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THE AFFINITY OF ORGANIC FORMS IN AVANT-GARDE ART AND CONTEMPORARY ARCHITECTURE

POWINOWACTWO FORM ORGANICZNYCH W AWANGARDZIE I WSPÓŁCZESNEJ ARCHITEKTURZE

Abstract

This paper is an analysis of the impact of art, from the circle of organic expressionism and organic abstraction, on contemporary architecture characterized by organic form. The scope includes examples of modern architecture created in the 21st century. The point of reference are works of art from the time of the avant-garde and its successors, mainly from the first half of the 20th century. The studies were based on analysis of the form of selected architectural works and corresponding works of art. Forms similar to those known from avant-garde art appear in many works of contemporary architecture. Architects themselves often admit to such inspirations. One of the more popular trends in contemporary architecture, that has its roots in art, is the trend of organic forms. The summary presents the conclusions on the impact of avant-garde art on contemporary architecture.

Keywords: avant-garde, expressionism, organic abstraction, contemporary, architecture

Streszczenie

Artykuł przedstawia analizę wpływu sztuki z kręgu ekspresjonizmu organicznego i abstrakcji organicznej na architekturę współczesną cechującą się organiczną formą. Zakres obejmuje przykłady dzieł architektury najnowszej powstałych w XXI wieku. Punktem odniesienia są dzieła sztuki z czasów awangardy i jej następców, głównie z pierwszej połowy XX wieku. Przeprowadzone studia oparte zostały o analizę formy wybranych dzieł architektury i odpowiadającym im dzieł sztuki. Formy znane z twórczości awangardy widoczne są w wielu dziełach współczesnej architektury, sami architekci często powołują się na takie inspiracje. Jednym z bardziej popularnych nurtów współczesnej architektury posiadającym swoje korzenie w sztuce jest nurt form organicznych. Podsumowanie przedstawia wnioski dotyczące wpływu sztuki awangardowej na współczesną architekturę.

Słowa kluczowe: awangarda, ekspresjonizm, abstrakcja organiczna, architektura współczesna

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1. AVANT-GARDE ART AND CONTEMPORARY ARCHITECTURE – THE AFFILIATES OF FORMS

More than a hundred years since its creation, avant-garde art is a constant source of inspiration for artists but also for architects. “But far from the avant-garde disappearing as an active possibility after its destruction by the combined counterrevolutionary forces of racism and Stalinism at the end of the 1939s, it has remained a compelling pole of attraction for artists since 1945, and, as such, an unyielding source of artistic re-adaptation and re-theorization”². Contemporary architects share similar aspirations with avant-garde artists; they constantly look for new forms, get inspired by new technology, science, follow visions of the future; development and modernity. There is a freedom to use avant-garde-like artistic tricks and techniques in contemporary architecture; shock, expression, collage, contrast. The emergence of avant-garde was combined with use of all artistic motives, and rejection of styles. The use of art as inspiration, as well as postmodernist quoting classicism, is the result of a process initiated in avant-garde. The affinity of contemporary architecture with the avant-garde is closest in the formal field; inspirations, transpositions, adaptations. Avant-garde art is treated instrumentally by contemporary architects as a source of formal ideas for creating new architecture. Quotes are so obvious that in some implementations you can simply find their formal counterparts among designs, sculptures or paintings from the beginning of the last century. One of the trends that emerges from contemporary architecture is directed towards organic forms similar to those found in works of art from the circle of expressionism or organic abstraction. At the turn of the 20th and 21st centuries, buildings of famous architects got more and more bizarre and spectacular shapes. “The creators of architecture strive for originality by creating decomposed forms, demonstrating the tendency or pursuit of abstraction or dynamism, or speak in an extremely poetic language, based on a set of personal and private forms”³. The richness and variety of forms features contemporary art and architecture. Composer John Cage said: “We live in a time I think not of mainstream, but of many streams, or even, if you insist upon a river of time, that we have come to a delta, maybe even beyond delta to an ocean which is going back to the skies”⁴. The avant-garde was so creative and innovative that it remains an inspiration for artists and architects to this day. Although it is difficult to imagine that visual arts and architecture could formally take the next step, propose something radically new, the human imagination is boundless and the range of formal inspiration, also from the “museum” of the avant-garde art, still seems far from being exhausted.

2. EXPRESSIONISM, ORGANIC ABSTRACTION AND THE CONTEMPORARY ARCHITECTURE

In the 1960s and 1970s, Japanese Metabolists proposed architectural and urban designs that, imitating nature, would grow like fractal structures or trees. Arata Izosaki, who belonged to Metabolists, in his later projects applied organic principles to architectural

² J. Roberts, *Revolutionary Time and the Avant-Garde*, Verso, London 2015 p. 1.

³ T. Kozłowski, *Tendencje ekspresjonistyczne w architekturze współczesnej*, Wydawnictwo PK, Kraków 2013 p. 186.

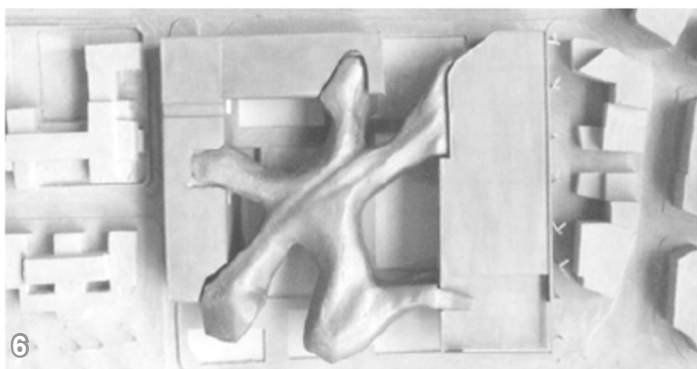
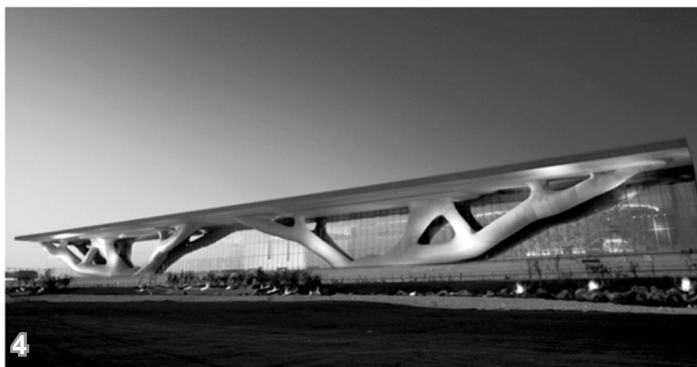
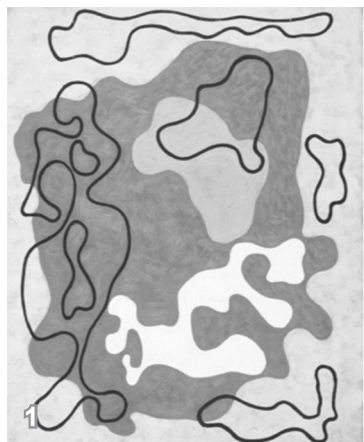
⁴ R. Shepherd, *Who You Callin' "Post-Avant"?*, February 6th, 2008, www.poetryfoundation.org

form. Manggha museum in Cracow took the form of waves referring to the bend of the Vistula river. In Doha, Izosaki designed the Qatar Congress Center. The building houses a conference room for 4,000 people, a theater with 2,300 seats, 9 exhibition rooms and 52 smaller rooms⁵. In this building, organic rules are applied to the form, not to the function and construction as it used to be proclaimed by Metabolism movement. The shape appearing on the facade imitates the shape of monumental tree branches. Although Izosaki designed an almost identical structure a few years earlier for a competition for a new railway station in Florence, architect claims that she source of inspiration was a sacred Arab tree growing in the desert – Sidrat al-Muntaha, under which poets and scholars found shelter to share their knowledge. In the design for Florence, the structure of the “branches” grew spatially and in the Qatar building it placed on both sides – outside and inside – the glass facade of a large boxy building. Organic, steel form resemble the sculptures of Maria Jarema. The artist created abstract sculptures with forms referring to the world of nature: “Began to create very spacious compositions with liquid, smooth, semi-organic forms grown together. Her sculptures stood on the border between abstract and figurative art, because the subject allusions, although quite distant, were always visible”⁶. In the sculpture titled “Dance” two forms resembling trees grow from the ground and twist around each other like a pair in a dance embrace.

In 2011, a large organic structure was completed in the center of Seville. The competition for revitalization of the Plaza de la Encarnación was won in 2004 by Jürgen Mayer H. Architect proposed to build a “city umbrella” over the square in the form of giant architectural “mushrooms”. An irregular form springs from reinforced concrete stems, like a cloud hovering above the ground on six pillars. The structure is made of trusses composed of wooden panels cut into arches. The structure was designed by the Arup construction office. Large trusses provide shading of the square, and they themselves carry a new square, raised above the roofs of the neighboring buildings. The function of the building is hidden in rounded lattice structures, inside the umbrella there are bars and cafes. Thanks to leaning only on six legs, it was possible to protect Roman ruins exposed during archaeological works. The square after revitalization has become an important place in the city, full of attractions, and Umbrellas became a new icon of Seville. The mega-structure hovering over the square brings to mind the collage of Hans Hollein from 1960 entitled “Superstructure over Vienna”. This collage presents quasi-stone “mushrooms” having something in the shape of a cloud after an atomic explosion. Form in Sevilla have a softer shape, due to the open structure and bright color. Despite the large scale, it looks light, seem to deny architectural gravity. It is an abstract form in the city structure, it looks surreal, like soft, organic shapes suspended in the space of the paintings by Joan Miró. Although it grew up over the city, it formed a natural shape. From the bird’s eye view, the round shape of the Umbrella spreads over the city’s tissue like the spots and contours of Władysław Strzemiński’s “afterimages”. Pre-war artists, including Strzemiński, Kobro and Jarema, gathered in such groups as Blok, Praesens, a.r., were among the leaders of the European avant-garde. “Outstanding avant-garde artists from other countries had no doubt as to the individual character and distinctness of the search, for example, of Szczuka or Brylewski, highly rated by “Der Sturm”, or Kobro, Stażewski and

⁵ A. Frearson, *Qatar National Convention Centre by Arata Isozaki*, 22 August 2013 dezeen.com

⁶ A. Kotula, P. Krakowski, *Rzeźba współczesna*, WAiF, Warszawa 1985 p. 241.



- III. 1. Władysław Strzemiński, *Kompozycja morska. Wenus*, 1933 [wikiart.org]
- III. 2. Jürgen Mayer H. *Metropol Parasol*, Sevilla 1961 [www.infoarchitekta.pl]
- III. 3. Maria Jarema, *Dance*, 1955 [muzea.malopolska.pl]
- III. 4. Arata Izosaki, *Qatar National Convention Centre* [theplan.com]
- III. 5. Jean Arp, *The Star*, 1956 [magazynszum.pl]
- III. 6. Steven Holl, *Museo de la Evolución Humana*, Burgos [Dutch Art Institute]

Strzemiński – invited on an equal partnership basis to Cercle et Carré and Abstraction-Creation, the only major avant-garde groups in the world in the 1930s”⁷. Abstraction-Creation consisted of, among others, Constantin Brâncuși, Jean Arp and Barbara Hepworth. Artists associated with this group promoted non-figurative art, including organic abstraction. Nowadays, these forms have become an inspiration for a new architecture.

American architect Steven Holl is known for his wide architectural repertoire, playing with geometric forms, cuboid cuts, compositions of blocks, as well as with architecture referred to as minimalism. In an unrealized project for the Museum of Human Evolucion, Holl chose forms from the repertoire of organic architecture. Near Burgos, in Atapuerca, traces of the existence of human ancestors from almost a million years ago were found. The architect was inspired by the first human habitats – caves and decided to recreate their shape in the matter of modern architecture. He designed a museum whose main part was to take a morphic form, stretched between two flanking, straight buildings. The structure is like a negative of a cave, a cast of its interior, an architectural metaphor for the prehistoric beginnings of human evolution. The organic shape, with six branches, resembles a ginger root or a Jean Arp sculpture entitled “Star”.

Organic motifs can also be found in Peter Eisenman’s designs. Their origin is related to natural forms, for example, tectonics of the Earth. This was the case with the City of Galicia project, which is an example of the trend called “topographic architecture”. Another example of an allusion to forms of nature is the competition design for the Musée des Confluences in Lyon. Eisenman proposed a concept perhaps more interesting and bolder than the winning project by Coop Himmelb(l)au. He designed two towers “molded” into liquid, soft forms that “flow out” from the ground. It is difficult to clearly identify the source of inspiration, maybe they were dunes, maybe the stones washed out by the water, and perhaps the folded meanders of the rivers between which the museum was to be built. The conceptual model of the design presents forms emerging from the base, cut off from above, as in Jean Arp’s sculpture “Echo de torse”. “Arp, therefore, wanted to create somehow in parallel with nature, but he did not break connections with it, which is why his abstract sculptures have clear allusions to real forms (...) the sculptures of Arp, are “figures”, but abstract figures, constitute a maximally generalized synthesis found in nature forms”⁸. The sculpture consists of two golden forms that are an abstract “echo” of human torsos, growing out of a stone pedestal, it is one of a series of torsos carved by the artist over many years.

Arp was a student of Brâncuși; “like Brâncuși, whom he considered his master, he paid attention to precious materials and to the sculpting craft itself, to the careful finishing of each work, to flawless form, its purity, harmony and simplicity”⁹. The Spanish architect Santiago Calatrava admits to be inspired by both artists; “In terms of sculptors, I have a huge admiration of Brâncuși. (...) I also have [a deep] admiration for Arp”¹⁰. Before becoming an architect, Calatrava studied sculpture, drawing and painting. He uses his

⁷ Z. Baranowicz, *Polska awangarda artystyczna 1918–1939*, WAiF, Warszawa 1975 p. 234.

⁸ A. Kotula, P. Krakowski, *Sztuka abstrakcyjna*, WAiF, Warszawa 1973 p. 142, 144.

⁹ A. Kotula, P. Krakowski, *Rzeźba...*, *op. cit.* p. 236.

¹⁰ Ivy R., *An Interview with Santiago Calatrava*, Architectural Record, August, 2000, <http://architecturalinterviews.blogspot.com>

acquired skills in design work, drawing or sculpting studies are often ahead of his architectural concepts. His sculptures, by the theme, form, meticulous execution and use of precious materials resemble the works of Brâncuși and Arp. Brâncuși started the organic abstraction movement in sculpture, creating works that were synthetic forms resembling, on the principle of a symbol, natural forms, for example birds. “Brâncuși always came out of the surrounding world. From there, he took a specific pattern, model, but as a result of consistent elimination of details, simplifying the form, abstracting it from nature, he changed his works into some abstract symbols, signs, which are only very distant allusions to reality. The artist developed the same motif in various subsequent versions, striving for more and more precision in surface treatment and for formal perfection. In this way, numerous “Birds”, “Roosters”, “Fishes” and other sculptures are created, resembling only the most general outlines, in silhouette, the synthesis of movement of the animals suggested by the titles. A typical example may be a series of “Birds”, at the beginning of which is still figurative, although strongly simplified, sculpture “Maiastra” from 1912; then the shape of the bird becomes more and more simplified and finally transforms into a repeated, slender, soaring, spindle-like vertical form symbolizing the rise”¹¹. The form of the bird, though with a slightly different shape, also appears in the sculptures and architecture of Santiago Calatrava. The “Bird I” sculpture from 1986 is made of golden arched forms, similar to section of a sphere, which leaning on the tips, are suspended above a small ball. The same form appeared in the project Auditorio de Tenerife built in the years 1997–2003. The monumental sculptural “sail” is suspended above the building body, in a prominent place, on a promontory surrounded by the ocean. The white, expressionist form evokes associations with the shells of the Sydney Opera House.

The form of the bird soaring into flight appears in other Calatrava realizations: Lyon railway station, the building of the Polytechnic in Lakeland and the museum in Milwaukee where the roof elements move like wings. A similar concept was to be used in the main building of the WTC transportation hub in New York. After the terrorist attack when twin towers collapsed, sunlight illuminated previously shaded surrounding areas of New York. Movable “wings” were to open everyday at the time when the towers collapsed, letting light into the terminal. This idea was abandoned, the building received fixed wings – cantilevers extended to the side. Inside, soaring ribs create a monotonous rhythm, crowned with an elongated skylight. Sharpness of form is associated with the forms known from Gothic cathedrals. Calatrava, who calls himself an artist, architect and engineer, balances between these fields of art. “The organicity, which urgently dazzle the viewer of the constructor’s works, are his engineering structures seem to belong to the world of nature rather than to a collection of human creations. Coming to the essence of the architecture of Santiago Calatrava, it is appropriate to derive it from “natural things” and notice the affinities of its construction with the structures of nature. There is something of the calmness of the frozen structures of skeletons, shells, stalagmites in them, but one can also see in them the hidden energy of the grass grinding in the wind, weighted branches, or simply muscles”¹². The form of the terminal evokes associations with a white pigeon, a symbol of peace. The building

¹¹ A. Kotula, P. Krakowski, *Sztuka...*, *op. cit.* p. 140.

¹² D. Kozłowski, *O naturze betonu – czyli idee, metafory i abstrakcje* [in:] D. Kozłowski [et al.] (eds.), *Architektura betonowa*, Polski Cement, Kraków 2001 p. 6.



Ill. 7. Jean Arp, *Echo de torse* [artnet.com]

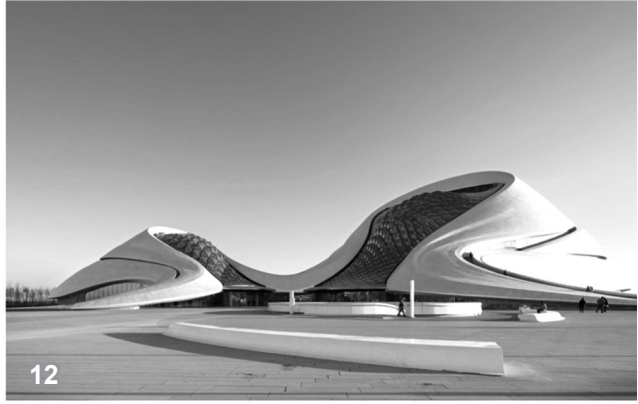
Ill. 8. Peter Eisenman, *Musée des Confluences* [eisenmanarchitects.com]

Ill. 9. Constantin Brâncuși, *Bird in space*, 1928 [lacma.org]

Ill. 10. Santiago Calatrava *Bird I*, 1986 [calatrava.com]

would be formed to be an icon, a new symbol of New York, the equivalent of a lost icon – twin towers.

Zaha Hadid implied fluid forms into her designs, starting with furniture; Sperm Table from 1988, through the concept of Spiral House (1991) and ending with architecture created in the 21st century. In 2012, a multi-functional cultural center designed by Zaha Hadid's office was opened in Baku. Heydar Aliyev Center houses a museum, library and conference center. The building stands out among buildings in the style of socialist modernism. On an urban scale, the free-standing sculptural building found itself in the right surroundings among separated units, built according to the idea of a modernist city. The fluid architectural form of the center



- Ill. 11. Antoine Poncet, unknown title [pinterest.com]
 Ill. 12. Ma Yasong MAD, *Harbin Opera* [pawelpaniczko.com]
 Ill. 13. Antine Poncet, unknown title, Nanterre, 1991 [pinterest.com]
 Ill. 14. Zaha Hadid Architects, *Heydar Aliyev Center*, Baku [architectmagazine.com]

contrast with the surrounding, rectangular blocks. Dynamic, wavy, white surfaces are similar to the abstract sculptures of Antoine Poncet, whose work was shaped by Brâncuși and Arp.

A similar shape, composed of white waves forming an architectural mountain, rises among the empty space in the city of Harbin in China, where Ma Yasong designed spectacular opera house. The soft form of the building is cut by the dark surfaces of the convex glazing, the “notched” texture contrasts with the flat, smooth surfaces of the white wave surrounding the building. Ma Yasong, before establishing his own MAD design studio, worked in the office of Zaha Hadid, then left the master’s studio and achieved success on his own. As Peter Cook writes: “Whatever happened to the avant-garde? It was a very useful term 100, 70 or maybe 40 years ago for it covered the notions of newness, wit, inspiration, originality (...) If only we can concoct a new world, we surly then have an appropriate tag for Ma Yansong who can be all these things”¹³. In Yansong’s work, Hadid’s influence, in

¹³ Peter Cook in: Yasong M., *MAD Works MAD Architects*, Phaidon, London 2016, p. 7.

particular the last stage of her work, is obvious. The Harbin Opera House, often compared with the Heydar Aliyev Center, exhausts the aesthetics and form that architecture owes to Zaha Hadid. One can get the impression that we are dealing with a new copy of Hadid's works, spectacular and beautiful, but as it is the case with brilliant copyists, devoid of depth and originality.

The influence of Barbara Hepworth is noticeable in Zaha Hadid's aesthetics. In furniture designs, soft, spilling, fluid forms are often connected by strips of materials, like strings stretched on sculptures by a British artist. Hepworth belonged to Abstraction-Creation and drew on the work of a group. "A trip to France in 1932 enabled her to establish direct contact with Brâncuși and Arp, whose work impressed her. It was also influenced by Mondrian and Naum Gabo, who was in England at the end of the 1930s"¹⁴. Hepworth experimented with space making holes in sculptures, often highlighted by the diverse materials. The hollow, empty spaces inside the sculptures found their continuation in contemporary architecture. Sculptural tear in the body, holes drilled inside buildings became a frequent formal theme in Hadid work. Such forms are visible in the King Abdullach II Center and Opus project in Dubai. Another example is Galaxy SOHO complex in Beijing. It consists of four 67 meter high towers. The buildings contain office spaces and a shopping mall, on the top there are bars and restaurants on the top. Between the buildings there are footbridges – the white shapes of the balconies smoothly divide into the façade divisions of the buildings. The spaces between the buildings have references to traditional Chinese courtyards. The interior space resembles a sculpture by Barbara Hepworth "Oval Sculpture". The organic form made of white ribbons, cut through with glazing, gives the impression of a huge, artificial, futuristic canyon.

Soon after the opening of Galaxy second complex of similar purpose – Wangjing SOHO, was created in Beijing. It is dominated by three towers, in a longitudinal, white flowing style. The forms here are slender, and slightly curved in plan. The oval forms resemble another Hepworth sculpture "Two Forms". The artist studied the forms by means of photography, using several shots on one film, so that her form intertwines, moving and multiplying the afterimage of white forms. The dynamic composition of Wangjing SOHO buildings creates a similar impression.

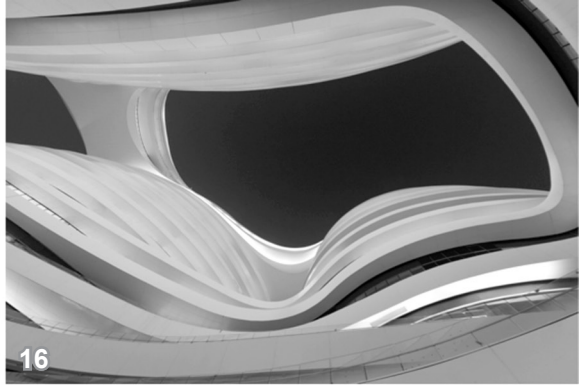
In the "Three Forms" sculpture, Hepworth explores spatial relationships in a composition made of three alabaster stones. One of them standing on the edge is the dominant. Architects from the office of Snøhetta applied a similar composition procedure. They won a competition to design a world culture center named after King Abdulaziz in Dhahran. In the desert in Saudi Arabia, gray, oval forms are reminiscent of large stone blocks, prehistoric megaliths, or an alien ship. The dominant feature of the design is the tall tower – "menhir" wedged between the other "rocks". The complex includes a theater, auditorium, educational center, cinema and library. Architects obtained organic forms by wrapping the building structure with a metal pipe covering¹⁵.

¹⁴ A. Kotula, P. Krakowski, *Sztuka...*, *op. cit.* p. 147.

¹⁵ J. Bel, *Desert form: Snøhetta's monumental symbol of Saudia's past, present, and future*, November 2016 issue of Wallpaper (W212) 29 Oct. 2016 www.wallpaper.com



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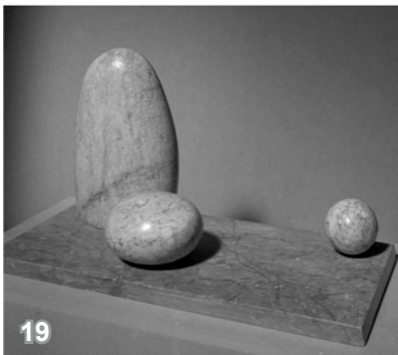
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- III. 15. Barbara Hepworth *Oval Sculpture (No. 2)* 1943 [tate.org.uk]
- III. 16. Zaha Hadid, *Galaxy SOHO*, Pekin [archdaily.com]
- III. 17. Barbara Hepworth, *Two Forms*, 1937 [voila.eu.com]
- III. 18. Zaha Hadid, *Wangjing SOHO*, Pekin [dezeen.com]
- III. 19. Barbara Hepworth, *Three Forms*, 1935 [tate.org.uk]
- III. 20. Snøhetta, King Abdulaziz Center for World Culture, Dhahran [architectmagazine.com]

3. THE TRADITION OF THE AVANT-GARDE – CONTEMPORARY CONTINUATION

Affinities with art are visible in the work of the greatest CONTEMPORARY architects. Zaha Hadid, Frank Gehry, Daniel Libeskind, Santiago Calatrava all admit to get inspiration from avant-garde art. They studied the art through scientific works, exhibitions, or through their own artistic creation. The impact on architectural creativity can be seen from the first works – paintings, conceptual designs, and architectural realizations. New stars of architecture of the early 21st century; Ma Yansong, Caroline Bos and Ben Van Berkel and others enter the world stage, continuing the trends created by their predecessors. They create buildings with spectacular, expressive forms; corrugated shells, liquid curves. Among the works of contemporary architecture, you can find modernized versions of avant-garde concepts and unrealized projects. As T. S. Eliott used to say: “Art never improves, but... the material of art is never quite the same”¹⁶. A large part of the ideas of avant-garde architects remained on paper due to the lack of technical and economic possibilities to realize them at that time. The development of computer design as well as new construction and building possibilities lift old restrictions and enable the construction of the most abstract shapes. Paradoxically, architecture – the field of art that was once the most limited by functionality, statics and economics, became a space for experimenting with the form. The canons of style were replaced by creativity and search for newness, bold, sculptural forms dominated the architectural media coverage. Contemporary architecture is formalist, it does not speak a common language, but uses the means and forms well known from the history of architecture and sculpture. “The “formalist” works on the form *for the form’s sake, without regard to its function*, concerned *only* with formal characteristics and matters of visual appearance. (...) Peter Eisenman’s notorious 1976 article “Post-functionalism” argues that architecture lags behind abstract art and absolute music and must cast aside its concern with function to emancipate itself and become truly modern”¹⁷. In the expressive icons of the new architecture, the main goal is the external form. “The latest expressionist tendencies in architecture, according to the avant-garde desires of the early 20th century (...) inform, that art of building space is freed from the slavery of the dogma of form-function-construction balance. Thus, the statement that architecture is the least selfless of the arts becomes an insult without justification”¹⁸. The new architecture explores the pursuit of originality in an extreme way, so that it formally becomes close to abstract art. Steven Holl states; “While artists work from the real to the abstract, architects must work from the abstract to the real”¹⁹. At the turn of the 20th and 21st centuries, a dynamic evolution of the architectural form took place. The goal of contemporary architects is to surprise with the form, just as it was among artists in the avant-garde times. Contemporary buildings are original, sublime, sometimes shocking, provoke visually and intellectually. Architects from craftsmen following tradition turned into artists-experimenters.

¹⁶ T. S. Eliott, after: T. Kozłowski, *Architektura a sztuka*, Politechnika Krakowska, Kraków 2018, p. 139.

¹⁷ P. Schumacher, *Formalism and Formal Research*, ARKETIPO, 2016, no. 104.

¹⁸ T. Kozłowski, *Tendencje... op. cit.* p. 6.

¹⁹ S. Holl, *What is Architecture? (Art?)*, The Brooklyn Rail, Sep. 01, 2013, www.stevenholl.com

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