworks form

The Thomas Glassworks is a rectangular factory complex dominated by a triangular silhouette. At the central intersection there is a glass greenhouse with an exotic botanic character which creates a dramatic counterpoint to the factory building. Another Gropius important project was the Bauhaus archives, planned as a staggered split-level structure because of the terrain, which consists of two parallel wings, set off against each other in descending order.

- **Standardization**

In 1910, Gropius finished his Program for (the Establishment of a General Housing Construction Society on a Unified Artistic Basis) which is known for Industrialization Flats. Since then, the term of Standardization became an important theme in Gropius's Professional life. He wanted to design objects for the masses, of everyday life. That made him use industrial materials and standardized elements. In



Bauhaus and Dommerstock Housing Estate, for example, have been used standardized modular elements such as the size of the windows. Since then, artist-designers had a new problem - limitation of their creations. In 1912, between wars, standardization was a reaction of social problems. The development of standardization concept began in the 1920s because of the housing shortage. Bauhaus master's houses were made of standard elements, as three duplex houses are identical; each half is the mirror of the other half, although one is rotated with 90 degree. Gropius said: "Standardization is the practical processes of everyday life"

- **Rationalism**

Around 1930, Rationalism was an important theme in projecting. In 1933, all the architects were on state control pressure, but Gropius on one hand wanted to feel free in his work and on the other hand wanted to develop functional rationalism. Rationalism in living conditions attempted to solve the social problems of the working class. Mies Van der Rohe organized the Weissenhof Estate, in 1928 where he discussed even some of the Gropius Housing Estates which had shown that social progress's synonym was rationalism. The



Torton Housing Estate

first main example of the rationalist architecture was the Bauhaus. Some others are the Torton Housing Estate and, Dammerstock and Siemensstadt Housing Estates – low cost buildings that serves to the mass (workers).

- **Dematerialization**

Dematerialization in Gropius words, in Bauhaus School, was called the line between inside and outside which creates an imminent launch between the students and their designs. In his architecture, it has been used at Fagus factory building by using glass corners which facilitate the building from its massive construction. Even in furnishing's design is somewhere evident the dematerialization, such as in designing a chair in its minimal existence.

- **Building Entrance**

Gropius payed attention to the building entrances architecture. They are monumental, simple, asymmetric or dominant in the building's project, as they are the first element which links the exterior with interior, the nature with the inner space.

In Fagus Factory, the entrance is at the narrower part of the rectangular, upper than the ground levels, by 6 up stairs. It is emphasized by a simple shelter and rounded corners walls.

In private residences, to give importance to the communication with nature and to the object composition, it was always position in an asymmetric part of the façade. It was a long veranda entrance which, in some projects was covered or closed by glass elements that keep contact to the nature and emphasized the entrance of the building.

From a project to another, the entrance became an important part in the whole building, but it was most influenced by function, such as the Employment Office in Dessau, where 6 entrances are designed and serve to the functional people movement studies.



- **Context and paysage**

Gropius was the architect of New Modernism. He has said that architecture is in development changing, so he did not always pay intention to respect the context of the new building. In Pan Am Building project, in New York

(now MetLife Skyscraper) he did not pay attention to the context, the Park Avenue, and justify with his ideology that the building was not necessary related to the historical site, but it could serve always as a new reference of the future, a new dimension in the Urban Architecture. In another skyscraper, Chicago Tribune Tower, big windows were known as the “Chicago Windows”, representative for that region.

In other objects, such as the house’s design it was taken in consideration the context (materials, other existing objects etc). For example, his residence, in Lincoln, was made of wood construction, typical for that region. Gropius gave importance to nature, the connection between the interior and exterior. His buildings were always in a closer contact to nature. That was realized by using big glazed windows, veranda with wood beams for shadings. Gropius residence was a great combination of the New Architecture, local building traditions and regional specialties.



Gropius residence (Lincoln)

Nevertheless, it is perhaps the most personal structure of Gropius, which maybe is also of a rationalist style. It represented “modern regionalism” which became a further development of the New Architecture.

- **Façade Analysis**

Dynamism, standardization and rhythm are the 3 main terms that could describe Gropius formal façade design. He gave importance in combining different materials especially glass and yellowish bricks or walls painted with white stucco and glass surfaces. There were used ribbon windows which were in contrast with vertical strips of glass bricks that differentiated one building from another in Torten Housing Estate, or were in combination with yellow bricks in Employment Office in Dessau. In some cases, like Siemensstadt Housing Estate, even that there were not used ribbon windows, those of adjacent flats look like a single continued one.

Rhythm was realized by alternating curtain glazed wall façade with brick columns in Fagus factory building for example. There have been used even the rhythm of the supporting steel structure that differentiated floors. Big windows were rounded by an iron cornice which was combined with solid metal panels. Glazed corners in that factory or stairs glazed corners in Office and Factory building (Cologne) gave to them the weightless from the construction.

In private residences, there was a combination of white stucco, uses of cubic asymmetric composition, dramatically cuts, dark framed windows and deep eaves. All of them gave to the house a good perception with a clear contrast.

- **Construction and Materials**

In many factory buildings, the most usable construction was made by reinforced concrete, with walls made off yellow bricks. This construction is located inside the building and is not apparent from the outside. Corners of the building were liberated from load-bearing functions by using glass façade. So, the building seems lightweight and is created the floating effect. That was used in Fagus Factory and even in Office and Factory Building in Cologne.

In other buildings was used the steel structure : a) In combination with yellow bricks (Employment office –Dessau) ,b) Filled in with limestone (Graduate Center- Harvard University), c) as amplifier of reinforced concrete skeleton (Thomas’s Glasswork).

There has been used also the wood construction painted in white that was typical to the Lincoln region, in Gropius Residence (Massachusetts). Typical in Gropius New Architecture

was the uses of the Curtain walls (Glass façade from the floor to the Ceiling and even at three or more floors). That transparent walls that let sunlight and air to penetrate into the building, were combined with metal frames.

- **Light and Interior**

Treatment of Interiors full of light was an important analyze in Gropius projects. The illumination of them was realized by floor to ceiling glass windows (Fagus Factory, Workshop Building in Bauhaus-Dessau, Office and Factory Building in Cologne, living room in Bauhaus Masters's Houses).

Another way of providing light was by uses of the shed roofs and skylights, oriented in North ,that brings diffuse light into the building (Bauhaus Archives,Employment Office – Dessau, Thomas Glassworks – Amberg). In

Bauhaus Archives, they were arched on a side and Vertical to the North.

Interiors full of light needed sun protection in summer. That were realized by using an Overhanging terrace (Gropius Residence) or designing concrete louvers which were alternated with narrow ribbon windows (Thomas Glassworks-Amberg).

This combination creates the Impressionist Architecture with the central motifs' interpretation of Architectural Modernism.



Living room's window of the Workshop Building (Bauhaus) Gropius's Residence



Penetration of light in Fagus factory's building

Interior decorations, furnishings and movement were another point which Gropius gave importance in designing, especially in Residence's Projects.

Conclusions

Gropius was the father of Modern Architecture. He was not an architect but also an ideologist, teacher and philosophies. His value is not on the New Architecture forms, materials, standards but in New Ideologies of planning in Architecture, new terms that haven't been used before like: White Modernism , Modern Regionalism Impressive and Expressionist Architecture.

Gropius projects resisted the time, and bring nowadays modern rules of thinking in architecture, with simple geometrical forms. As he said, "what might seem luxury at a time will be normal to the future, but the art of making a project, in accordance to the masses, is unique".

Bauhaus was the symbol of a New Age in Architecture and it was by the contribution of Gropius not only as an architect but even as the director of it. He developed the International Architecture by planning his residence in Lincoln, Massachusetts. His merit was in planning standardized houses of the rational style for the masses, but even those, are better that what we call "housing" today. The renderings for "tract" housing and for the Bauhaus itself show just how enlightened he was - far, far ahead of his time.

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