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The role of sketching within the process of creative maturation of an architect in 21st century – sketching from nature in cognitive development

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In the XXIst century, there is a debate whether an architect should practise freehand drawing. This article covers statements about both advantages and drawbacks concerning this activity.

Firstly, sketching remains an universal and timeless medium in cognitive development for artists, due to its engagement with various types of deep concentration at once, such as: practical, theoretical, aesthetic or scientific attention focus. What is more, through the medium of freehand drawing from nature, an architect is introduced to experience natural and build environment, by both reason and physical presence in a setting. In addition to this, there is a strong resemblance of methods within cognitive and creative process of an architectural design.

On the other hand, the concepts of *artistic freedom* and *genius*, which appeared in XXth century, seem to strongly support the idea, that there is a little or no purpose of learning, development, and practise for an artist. Apart from that, recently there happen to be a common belief that manual methods lose their importance in an era of super fast and precise technology or hyper-realistic visualizations and simulations. Freehand drawing fails to reach the standards of the temporary definition of an *ideal*. If other qualities of manual techniques remain unrecognised, such methods

could be abandoned, lose popularity and recognition. These and other controversies concerning freehand drawing are presented and discussed.

In conclusion, to show XXth and XXIst century's approach towards this problem several architectural studios and their methods are introduced. Among many others there are modern architects: Peter Zumthor, Le Corbusier, Louis Kahn, Alvar Aalto and Frank Gehry, that provide numerous examples of drawings, paintings, studies and sketches from nature. Moreover they emphasize the crucial role of manual techniques within architectural design too. To summarise there is a quotation from Alvar Aalto with a remark about this topic: *It is not through simple sketches and superficial similarities that they [painting, sculpture, architecture] influence each other, but through "materia": an intellectual analysis of the chosen material.*

KEY WORDS: sketch, architectural design, XXIst century

1. Introduction: thesis, theoretical and terminological background

The text will take the following theses under consideration: the drawing from nature is a significant instrument of the cognitive technique of the architect; the cognitive technique impacts that design technique; the development of both these areas is the basis of the creative maturation of the architect.

1.1. What is "creative maturity" and how it develops?

Creative maturity is a term defining the individual development of an artist. Ernst Hans Gombrich used this term on numerous occasions[1] while describing art history on the basis of the characteristics of selected artists. To his understanding, the creative maturity would appear after the process of education in school of with a master, and remained as the responsibility of the artist. It is a certain simplification, used to indicate, that creative maturity is a process dependent on internal, rather than external factors, and it occurs on the artist's part.

[1] E.H. Gombrich, *O Sztuce,* Poznań 2016.

1.2. "Disegno" i.e. drawing and design, the common genesis of the concepts

Primarily the Latin term *disegno* was an abstract term, meaning to designate, to indicate, and to direct[2]. During the Italian Renaissance, with the development of the humanities, it was linked to the term "draw", as drawing was no longer treated objectively, but also as a presentation of the creator's intentions. *Disegno* had meant both drawing and design already since the 14th century in the works by Ceninni[3], and in this dichotomous form, it functions in Italian to this day. As an allegory, *disegno* was presented as a figure holding a compass and a mirror[4], indicating the duality of the theory: on the one side, the image, model, while on the other, the idea, the intention. This simultaneous move to the external (to the object) and to the internal (to the subject) is clearly highlighted in the definition of the concept, and it also is the essence of the practice.

1.3. The drawing from nature and the other types of drawing

According to the dictionary, the drawing from nature is the "first realisation of the artistic concept, that is subject to changes in the following development of the work of art".[5] It is such a type of drawing, that aims to record the course of thought of the creator. In painting, sculpture and architecture, this effort, depending on the discipline and the level of precision, has various names: *squizzo*, *study*, *modello*, *bozzetto*, *maquette*. It is the basis of study and work, it is performed swiftly and freely, without too much attention to precision. It allows to make mistakes and to correct them on an ongoing basis. Moreover, the types of drawings are distinguished in re-

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[2] W. Tatarkiewicz, *Estetyka Nowożytna,* Wrocław 1967, p. 233.

[3] Ibidem, p. 42.

[4] Ibidem, il. XXIII.

[5] *Szkic* w: *Słownik Języka Polskiego PWN*, Warszawa 1995, p. 382.

gard to techniques, media, themes, etc. However, in the case of these solutions, the source of knowledge, the origin of the information about the drawn content. On this basis, one may distinguish three types of drawings: from nature, from memory, and from imagination. The drawing from nature is done *in situ*, and its themes may include both nature and architecture, while the technique is essentially freeform (however the artists selection of the technique is not without meaning). By allowing to evaluate the information regarding the drawn object on an ongoing basis, it develops the cognitive technique and constitutes the basis for the drawing from memory and from imagination.

2. Arguments

2.1. The drawing from nature is a significant instrument of the cognitive technique of the architect, as it may operate on varying kinds of concentration

Focus is defined as the concentration of the consciousness on the subject matter. Władysław Tatarkiewicz lists types of focus as the methods of organising knowledge. Primarily, in accordance with the distinction established by Aristotle, there are two basic types of concentration: *practical and theoretical*. The aim of the practical concentration is to, make, transform, preserve or removal, while the theoretical concentration is dedicated to seeing and cognition. Regarding the theoretical focus, there are two attitudes: *scholarly* aiming to the classification, comparison, systematisation, to questions regarding the cause and the aim of the subject matter, and *aesthetic*, in which the subject matter's nature is absorbed directly and substantively. In the latter division, within the framework of the aesthetic attitude, there is a distinction between direct, and indirect contemplation, or, in other words *forms and contents*.[6]

[6] W. Tatarkiewicz, *O filozofii i sztuce*, Warszawa 1986, pp. 167–174.

Possessing the knowledge regarding various types of focus, and their characteristics, we may intentionally select a cognitive method. Adjusting it to our character, and the character of the subject matter, on which we focus, we assume control over the form and the contents of our thought. Each discipline adopts certain codes. The codes of disciplines are recognisable to all, on a certain level, however applying and transforming them in own work require adept knowledge of its elements and principles. Therefore, the multi-aspect cognition, as well as, cognition training, are important and necessary for the work of a professional, including an architect. However the question remains: how, particularly, can the drawing from nature operate on these types of focus? Below, we shall present the selected issues and examples.

First, the drawing from nature allows to operate with various types of concentration within the range of one action. Within the framework of the mental operations, required to create a projection, an image of the object, various types of focus intertwine and complement our information about the subject matter. Intention and purpose, related to creating the drawing, belong to the practical focus. Additionally, it is important, that during the process of drawing, the image that appears on the piece of paper, is a subject of continuous evaluation and judgement. The decision regarding another stroke, are made on an ongoing basis within the context of reacting to own actions. Therefore, it is visible, that cognition is not only related to the object of the drawing, but also of the subject of the drawing person, it is a reaction to both the character of the drawn object, and the temperament of the person who draws it. The dual sensitivity during drawing, regarding the self, and the surrounding world, allows for a conscious, intentional, auctorial choice of the cognitive and creative path.

Second, drawing from nature is an exercise dedicated to various types of focus, as, during the creation of the drawing, continuous analyses and syntheses of the subject matter are performed. These are the two basic logical tasks used in both the humanities and in the natural sciences. Additionally, the skilful use of the aforemen-

tioned, guides us through the process of drawing. Regardless of whether the drawing is performed by composition[7] or construction[8], the passing between the understanding of the general and the particular, and vice versa, expands the range of information about the drawn, learned subject matter. The drawing from nature is a particular visual note from cognition, it aids the architect in recognising form, content, and their mutual dependencies. Additionally, due to drawing, the information defined in such way, functions in our consciousness instantly, without concepts, plastically.

Ultimately, remaining as a physical object in a notebook or a sketchbook, the drawing supports the memory of the creator, allowing him to return to the subject matter. Documenting the considerations is essential from the viewpoint of the complexity of the issues in architecture as a matter located on the crossroads of various different disciplines: visual, social, construction-oriented. Conversations with the great creators of architecture, conducted by means of their works, may last for years. A good example is the collection of sketchbooks of the American architect, Louis Kahn, from his travels to Europe and Africa, filled with drawings of churches, pyramids, villages, as well as, natural landscapes, and mountains.[9] Le Corbusier complements his book titled *Vers une Architecture* with numerous, freehand, models of houses from the ancient Athens, Rome and Pompei.[10] The universal language of architectural solutions, exists in every style and age, therefore, engaging in this peculiar conversation with the past artists if so important. Drawing allows to create copies, to study, and consider the subject matter of both the man-made, and the natural world. Maintaining the continuity in the cognition of various issues, allows to reintroduce a given issue, and conduct further considerations, or, to retract and revise own views.

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[7] By constructing on the composition that was assumed initially.

[8] By constructing the composition of object aas they appear on the piece of paper.

[9] R. McCarter, *Louis Kahn*, London 2005.

[10] C.E. Jeanneret-Gris, *W stronę architektury,* Warszawa 2012, pp. 210–221.

2.2. The drawing from nature is a significant instrument of the cognitive technique of the architect, as it allows to create a record being an interpretation of a sensual experience

In the world of architecture, the sensual experience and the cognition by reason, exist simultaneously. Juhani Pallasmaa, a Finnish architect and theoretician of the 20th century, in his book titled *"The Eyes of the Skin"* writes that the "privileging of the sense of sight over the other senses is an inarguable theme in Western thought".[11] Favouring one sense over the others accompanies many other transformations in culture. However, the reduction of the experience of the world, to the sense of sight, may fragment the complexity of the perception process and isolate from the world.[12] The *somaesthetics* theory, that currently appears in philosophy, raises a similar issue, assuming that our corporeality and its belonging senses are the "indispensable medium for all perception".[13] Richard Shusterman, a philosopher and one of the progenitors of somaesthetics presents the following, three-fold meaning of *soma*, i.e. the intelligent, thinking body, in architecture. In the first aspect, he describes the body as the point of reference for architecture, referring to Plato, Vitruvius, St. Paul, Freud, and finding numerous analogies between the idea of the body of a house or a temple. The second context, is the placement of the body in the very same material space and dimension, as architecture, which results in interpreting mass and the dimensions of the building, in relation to ourselves. Finally, Shusterman finds a relation between the body and the architecture, also within the range of causes and effects of architectonic activity. He describes architecture as a space, which serves the purposes of meeting the need for contemplation, both intellectual, and corporeal.

Drawing from nature encourages multi-sensual cognition, impacts the aesthetic and functional judgements on architecture. Pal-

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[11] J. Pallasmaa, *Oczy skóry*, Kraków 2012, p. 49.

[12] Ibidem.

[13] R. Shusterman, *Myślenie ciała. Eseje z zakresu somaestetyki,* Warszawa 2016, p. 19.

lasma writes as follows: "The live encounter with Frank Lloyd Wright's Fallingwater weaves the surrounding forest, the volumes, surfaces, textures and colours of the house, and even the smells of the forest and the sounds of the river, into a uniquely full experience".[14] The buildings are not isolated works of art, they exist in the atmospheres, sounds, and they react with them. Contemplation during drawing, the focus and the calmness, sharpens senses and increases our cognition. The hands hold the pencil differently in cold weather, and differently in a busy, loud street. The subject matter does not change essentially, however, the body and the mind may be subject to various determinants, which, in an inapparent way, inscribe themselves onto the pages of the sketchbook. It is of essential significance for the cognitive technique of the architect. It reveals, that architecture is not solely an artistic creation, that is separated from reality. The coordination of the project also requires the awareness of the features of the building, perceived by its users or spectators.

2.3. The cognitive technique impacts the project technique, as there exists a synonymity of the issues and the instruments in designing and learning architecture

Drawing is used in design in a way related to the definition of the very term. Palasmaa writes: "design as a process of going onward, and the emergence of hundreds of ideas, during which, partial solutions and details are always tested for the gradual emergence of the solution from thousands of requirements and criteria, from the personal views of the architect, regarding the coordination and harmony, in a complete architectonic, or artistic whole".[15] Testing, searching and change during work on the final solutions are decided upon on the basis of drawings and maquettes.

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[14] J. Pallasmaa, *Oczy skóry*, Kraków 2012, p. 54.

[15] J. Pallasma, *Myśląca dłoń,* Kraków 2015, p. 132.

In cognition and design, the same issues appear, that require analysis and synthesis, and the instrument of their solving is the drawing. Vitruvius writes about the sic basic factors of architecture: *ordinatio, dispositio, eurythmia, symmetria, decor, distribution*.[16] He defines dispositio as the "putting of things in their proper places and the elegance of effect which is due to adjustments appropriate to the character of the work. Its forms of expression (Greek: ideai) are these: groundplan, elevation, and perspective".[17] In the design technique, the architect uses the *disegno* instrument (sketch, drawing, symbol) to determine the *dispositio* of the forms of the architecture. Exactly the same motif may be used in cognition. In result of such a procedure, the technique of the architect, will be more organised and cause-effect oriented. In result of such study and its application, it is possible to consciously develop own technique methods, both cognitive, and design, and to adjust them to the character and the aims of the architect. An alternative for this, is the chaotic technique, with methods picked at random. Then, it is difficult to maintain the course and the results of such a process.

3. Counterarguments

3.1. Discarding technique for the sake of artistic freedom as a trend in the 20th and the 21st centuries. Genius. The theory of discarding technique completely.

A premise exists, that appears in contemporary art, that both the technique and its lack within an artist, is a convention. The main roles of the artist since the 19th century, have been: imitation, discovery, or creativity.[18] With the dogma, developed already in the Renaissance, and based on the love for man, his originality, and individuality, "creativity remains to be the artist's primary function in modern

[16] Witruwiusz, *O Architekturze Ksiąg Dziesięć*, Warszawa 1956, p. 15.
[17] Ibidem.
[18] W. Tatarkiewicz, *Dzieje sześciu pojęć*, Warszawa 2012, p. 318.

times.[19] Its immanent feature is the novelty based on the particular ability, talent, that are impossible to explain rationally. Hence, the *Genius*[20] well rooted in culture, based more on the mystical properties of the person, rather than on the work, technique, or the faithfulness to tradition. In such an attitude, the technique is "often ascribed to activities related to pure production, and its lack, to pure creativity"[21]. With all the aforementioned premises, truly, one may consider discarding technique in general. However, there is no certainty, whether it is possible, or it is purely a premise, a form of a manifesto. Technique, as the "general assortment of methods and needs used by someone in artistic, scientific work, etc."[22] is, by definition, impossible to discard, as we always apply some methods or means. Therefore, one may discard the technique of his predecessors, their way of working, one may also discard the theory of a permanent technique, approaching the new subject matter in new ways. The accompanying uncertainty may be stimulating for many.

However, freedom and creativity, based on such uncertainty, may also exist in a system based on technique. Then it is based on transgressing the technique, or discarding it temporarily, in order to find the right question, or answer to a particular issue. Within the context of architecture, a significant number of artists that constitute the contemporary canon, uses self-confirmed technique methods, and they highlight their importance. Peter Zumthor, a Swiss architect and the winner of the prestigious Pritzker award, shows photos from his studio, filled with miniature models, sketches and drawings. He publishes two books, both describing his original cognitive technique[23], and he acknowledges the essential nature of craft in creation.[24] Another example is Rem Koolhaas, who has an office with two aspects. Its two parts, OMA and AMO are respectively

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[19] Ibidem.

[20] C. Freeland, *Art Theory: A Very Short Introduction*, Oxford 2001, p. 88.

[21] K. Czerni, *Jerzy Nowosielski Sztuka po końcu świata Rozmowy*, Kraków 2012, pp. 118–119.

[22] *Warsztatm* w: *Słownik Języka Polskiego PWN*, Warszawa 1995, p. 614.

[23] P. Zumthor, *Myślenie Architekturą*, Kraków 2010.

[24] P. Zumthor, *Atmospheres*, Basel 2006.

responsible for the design practice, and the research and development of architecture theories. Such combination indicates a deep belief in the common issues at the crossroads of cognition and practice, theory and technique.

3.2. Discarding the manual technique for the sake of the digital technique, with the swift development and the popularisation of digital technologies in the 20th and the 21st centuries. The theory of discarding the manual technique

Digitalisation, as well as, new technologies, gaining popularity in various disciplines, have also entered architecture. Their impact on the technique of the architect, occurs both on the cognitive and on the design level. Within the aspect of cognition, new sources of information are added, such as, e.g. the Internet. The easy access, and the numerous contents, are definitely an advantage. However, the algorithms that manage the processing of information in the Internet, are, firstly, oriented on the most popular search results, and, secondly, as they are a part of the market, they are subject to manipulation. Therefore, as the issues of knowledge, are subject to numerous influences, since the 1970s, more and more attention has been turned towards the sociology, the production, or consumption of knowledge, and the results of these processes.[25] The contents of virtual reality, presenting an increasingly regular source of knowledge, change the entire cognition patterns. However, referring to the new instruments of the author information recording, such as, e.g. digital cameras, their general accessibility is not without significance. The lens, and the software that controls the light uptake, and the camera focus, create a very specific image of the reality. To a person with artistic education, it is one of many ways of recording the image of the world, but not necessarily the best one. It would be difficult to find an objective aspect, in which the photo would be better than a drawing, to a learning architect, considering the various defini-

[25] P. Burke, *Społeczna historia wiedzy*, Warszawa 2016, p. 580.

tions of realism, and various cognitive aims. Moreover, the issue also lies in our definition of perfection, which currently is influenced by the development of modern technologies and their paradigms. Within this context, new theories regarding architectural design appear. Parametrisation and optimisation, as concepts taken from the world of production management, and currently, data management, start to seek out their place in architecture.

In result of the tendencies related to the rapid development of digitalisation, and cultural changes, a reluctance may appear, against the traditional methods and the manual technique in cognition and designing architecture. Drawing, the freehand sketch, without having many advocates, and being considered as an imperfect instrument in the modern definitions of this word, may lose followers, and fade into a cultural obscurity, remaining but an exotic show of unpopular, unnecessary skills. Such statements are based on discarding the manual technique due to not seeing it as a source of potentials, essential in the contemporary world. A premise also appears, that the analogue and digital technique cannot co-exist. However, the reality shows, that these practices, as possessing various methods and aims, may complement each other, as is demonstrated by the American architect from the 20th and the 21st centuries', Frank Gehry. His miniature models created in his studio manually, are first scanned in 3D, then processed in software for construction design and planar optimisation, and afterwards, are corrected manually. Travelling between the real and the virtual world, they are subject to evaluation both by the artist's hand, and by the algorithms of the computer software. One of the icons from the end of the 20th century, located in the Guggenheim Museum in Bilbao was designed exactly this way in the artist's studio.

4. The future questions and Summary

Within the context of the subsequent considerations, a question regarding the future fate of the architect's drawings appear, as they are created and used by the author. On the one hand, we are deal-

ing with raising the drawings to the art status, and organising exhibitions in contemporary art museums. The ability to examine the studies by the preceding artists is not a new phenomenon, as Paul Cezanne's drawings were available for purchase by the centimetre. The adepts of painting would come to his studio, where they could buy a fragment of his drawings cut out from a piece of cardboard or canvas, for study purposes.[26] On the other hand, currently, one may notice the reduction of drawings to commercial objects: a product, a logo, o advertisement materials, as in the case of one of the Warsaw skyscrapers. In turn, another question is, whether drawing is related to an architectonic style, political or market tendencies and the position of the architect in society. Due to abundant monographs, and archive sources, we know that the modernist architects of the 20th century, would draw much, they eagerly organised exhibitions of their paintings, and, as can be seen by their works, they were surely aware of the trends in painting and graphics of their time. Is the situation similar, regarding the context of the postmodernist and new modernism architects, as well as, of styles from previous ages. It would be crucial to conduct further studies and considerations in these directions.

To summarise the subject matter of the article, the discussion takes place on two essential planes. First, whether the architect should draw freehand or not. Second, in result of the former: if we are to draw, then how should we do it, and if not – what would be the substitute? In the above review, the selected potentials and hazards resulting from assuming the first position, have been presented. The universal and timeless potential has been presented regarding the drawing from nature as the means of learning reality. The advantages of drawing from nature, within the range of the autonomy of an individual experience, have been described. An attempt has been made made to respond to the contemporary accusations posed against the manual techniques, within the context of them being replaced by digital methods. The significance of the

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[26] A. Vollard, *Słuchając Cezanne'a, Degasa i Renoira*, Warszawa 1962, s. 42.

responsibility for the process of a creative maturity of the artist, has been highlighted. In order to demonstrate examples, references was made to the technique methods of selected architects of the 20th and the 21st centuries. The permanent study, permanent interest, are a result of trust for the world, the architecture, to the fact, that they contain contents important to us. The instrumental apparatus, used for conducting such studies is based on selected artistic and logical methods, adjusted by the artists to their needs.

It is advisable to raise one more issue. An issue, often raised, and related to drawing from nature, is the danger of the mimetic, simple similarity between the drawn objects, and those that would later be designed. Obviously, the record of shapes and colours from nature, does not translate directly from art, painting and drawing, to architecture. The issue is described in an exceptionally accurate way by the Finnish architect of the 20th century, Alvar Aalto, in his essay titled "*Painting, Sculpture, Architecture*"[27] revealing that the search for architectonic solutions, conducted via the medium of a sculpture or painting, reveal the specifics of the subject matter in a more profound way, allow the intellectual analysis of the subject matter, and to see it in numerous instances. According to Aalto, an architect should be a conductor in an orchestra containing three plastic arts, i.e. by means of graphic description, allow to the issues to occur between painting, sculpture and architecture, as symphonies are played in a dialogue between instruments.

4.1. The role of drawing in the creative maturity of an architect in the 21st century – drawing from nature and the cognitive technique

In the 21st century, there is a debate whether an architect should practise freehand drawing. This article covers statements about both advantages and drawbacks concerning this activity.

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[27] A. Aalto, *Synopsis Painting, Sculpture, Architecture*, Basel 1980.

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