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Prototype Concept in Architecture and Comparative Analysis of Analogical Designs and Imitated Buildings

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Abstract

Archetype, prototype, stereotype are the concepts associated with the type concept, yet they have their own meanings. Especially, defining the border of type between archetype and prototype, and defining the difference between archetype and prototype matters in terms of architectural discussions.

If the need arises to make an architectural-oriented reduction to prevent the incomprehensibility, we can define the archetype as “first concrete ancestral example”, prototype as “first model prepared for industrialized production” and stereotype as “the face of two of a kind produced work taken as a model”. It is true that prototype will gain favour in many areas when it is considered as mass production oriented. However; in architecture, building one building’s lookalike is not only anomalous to architecture ethic but also it is uncreative. In addition to this, many architects designs their works by being inspired by some objects (living or non-living) that are available in nature or by being affected previous movements and architectural approaches. “Analogies” have an important place in parallel with “Mimicking” which is an important step in design process of architectures.

When it comes to Architecture, It is not easy to talk about a fully authentic and an original work, and what is discussed here is the border issue. Every design of architecture gives specific references to its predecessors and includes citations. On the other hand, Architecture exits with a fixed physical context, different from the other design works and gains meaning. This feature makes the lookalike repeat of the architectural work impossible. Same building will gain a meaning in a different context again and will be different from its predecessors or prototype.

In this study, while taking attention to the difference between analogy and imitation, Analogical architecture examples and imitated buildings built in different places around the World will be comparatively analyzed.

Keywords

Prototype, Analogical Architecture, Imitated Buildings

“Everything comes from the Other. Nothing is its own, and can’t be its own.”

Baudrillard

1. Introduction

Archetype, prototype, stereotype are the concepts associated with the type concept, yet they have their own meanings. Especially, defining the border of type between archetype and prototype, and defining the difference between archetype and prototype matters in terms of architectural discussions.

Many architects like Aldo Rossi, Michael Graves, Robert Venturi, Rob and Leon Krier, Mario Botta and Alan Colquhoun have made works on typology and archetype concepts.

If the need arises to make an architectural-oriented reduction to prevent the incomprehensibility, we can define the archetype as “first concrete ancestral example”, prototype as “first model prepared for industrialized production” and stereotype as “the face of two of a kind produced work taken as a model” [1]. It is true that prototype will gain favour in many areas when it is considered as mass production oriented. However; in architecture, building one building’s lookalike is not only anomalous to architecture ethic but also it is uncreative. In addition to this, many architects designs their works by being inspired by some objects (living or non-living) that are available in nature or by being affected previous movements and architectural approaches. “Analogies” have an important place in parallel with “Mimicking” which is an important step in design process of architectures.

2. Prototypes in Design and Imitation in Architecture

2.1. Prototypes in Design

Development of the solutions shape on a wide design method information, a suitable strategy and a solution for the previous one. One of the important component of design information is the experiences compiled from various sources. Importance of a prior information stemming from the experiences which may be similar to the related problem or the information which have been previously defined as standards, has been widely recognised in the studies about design. Foz showed how the discovery of the problem caused the awakening of the solutions that are previously known in the memory [2]. However later, Gero asserts that design information is stocked and is called back in the design process as a series of schema (prototype). There are some parallels between “the templates” of Foz and “prototype concept” of Gero. The elementary idea in all of these approaches is that design is shaped on the usage of a prior information organized to be the basis of design hypothesis and to be used in the construction and understanding of the design problem. However, when it is turned back to the information running, it is seen that an important difficulty has appeared. Design problem is only by definition. If there is already a product that meets all requirements, then there is no design problem by definition. In this concept, questions below are important [3]:

- How can an infinitely many designs be developed from a limited series of prototype? or
- How can prototype collection in necessary number cope with design problems in infinite variety?

It is impossible to give certain answers to these type of questions. However, a part of the answer can be tried to be developed. Shortly, design can only move on new prototypes and strategies that will be developed according to the design problem content [3].

Prototype is an information about what the previous discoveries brought into open and how important they are. Awakening of the prototype in the memory makes the usage of the strategies and relations possible to reach the goals. Even though, prototypes can be used to get some opinions about design from design requirements, they need to be changeable in cases where any solution attempt is unsuccessful.

2.2. Imitation in Architecture

In the rationalization period of ancient philosophy, construction of the idea according to logic principles gained importance; maths turned into geometry; architecture imitated this geometric model; imitation with regular forms and symmetric approaches connected with stems excelled factitiously. In Hellenistic Period, it is obvious that buildings imitated the previous periods typologically; but the glory of Hellenistic buildings showed themselves as a different aesthetics. In the advancing years, because of the beneficiary structure of Roman Culture, art idea stepped into a technical and analytic period. They passed from beautiful to beneficiary and from royal to appealing; building folded into the figurativeness of the power. Architecture history in a way is the description of the genetic structure of architecture and evolution. Imitation exists both in the nature of architectural implementation and education system. Architectural structure, which is seminal and goes beyond this, indicates big tearing, already takes its place in international documentations [4].

When it comes to Architecture, It is not easy to talk about a fully authentic and an original work, and what is discussed here is the border issue. Every design of architecture gives specific references to its predecessors and includes citations. On the other hand, Architecture exits with a fixed physical context, different from the other design works and gains meaning. This feature makes the lookalike repeat of the architectural work impossible. Same building will gain a meaning in a different context again and will be different from its predecessors or prototype. Context forces architectural object to be different and genuine. Therefore, quotations and references face a transformation, which will have a meaning again, in a design which is sensitive to context. The satisfaction level that the transformation reached and the belonging relation with the context detract the product from being an imitation. Being ordinary or copy, repeating, imitating are the attitudes that have negative associations. On the other hand, the border between the original and the fake and the real and the imitation can't always be defined with certain borders [5].

Imitation in architecture can also be a design method consulted because of many reasons. Some of these reasons are to use legitimacy ground of the experienced, to gain production speed and to open

again the meaning and identity value to consumption. On the other hand, sometimes tradition, legal executive restrictions or market expectations force designer to imitation. Here, what is imitated is not a genuine and original work but are the prototypes created in the tradition.

In architecture discussion, "Imitation" concept is mostly used according to language features that determine the finished product's semantic expression. As this can be the direct imitation of other buildings, it can also be the reproduction of some construction components that creates the consumption, signal and identity value, without their own contexts. In this sense, some up-to-date language elements are open to be imitated as well as historical references and local and traditional identity elements. Architecture elements previously signed as identity value have the qualification as an open source. Reference source that is an open and accepted, makes the imitated product easily accepted and consumed fast especially in daily culture atmosphere [6]. However, in architecture, it should not be understood as a process that finishes with an imitation by giving a compulsory references to the derived shapes from the past, its own past and tradition. On the other hand, imitation is not a problem that we face as tradition and historical referenced. Maybe what is more important is the imitation atmosphere which we face the actuality and era conscious. Especially new building typologies imposed by globalization support "impropriety" concept in terms of exclusion of context, it brings some representative values for the union of some building styles and languages with international atmosphere to the fore [5]. On the other hand, imitation takes place in every part of life. It is so natural that human being learned through imitating and repeating. They created languages by repeating voices, created buildings by repeating architecture and elements, created food, clothes and dress and from there, a culture and life style partnership have arisen [7].

None of the imitations can be as beautiful as itself, because it is unique. It has its own geography, topography and climate. Also it is possible to see era, time and hour in it. Which one of them is possible to get in imitation? Gehry put the first stone in the transformation of an industrial city to an art city while building Bilbao. A city lost its identity can identify itself again with a building [8].

3. Analogy, Metaphor and Imitation Comparison

3.1. Analogy and metaphor

Analogy is defined as "similarity between the things that have something in common while having differences in essence" [9]. Analogy puts forward that what are mentioned for one is the same for the other by looking from the similarity between two different things [10].

In architecture, metaphor which is seen as another method using the portions observed in nature and taking mostly the objects in the nature as model, shows parallelism with analogies when viewed from this aspect. However, different from analogy, metaphor in architecture is a method used to reach creativity or create meaning [11].

Analogy is a phenomenon that tells an object or creature with its most calling or the nearest analogue with another concept. Metaphor is a phenomenon that need to create fictions, make various callings to tell the same object or creature [12].

Analogies while being various, here, what we will especially talk about is biological analogies as we think them in the nature utilization. Biological analogy term which can also be defined as organic analogy is a metaphoric comparison related to the art objects and nature phenomenon and is about aesthetical qualities. In this description, it is seen that analogy and metaphor terms are the terms that mingle and are interchangeably used.

Utilization from shape and structures in nature happens through biological analogy. All organic creatures complete their evolution by harmonising with the living or non-living features of their environment. Therefore, a deep-rooted relation needs to be between building and natural environment. While defining organic architecture features, biological analogies have been stated. According to this; it needs to be thought that buildings design should be organic as in nature and be thought as a creature which is in harmony with its own functions and environment and grows according to its individual existence and special order laws like a plant or a living organism [13].

3.2. Usage of metaphors in architecture

Aristoteles is the first person to examine and describe metaphor. According to him, metaphor is the use of a word instead of another word or meaning [14]. About metaphors, many philosophers have stated various explanations since Aristoteles and developed theories. Firstly Lakoff and Johnson have drawn attention to the importance of the intellectual process of metaphors.

Lakoff and Johnson have described the metaphor as the understanding of something based on another thing. According to this approach, metaphor is the understanding of a conceptual area based on another conceptual area [15].

In architecture, metaphors are approached in three ways. There are abstract, concrete and compound, including both of them, uses. Concrete use is directly about shape and is visual method. Abstract use is about concept, idea, humane situation or private quality. Compound use is the most difficult and the most effortful and is the method where the conceptual and visual one overlap [16].

The start of metaphor use goes back to German expressionists and Nietzsche is the source. His work called as "Thus spoke Zarathustra" and full of metaphors deeply affected that days' architect and that resulted with a series of projects that resulted with mountain image. Bruno Taut; in his architecture approach named as "Alpine Architecture" matched the look of the Alps peaks with crystal structuring; important names such as Walter Gropius, Hans Scharoun and Max Taut suggested improvements of idea and presentation techniques with new design and structure methods which were inspired by living and non-living form and structuring of nature [16].

Joseph Maria Olbrich and Otto Wagner were architects using the mountain metaphor [17]. Similarly, also Hans Scharoun used the metaphor of hills covered with vineyards in Berlin Philharmonic project.

Oswald Matthias Unger upholds the power of the metaphoric reference and the architectural greatness of human against nature. He gives prominence to the idea instead of the shape by using metaphors in his works abstractly. Because, according to him, style has no meaning and style is only an ornament added later on. What is essential is "the idea". "A building based on an idea never gets old, because the idea is continuous and is the main factor which helps the building survive" says he [18].

3.3. Evaluation of metaphor and analogy use in inspiration by nature in architecture context

Humankind who started to live as community has started to observe the foundations in nature because of the sheltering need and tried to get information that will be helpful in surviving. By observing the natural form and structures consciously or unconsciously or imitating, they made their first shelter with the use of the materials again got from the nature. In this context, architecture can be called as the first area where "inspiration/learning/adaptation and/or implementation from nature" technique, consulted widely in every area of science today, was implemented [19].

However, when looked through historical process, we can say that this method was restricted mostly with form in the way of interpretation of the patterns, colour and fabric in the nature in facade and mass design or the copy of the decorative elements from nature, different from the first implementation style, in the examples faced especially until the middle of 20th cc. We often run across with the implementations that we can call as stylistic analogy and observed as the transfer of the object form in nature to the building because of the stylistic concerns. In some resources, it is said that analogy is the basic level of metaphor. According to this, concept in the analogy is implemented directly to the design or content without any process [16].

Since the Vitruvius drawings of Leonardo Da Vinci who thought the human body as analogy of the universe's operation, architects have often consulted to the nature to get the inspiration. However, today's designers deal not only with how a marine sponge look but also with how it lives. Science that takes biomimicry or the functions of nature's function and systems as an example, opens up a horizon for the sustainable building forms.

In architecture, another method that uses the portions can be observed in nature and takes widely the objects in nature as model is the use of metaphor. It has definitions like "It is helpful in enlightening the less known subjects based on better known subjects". "The mimesis which we consulted when we try to see an object like something else or we try to give one object as reference to the other." [17]. That's why they have parallels with analogies. However different from analogy, the use of metaphor in

architecture is a method to reach creativity or to create meaning. Because as a definition, it attracts attention by having a narrative and expressional aim and being more about language. However, according to Lakoff and Johnson's expression, metaphor is "a matter of idea and action, not a matter coming from language". Metaphor has a conceptual nature, it is not only about language or speech style but also about reasoning. Counter intuitive, metaphor is not based on similarities (analogies), instead of this metaphor is based on the connections intersecting generally with our experiences and it results in similarities perceived between the two areas within metaphor. Metaphor enable us "to understand an experience type to another" [15].

Metaphors have the capacity to create new meanings so new realities. In this sense, it found a place in art area. Because art is the vehicle to create new realities. In this study, use of analogy and metaphor in architecture have been evaluated within the inspiration from nature context.

3.3.1. Biomimesis concept

In architecture, inspiration/learning/adaptation and/or implementation from nature styles can be embraced in two ways: The first one is the transfer of natural object form to an analogic structure because of stylistic concerns, and the other one is the transformation of the observed formation style (formation process of material, form and structure) into architectural form with experimental datum [17]. Biomimesis concept gains importance at this point.

Biomimesis term is derived from Greek words bios (life) and mimesis (imitation) and is described as "learning through imitation of the best ideas of nature". In different disciplines, this concept appears as "biomimicry", "biomimetic", "biognosis", and "bionic". Biomimicry accepted as a new science branch in engineering and architecture, aims to bring solutions to the problems surrounding with the creativity of nature by examining the models in nature, learning, adapting, imitating or being inspired [20].

'Biomimicry', was embodied by finding voice in the book "*Biomimicry: Innovation Inspired by Nature*" of Janine Benyus firstly in 1997. According to Janine Benyus, animals, plants and germs are perfect engineers, they find what is functioning, what is suitable and the most important what will last in the Earth without corruption. 'Biomimicry', bases on the question 'How will nature solve it?' it is so obvious that natural life presents a wide range of answers; organisms, skeleton systems, shells, skin structures, crystals, web structures, shapes of the creatures that can be seen under the microscope, flowers, trees, stars etc. can be given as examples. Benyus states that we can learn many information from nature and we can see nature as a wide production catalogue. Shortly, she explains an approach in which design is led through inspiration and imitation from creatures of nature. Benyus gives nature three roles in biomimesis description; first one nature as a model, second nature as a measure, third nature as a mentor [21].

Biomimesis is based on the learning process of the sustainable solution ways from nature in the solution of the problems faced both in architecture and in engineering fields. Shortly, it can be defined as the design that imitates some biological phenomena wholly or partially or recalls them.

3.3.2. Biomimesis architecture

Using samples from nature while making architectural designs is a very common method nowadays. Because designs in nature are flawless in every aspect. Every features that need to be in an architectural design like energy conservation, aesthetics, flawless function, durability are in samples in the nature without missing. Even though there are many outstanding systems for people to take as an example, the imitations of them are never as good and practical as their originals.

Lately especially after the period of 1990, the focus of interest to the naturalist information and especially to the information of physics and biology in architecture is remarkable. Recent developments in physics and biology become the common references of designers and architecture theorists such as Zaha Hadid, Greg Lynn, Sanford Kwinter, Jeffrey Kipnis, Charles Jencks, Alicia Imperiale, Ben van Berkeland Caroline Bos (UN Studio), FOA, NOX, Peter Eisenman, Asymptote.

Undoubtedly that, it isn't new that architecture has interest in natural science. Since Vitruvius, architecture has been interested in different images in nature and built metaphorical relationships (Fig. 1). Since 19th century, with the appearance of biology as a science branch and with the improvements of scientific explanations about nature, the previous interest of imitation of nature in architecture has been about the laws explaining nature and scientific explanations. This metaphorical relation built with the

naturalist information has continued till today with different focuses in different periods in architecture history. Naturalist concepts, theories and methods which have revolutionary, innovative, universal and objective features have been seen as the potential sources to find solutions to the problems of their own fields by architects [22]. Since 1990s, in the contemporary architecture universe, naturalist information has been one of the most important sources that has been consulted to create a new architectural language. In this period, it is possible to say that scientific improvements appearing with the last quarter of 20th cc have been taken as common reference in the discourse of the designers above-mentioned who are on the front burner of international architectural media [23]. In this study, biomimesis concept has been taken as the use as an inspiration source in terms of ideas and beyond the absolute shape of the observed ones in nature.

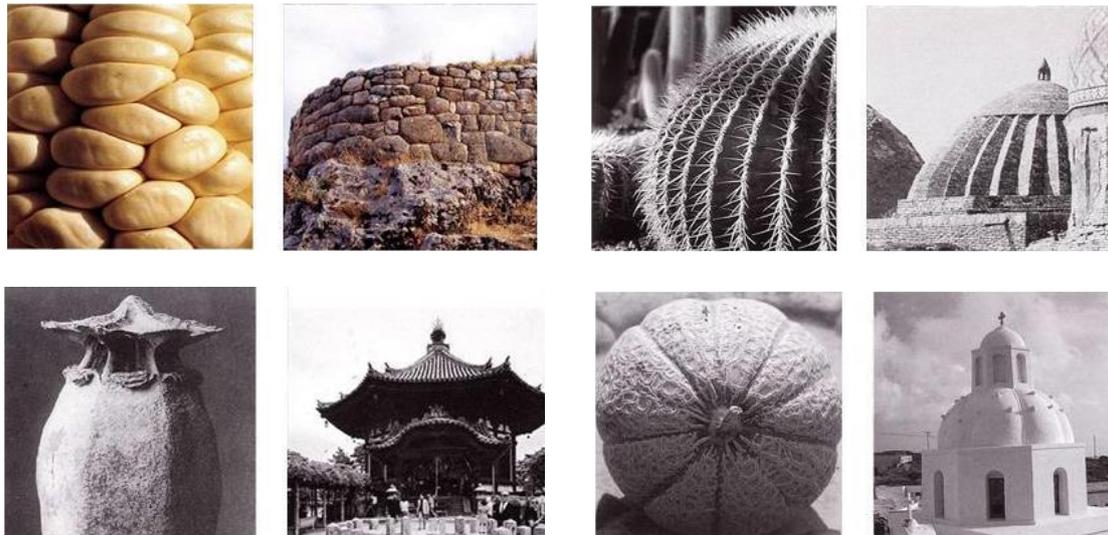


Fig. 1. Samples about Nature and Architecture Analogies [24]

3.3.3. Analogy samples with nature reference

The building in Zimbabwe (Eastgate Centre in Zimbabwe) (Fig. 2) was designed from an inspiration of a termite hill. With the implementation of the self-cooling feature of the hill built by white ants, a sustainable solution way has been developed for the cooling and heating procedure that caused energy consumption in the building. When compared to the same size buildings, Eastgate Shopping and Office Complex makes 10% energy saving [25]. In this context, the building is a successful bioarchitecture sample both because it takes the nature and the mind of nature as a solution technique and because it is as an architectural design which solves the energy location by getting inspired by the nature.

Sponge-like Pearl River Tower (Fig. 3) which has 71 floors and 309 meter height, designed by Skidmore, Owings & Merrill's and completed in 2011, is an award-winning building. Architects, who say that they were affected with the sea sponge in the building's design, took the structure of the sponge that is about taking gallons of water and organisms into itself in a day and they used this idea to consume less energy in their designs.

With its porous structure and turbine houses that provide electricity production from the wind outside, Pearl River Tower remunerates the sponge-like similarity. When you look from the outside, the building resembles sponge and uses the outer air in the ventilation system of the building and so provides energy conservation. In the building, solar energy is largely used and photovoltaic cells have been strategically placed. With this or similar compounds which provide energy conservation, the energy use in the building has decreased 60%. The tower to contribute the energy productivity includes compounds like solar panels, cold ceiling system, double skin curtain walls [26]. In the project being talked about, nature mind has been used.

A conveyor system improved from the nature inspiration is the balloon method used in 1970 Fuji Pavilion (Fig. 4). This system was designed for an exhibition in Osaka in 1970. The building consists of 16 sections, every piece has 4 meter width and has 25 meter average height and the width of the building is 50 meter. In this building air was used as structural conveyor, the system was improved with the inspiration from balloon frog.

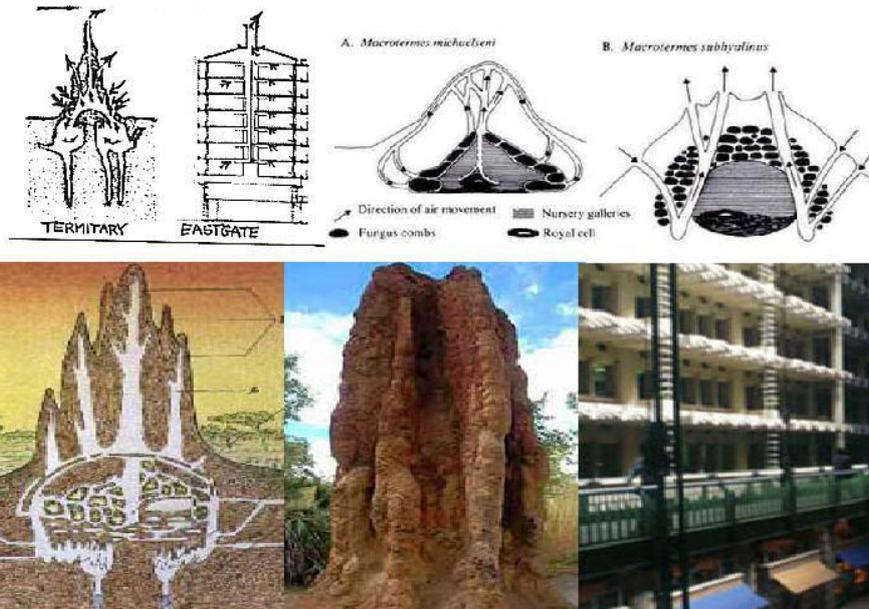


Fig. 2. Biomimicry's cool alternative: Eastgate Centre in Zimbabwe Termites and the Ventilation Principles of the Building [25]

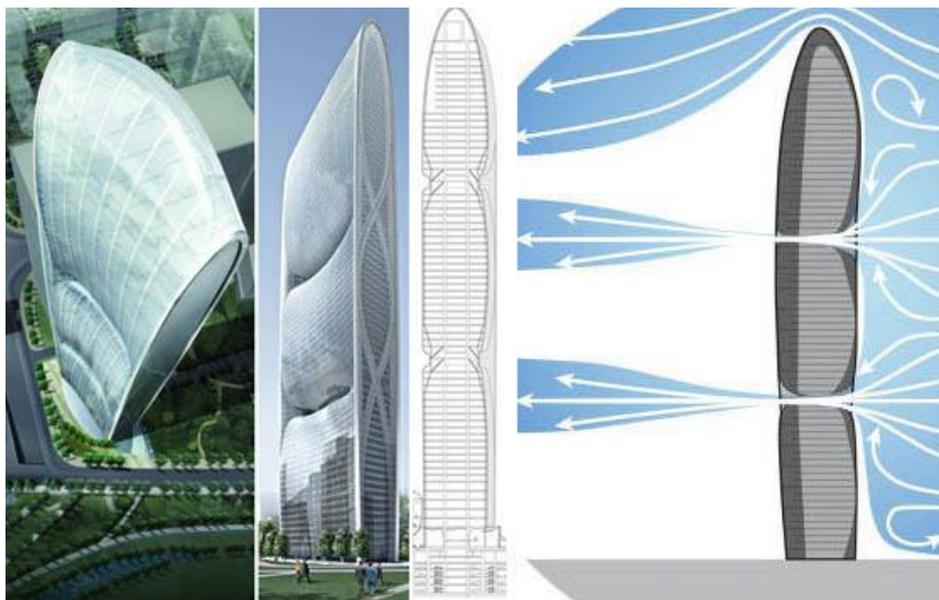


Fig. 3. Pearl River Tower Outlook, Profile and Design Principle [26]

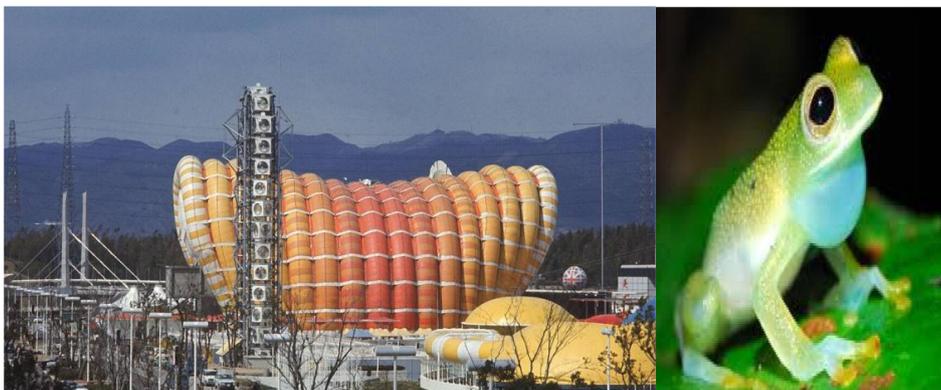


Fig. 4. Fuji Pavilion and Frog [28]

The architect of the building being talked about is Yutaka Murata. What he aimed was in the building was to cover the exhibition area, in which a crowded visitor group would walk and the product belonging to Fuji company would be exhibited, in a light and free cost way. He made his design that direction and used nature. Air sacs frogs were the most affective ones among the creatures he examined and from the air sacs of frogs, he designed an economic exhibition pavilion whose structure was air. Basic principle used in the pavilion designed by the architect was used in many exhibitions and became a predecessor study [27].

Another conveyor system improved from nature inspiration is Munich Olympic Stadium that was built with a spider web model (Fig. 5). Spiders look like a cover put onto the bushes, spreading web is carried with staples hung to the edge of the bushes. This conveyor system enables spider to make his web in a wide area without sacrificing durableness. This method was used by German architect Gunter Behnisch in 1972 in Munich Olympic Stadium which is for 80,000 people. This amazing method was used in many buildings to cover up the top of the wide-span buildings. Jeddah Airport Pilgrimage Terminal, National Athletic Stadium in Sydney, Zoos in Canada and Munich, Denver Airport in USA and Schlumberger Research Centre in Cambridge are important examples that can be called among the buildings having a conveyor system inspired by spider webs [29].



Fig. 5. Munich Olympic Stadium and Spider Web [29]

The wings of the dragonfly is in the thickness of $1/3.000$ millimetre. Even though it is so thin, it is very durable. The reason for this is that their wings consist of up to 1000 parts. Thanks to this divisional structure, the wings of the animal isn't torn and can bear with the pressure while flying. The roof of the Munich Olympic stadium (Fig. 6) was built with the same feature [30].

Crystal Palace in London (Fig. 7), was designed by a greenhouse architect called Joseph Paxton. In this building, Paxton was inspired by a lotus (water lily flower) called as Victoria Amazonica. Even though this type of water lily has an elegant look, it has leaves that are strong and big enough to carry people on them. When Paxton examined the beneath of the leaves, he realized that they were supported

with a rib-like structure. There are threadlike extensions starting from the centre of the leaf and spreading around. Gap of these extensions are supported with a thinner and cross-over pattern. Paxton identified the rib-like structure in water lily leaf with iron girders and he identified the main pattern of the leaf with glass. Therefore he succeeded in making a durable building roof from glass and iron but at the same time light and wide area covering [30].



Fig. 6. Dragonfly Wing and Munich Olympic Stadium

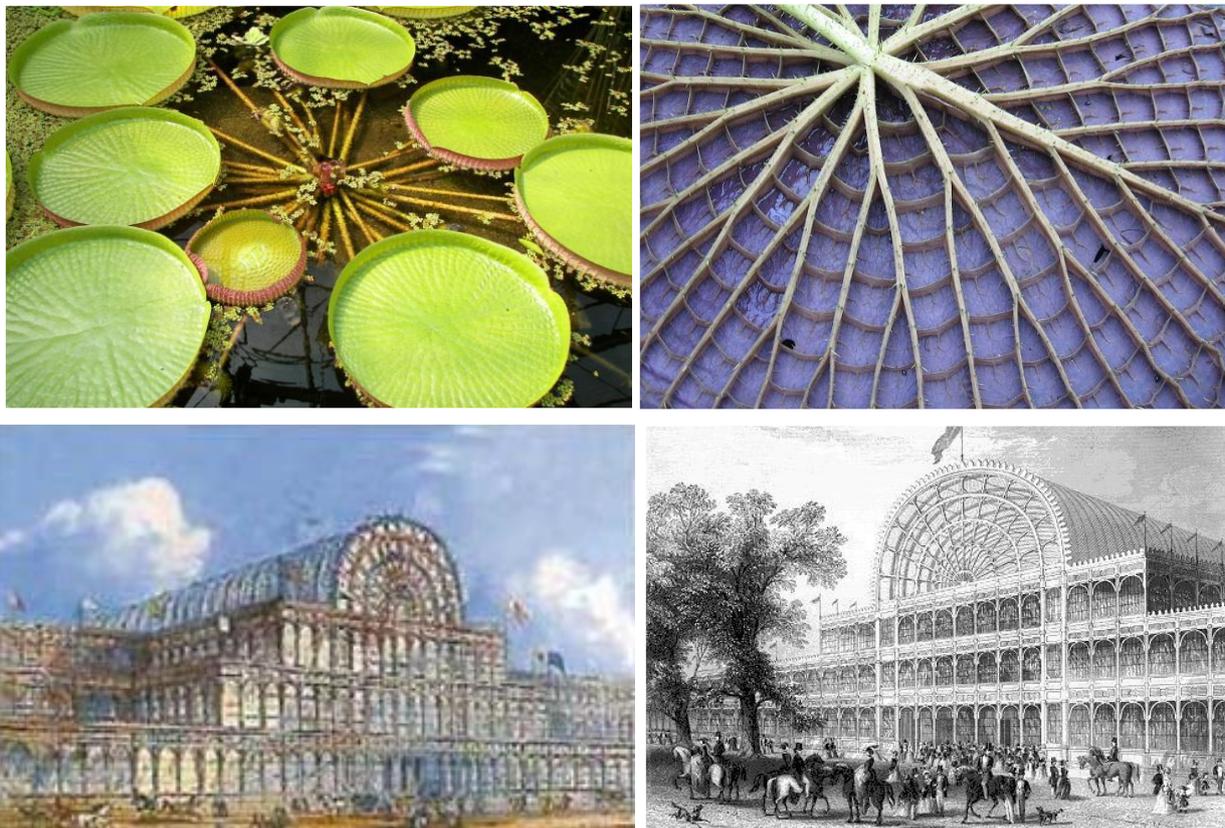


Fig. 7. Victoria Amazonica and Crystal Palace in London [30]

As we can see from the conveyor system examples inspired by nature, nature presents unlimited solution samples in structure design area. It is possible to enrich these type of examples with shell designs inspired from egg shells and light steel conveyors inspired from the leaves of stadium.

3.4. Imitated Buildings

Besides creative nature referenced architecture samples, there are also imitated buildings/structures which are repeating, far from creativity and authenticity around the world. In this part, imitated buildings have been stated through photographs gathered with a literature search. (Table 1-3).

Table 1. Imitated building/structure samples

ORIGINAL STRUCTURE AND PLACE	IMITATED STRUCTURE AND PLACE
 <p data-bbox="248 573 715 600">WHITE HOUSE, WASHINGTON, USA [31]</p>	 <p data-bbox="912 573 1324 600">WHITE HOUSE, ATLANTA, USA [31]</p>
 <p data-bbox="312 898 651 925">EIFFEL TOWER, FRANCE [31]</p>	 <p data-bbox="932 898 1300 925">EIFFEL TOWER, LAS VEGAS [31]</p>
 <p data-bbox="213 1245 750 1272">HALLSTATT, SALZKAMMERGUT, AUSTRIA [31]</p>	 <p data-bbox="919 1245 1321 1272">HALLSTATT, LUOYANG, CHINA [31]</p>
 <p data-bbox="293 1574 678 1601">COLLOSSEUM, ROME, ITALY [31]</p>	 <p data-bbox="874 1574 1369 1601">COLLOSSEUM, VANCOUVER, CANADA [31]</p>
 <p data-bbox="188 1899 775 1926">LOUVRE MUSEUM ENTRANCE, PARIS, FRANCE [31]</p>	 <p data-bbox="810 1899 1433 1926">LOUVRE MUSEUM ENTRANCE, TIENSIN, CHINA [31]</p>

Table 2. Imitated building/structure samples

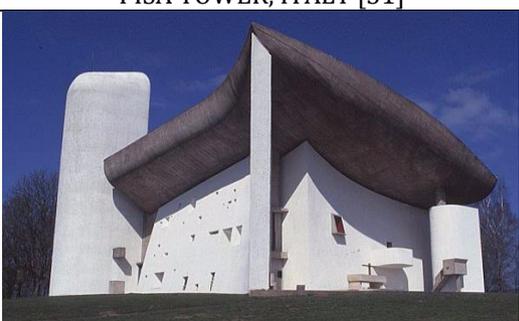
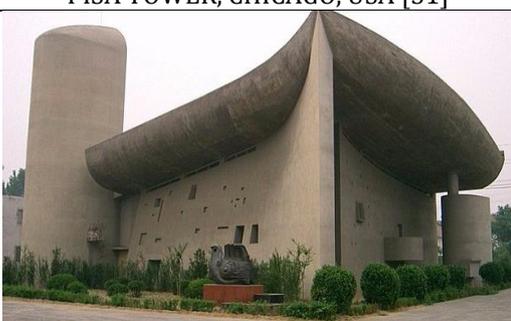
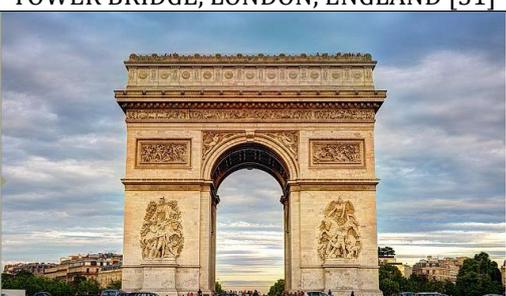
ORIGINAL STRUCTURE AND PLACE	IMITATED STRUCTURE AND PLACE
 <p data-bbox="272 580 692 607">EGYPT PYRAMIDS, GIZA, EGYPT [31]</p>	 <p data-bbox="911 580 1331 607">EGYPT PYRAMIDS, DUBAI, UAE [31]</p>
 <p data-bbox="212 920 750 949">NIEUWE VAART, AMSTERDAM, HOLLAND [31]</p>	 <p data-bbox="884 920 1356 949">NIEUWE VAART, SHANGHAI, CHINA [31]</p>
 <p data-bbox="272 1263 692 1292">PARTHENON, ATHENS, GREECE [31]</p>	 <p data-bbox="911 1263 1331 1292">PARTHENON, NASHVILLE, USA [31]</p>
 <p data-bbox="336 1619 625 1648">PISA TOWER, ITALY [31]</p>	 <p data-bbox="927 1619 1311 1648">PISA TOWER, CHICAGO, USA [31]</p>
 <p data-bbox="188 1962 774 1991">RONCHAMP CHAPEL, HAUTE-SAONE, FRANCE [31]</p>	 <p data-bbox="847 1962 1390 1991">RONCHAMP CHAPEL, ZHENGZHOU, CHINA [31]</p>

Table 3. Imitated building/structure samples

ORIGINAL STRUCTURE AND PLACE	IMITATED STRUCTURE AND PLACE
 <p data-bbox="233 580 729 607">STONEHENGE, WILTSHIRE, ENGLAND [31]</p>	 <p data-bbox="919 580 1319 607">STONEHENGE, VIRGINIA, ABD [31]</p>
 <p data-bbox="301 911 663 938">TAC MAHAL, AGRA, INDIA [31]</p>	 <p data-bbox="892 911 1350 938">TAC MAHAL, AURANGABAD, INDIA [31]</p>
 <p data-bbox="237 1256 727 1283">TOWER BRIDGE, LONDON, ENGLAND [31]</p>	 <p data-bbox="900 1256 1342 1283">TOWER BRIDGE, SUZHOU, CHINA [31]</p>
 <p data-bbox="248 1621 708 1648">ARC DE TRIOMPHE PARIS, FRANCE [31]</p>	 <p data-bbox="868 1621 1366 1648">ARC DE TRIOMPHE, JIANGYAN, CHINA [31]</p>
 <p data-bbox="272 1980 692 2007">MANHATTAN, NEW YORK, USA [31]</p>	 <p data-bbox="911 1980 1331 2007">MANHATTAN, YUJIAPU, CHINA [31]</p>

4. Conclusion

When we talk about imitation in architecture, what is imitated is sometimes image, shape or sometimes function. Newly designed thing has an economic value in addition to its material existence because there is an effort on it. In imitation the effort of the artist was is stolen at the same time. However; in inspiration, the affected image identifies itself again according to the features of the object by going through the brain filter. In object-subject relation, subject plays an active role.

Architecture has mostly been tend to imitate nature. In terms of creating similarity with the thing in nature, analogic study in architecture is full of references about shape and biologic function. Humankind has taken the nature as guide and used natural structures and forms in their designs. As well as being an approach continuing since Classical Period, it needs to have a new dimension. It is important to create designs that use every opportunity of science and technology but which go beyond the effective energy use concept according to the principles which take place in biology based scientific theories and which can show changefulness and reactivity in benefit with the environment.

As you can understand from the examples given in the paper, as nature referenced analogies are made not only stylistic but also structurally, wholly creative and genuine buildings appear. However, building a structure in a different place which already exist in somewhere else, is not ethic and authentic. In this situation, it is not possible to talk about a creative architecture. That's why emulation in architecture should be distant from imitation and it is important to have a new design with a new experience.

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