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THE SIGNIFICANCE OF DRAWING AND PAINTING IN ARCHITECTURAL DESIGN (AS EXEMPLIFIED BY LE CORBUSIER'S SACRED ARCHITECTURE)

ZNACZENIE RYSUNKU I MALARSTWA W PROCESIE PROJEKTOWANIA ARCHITEKTONICZNEGO (NA PRZYKŁADZIE ARCHITEKTURY SAKRALNEJ LE CORBUSIERA)

Abstract

Looking at Le Corbusier's works one cannot fail to notice how his drawings and paintings transformed into architectural projects to become the foundations for new objects, including the sculpted forms of sanctuaries which have a permanent place in the tradition of sacred architecture. He centered his original ideas on visions of his works which he put down on paper in an unconstrained manner as sketches and drawings. Le Corbusier proved that drawing and painting can be used as support for and in collaboration with the architectural design process in pursuit of an architecture that would satisfy the user's need for aesthetic value and appeal to their senses. He introduced the two into the design process leaving behind abundant documentation.

Keywords: *drawing*, *painting*, *sacral architecture*, *Le Corbusier*

Streszczenie

Przyglądając się twórczości Le Corbusiera, można dostrzec, jak powstające rysunki i obrazy przeistaczały się w projekty architektoniczne, stawały się podwalinami dla nowych obiektów, w tym rzeźbiarsko formowanych świątyń wpisanych na trwałe w tradycję budowli sakralnych. Oryginalne pomysły koncentrował wokół wizji własnego dzieła i bez ograniczeń, przy pomocy szkicu, rysunku, przelewał na papier. Le Corbusier udowodnił, że współdziałanie i wykorzystanie powiązań rysunku i malarstwa w procesie projektowania architektonicznego jako wsparcia w celu osiągnięcia lepszych efektów w dążeniu do architektury spełniającej oczekiwania wrażeniowo-estetyczne jej użytkownika jest ogromnie ważne. Temat ten podjął i wprowadził do procesu projektowego, pozostawiając bogaty materiał dokumentujący.

Słowa kluczowe: *rysunek, malarstwo*, *architektura sakralna*, *Le Corbusier*

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Proficiency at drawing and using it as a medium of communication plays a particularly important role in the architect's work. "Theory, on the other hand, is the ability to demonstrate and explain the productions of dexterity on the principles of proportion" [1].

Le Corbusier proved that the architect's knowledge combines many branches of science and numerous abilities and according to Vitruvius[1]: "for it is by his judgement that all work done by the other arts is put to test. This knowledge is the child of practice and theory (…). Therefore an architect – must have a knowledge of drawing so that he can readily make sketches to show the appearance of the work which he proposes" [1].

Vitruvius' treatise still continues to impact architecture. In his descriptions, he drew particular attention to the importance of drawing in the architect's work. He discussed all drawing techniques from the general composition of the artwork through particular geometric constructions. He made an attempt to define the methods enabling an architect to draw a project with the sense of its form structure. He believed that drawing should be a faithful representation of reality and provide exact information about the designed object [2].

Many outstanding scientists, artists and philosophers from antiquity to contemporary times share Vitruvius' views on the role of drawing in architectural design[2].

The architect Jorge Silvetti[3] considers freehand drawing as a tool for correcting the whole design process and, in his opinion, it plays a fundamental role in architecture since it is the first expression of an architect's vision [3]. Daniel Libeskind wrote "that drawing is not an ordinary invention. The effect of drawing does not derive from its own unlimited sources of freedom. It is a state of experience whereby 'the other' is shown through the mechanisms producing and supporting objective achievements" [4].

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[1] Marcus Vitruvius Pollio, in his treatise *De architectura libri decem,* written between 27 and 23 BC, when a precise method of projecting a solid in perspective did not exist and neither did Pompeian painting styles, repeatedly emphasised the need for an architect to be sensitive to proportions, composition and harmony of particular elements with regard to architectural details, the whole object and urban programs. He thought that apart from projections and elevations, an architect should draw a project in perspective [2].

[2] Villard de Honnecourt, the author of a 13th-century manuscript which served future architects as a basis for perfecting the craft of drawing; he thought that "it was a duty of a multi-talented architect to design various works of art and to provide other artists with their sketches (…). Apart from precise drawings he left behind some advice on the art of drawing ... the principal features (les trais), as the discipline of geometry … requires and teaches them" [15].
Leonardo da Vinci devoted particular attention to perspective drawing. He made a distinction between linear perspective and natural perspective. He complemented Alberti's system –he examined wide-angle view and described arial perspective [2].
Albrecht Dürer, a painter and author of a treatise on drawing based on mathematical and geometric rules. He stressed the need for building a theoretical background for new technical skills of artists: "supporting practical craft with theoretical knowledge is an indispensable condition for an artist to free himself of the limitations of the medieval system. (…) it guarantees high dignity of art and raises the artist to a high level in social hierarchy" [14].

[3] J. Silvetti, professor of architecture at the Harvard University Graduate School of Design , partner at Machado Silvetti & Associates, Boston.

Maria Misiągiewicz claims that nowadays "There is a trend to consider drawings primarily as conveying ideas (…) An architect's drawing mediates between an idea – representation and reality, along the way: idea-drawing-realization. 2. The drawn project is a primary form of perceptive substantiation. 3. The record of the project should justify the decision about its realization. 4. The project is to be a model for the object being erected 5. Architectural drawing records and preserves the form of the structure at all moments when the architect cannot attain the goal he has been striving for, when the object which is a reflection of the architect's idea has not materialized in a real landscape 6. The term 'work of architecture' should be ascribed not only to built objects but also to those that exist in the form of drawings" [5].

The evolution of views expressed by architects and architectural theorists on the need for drawing as a tool in the architect's work enabling him to present the designed objects in a graphic form invariably confirms the opinion that a designer should be proficient at drawing. A sketch and a drawing are indispensable means of communication between designers and contractors as well as a form of presenting the object to the client. They are also basic records of the creative idea and have a significant influence on the aesthetic value of the designed objects.

Drawings by many remarkable modern architects, such as Le Corbusier – a versatile architect, painter and sculptor[4], clearly document the prominence of drawing and painting in the process of architectural design. He believed the architect to be "a man who combines the attitude of an artist with the utility of an engineer. It is a man who ought to constantly look for the finest aesthetic effects in inseparable connection with the most careful consideration of the ever changing needs (…) And what is more? I love colour and composition that takes into consideration the values of terrain sculpture" [6].

Le Corbusier was an ingenious creator of form who was active in many areas[5]. His original ideas, centered on visions of his own works, were put down on paper as drawings. Sketches and drawings ensured him full freedom and were expressions of an emerging concept and examples and forms of an ideal image. "Once he started a sketch, he could elaborate on it for decades thanks to the instinct of a genius artist" [11].

Collections of the architect's sketches and paintings are important documents showing the significance of drawing in designing.

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[4] Le Corbusier's legacy consists of 50 books, 57 built structures and 70 sketchbooks [18].

[5] Aleksandra Prokopska made an analysis of Le Corbusier's design process from the point of view of the latest developments in the field :architectural design elements methodology and system theory. She examined opinions and descriptions of the actual design methods. She concluded that Le Corbusier's know-how originates from design practice and includes many intuitive methods which are efficient in designing; she formulated the hypothesis: "the forms of the architectural works being designed result from, among other things, methodical actions taken in the process of designing" [16].
According to Jencks, Le Corbusier's work is characterized by creative changeability. He had the ability to synthesize and reconcile formal and conceptual opposites, to create similarities between contradictory and diverse forms and concepts. He believed that an architect's task was to create a new language of architecture [18].

Let us examine the phenomenon using as an example religious architecture which has always played a particularly prominent role in the work of architects. "Sacrum (…) fascinates more than pure beauty and at the same time it is more distant, more transcendent, more sublime than any aesthetic sublimity (…)" [7].

Ewa Węcławowicz-Gyurkovich thinks that sacred architecture of today "should also be a carrier of values other than just the ones contained in the Vitruvian triad. Apart from responding to the problems of contemporary man, it ought to evoke emotions and sensations. (…) Every architect who designs a place of worship tries to contain in its architecture the immeasurable values, perceived in the sphere of feelings, emotions and impressions" [8].

In the age of computers and modern transformations of architecture, the forms of Le Corbusier's sacred objects which originated from freehand sketches still make an unforgettable impression on the viewers. Their shapes and plasticity of architecture stimulate emotions and enhance a feeling of astonishment. The mystical darkness and sculptural form of the interiors build an atmosphere and are deeply moving.

The chapel Notre Dame du Haut in Ronchamp (1955) is one of the best known projects by the artist. "It begins (…) a sequence of artworks where an increased role of irrational artistic motifs separates the artworks from the previous artistic and ideological traditions. What links the works of sacred brutalism with the avantgarde modernism movement is the tendency to experiment, hardly restrained by the need to submit to the requirements of the specific function" [9].

The first sketches and notes about Ronchamp are dated June 1950. "July 1950, on a hill. I have been trying for three hours to comprehend the terrain and horizons. I have gradually absorbed them. (…) Ronchamp? Contact with the site, the location of the site, the language of the terrain, words addressed to the terrain. In all the main directions" [10]. On the high hill near Ronchamp where the pilgrimage chapel was designed there were ruins of a bombed church. The sketches from that time show the surrounding landscape and an attempt to translate it into the outlines of a chapel. The drawing of the forms used in the elevations and the horizontal projection of the structure are a result of a dialogue with the surroundings "which contributed to connecting an architectural form with natural conditions" [9].

The architecture of the objects, or rather its first contours, is completely subordinated to the lines of the landscape. While sketching freely and combining specific shapes, the designer learned and discovered the relations with the profile of the natural landscape. Consequently, with the help of drawing – combining the concepts of shapes with specific function of the object – he created a structure opening out to the external landscape. The structure was based on nature and its architecture became a "movement immersed in shapes and persuading one to follow the artistic form, to take a walk forced by natural curiosity" [9].

The nature of the work on the project showed freehand drawing to liberate ideas in search for the forms that had not existed – it was thinking about shaping space, starting form a line on paper and ending with construction. Numerous sketches, notes, studies illustrate the accepted program – a plastically shaped sculpture with rounded elements and no straight lines. The richness of the volume composition – exposed cylindrical tower, long wall with many irregular openings punched in it, sculptural roof protruding upwards – all of them testify to a significant influence of the architect's artistic means. Likewise, the structure of the

interior modelled by the play of natural light draws attention because of the aesthetic values and artistic invention. It is worth noting that Le Corbusier, owing to his interest in painting[6], created his own language of architectural forms in Ronchamp. He expressed it in drawings featuring religious architecture and art.

Like in Ronchamp, influence of painting can be seen in the architecture of the convent of Sainte-Marie de La Tourette (1959), where it is reflected in the deliberate use of texture and colour. The interior of the monastery is filled with light which creates the mood. Le Corbusier gives the light an important role to play by using hues and transitions of varying degree of intensity. The relationships of structural elements and plastic elements with the splendid play of light and shadow reveal a richness of the architecture and demonstrate how seveal kinds of art such as painting, architecture and sculpture can be combined and made to collaborate.

In the pilgrimage chapel Notre Dame du Haut in Ronchamp this is proved by the paintings on glass and the colourful composition of the metal cover of the front door.

Architecture and painting featured strongly in Jeanneret's design since his youth. He used his interest in painting while making a great number of sketches. The content of his works – visions of drawings, paintings, often turned into real architectural objects. This was confirmed by E. Nagy who said that "(…) plastic arts, and painting in particular, were at constant war with architecture. (...) in paintings there slowly ripened architectural forms. (…) he always returned to two-dimensional compositions either in the form of perspective paintings or designs of carpets" [11]. Forms from paintings find their representations in fragments of many objects including sacred art. Many sketches have the composition and rhythm typical of the purist image [11].

The coordination of painting and drawing was very important at every stage of design. Compositions sketched on paper or canvas – drawings or fragments of paintings – clearly determined the development of future architectural forms. In the process of designing a solid, apart from a rigorous cycle of drawing and designing, the artist discoveed specialist techniques of study and synthesis which he supplemented with traditional drawing techniques [16], (Ill. 1).

Linear drawings made in a precise manner as if with the use of a template illustrate the concept of the last and unfinished sacred object by Le Corbusier, the church Saint-Pierre Firminy, France. A perspective drawing of 1963, showing strong, vertical, conical geometry of the church is still admired for its uncompromising shape and conciseness of the symbolism of form. The sketch is an ingenious and succinct representation of the idea of the future church and an excellent graphic and artistic document of the concept put down on paper. Using linear drawing, the architect presented an extravagant yet functional form which shows that

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[6] He was particularly interested on the paintings of Cezanne and Matisse. He studied German industrial design and worked for Petera Behrens; he visited Heinrich Tessenow and became aware of social significance of architecture. In 1917, he moved to Paris and became involved in art. He started painting and won some recognition. With Amedee Ozenfant, he edited the magazine L'Esprit Nouveau and initiated a new movement in modern french painting called purism which allowed him to create his own language of architectural form. In his works, purism was the architecture of image and image became a project [11].

"the power of the idea itself – whether it is expressed in words or as an architectural drawing – is undeniable" [12].

Owing to the commitment of Fundation Le Corbusier and people in charge of the artist's legacy, the object was built in 2006[7]. It remains one of the few examples of architectural objects realized after the author's death.

In conclusion, Le Corbusier's objects of religious architecture such as the chapel in Ronchamp, La Tourette [10], and the church in Firminy, referred to as the most important structures of the 20th century, introduced a new artistic value into the architect's work and modern religious architecture. All of them are distinguished by the monolith of the sculptural shape of the solid which is an image of plastic integrity of the form, function and content. The forms of the churches together with their applications evoke purist movement in painting, a period of fascination with elementary geometric figures shaping not only painting compositions but also architectural forms. The structure of the interiors supported by the play of natural light and darkness is a result of the author's original interpretation and a reflection of the achievements in the art of painting which stormed into modern architecture through his projects. All of the discussed religios objects are distinguished by their plasticity and amazing creativity which "gives works of architecture the power of testimony" [11].

Nowadays, when thinking about architecture has been dominated by computer software and the architect's hand no longer interferes at the design stage between a vision and created reality, a look at the drawings by Le Corbusier and other outstanding architects provides aesthetic satisfaction and an opportunity to reflect on the role of drawing in the process of architectural design.

Le Corbusier is undoubtedly one of the most original characters in modern architecture. He proved that drawing helps to make a fast synthetic record of space. It clearly documents the architect's work demonstrating the assumed programs and definitions. It creates any ideas – regardless of what already exists.

The designer uses drawing to transfer his ideas onto paper which, over time, becomes a precious document. It takes on artistic value and is recognized for its graphic qualities. The ideas presented in the form of drawings or paintings often become foundations for new strategies and original approaches. Above all, painting develops imagination and a way of thinking in artistic terms which is useful in the process of architectural design. It stimulates creativity and sensitivity to form, space, light and colour. It makes possible expression of a personal attitude to the world around us.

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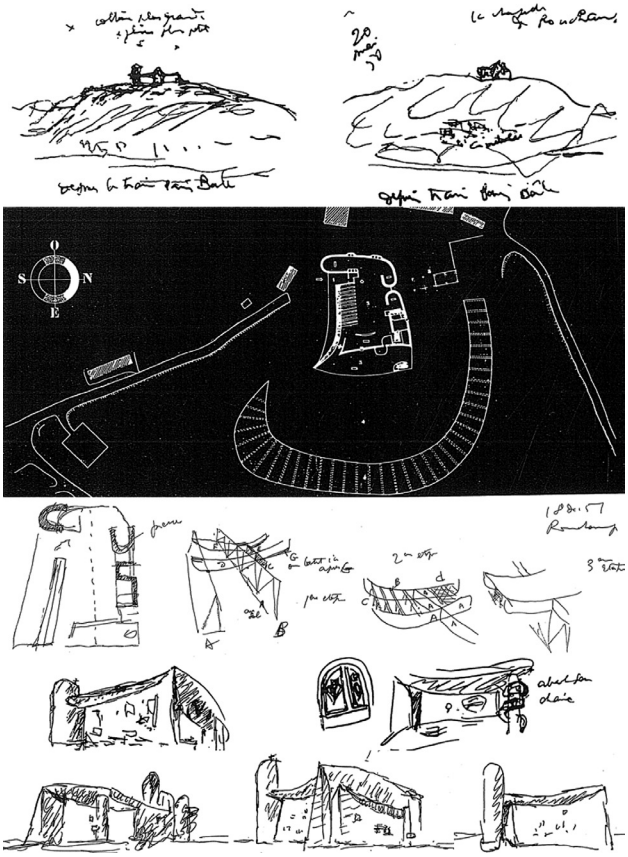
[7] In 1954 r, city authorities of Firminy commissioned Le Corbusiera to design a new urban space of the city with new functions for four basic social activities including worship. Le Corbusier in collaboration with André Wogenscky designed Firminy Vert – „Green Firminy", in line with his idea of urbanism, the city comprised monuments, housing towers surrounded with vast green areas and ensuring proper coexistence of the community with nature and urban structures. The church was completed by the architect José Oubrerie – Le Corbusier's partner, from 1957 until the architect's death. He also made final decisions about the shape of the church and the way it was built [12].

To conclude, in the age of ubiquitous computerization, when the way of thinking about space continues to change together with methods of design and construction of buildings- a hand-drawn sketch or sumptuous study still constitute important elements of the architect's skills. They become indidpensable as a basic means of communication and information transfer. They develop precise spatial imagination which plays an important role in creation of architecture. Drawing is also a unique medium to express the author's personal interpretations and even the most bizarre visions.

It is also worth noting that projects of modern architects have to a great extent been marked by the desire for originality. "For ages, architects with original ideas have focused on the vision of their own creation. Sometimes they set new trends, devise new strategies of action or only claim to do so. More often than not, these are presented in the form of drawing, particularly at the initial stage. Thus, apart from material, built architecture there is non-built architecture and architecture which might never be built but which exists in the form of drawing" [13].



Ill. 1. The chapel Notre Dame, Ronchamp, France, perspective sketches of the form, Le Corbusier, (source: [19])

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