

EWA CISEK

ORCID: 0000-0002-7613-6612

Wrocław University of Science and Technology, Poland

AVANT-GARDE ARCHITECTURE – A BUILT ARCHITECTURAL SPACE OF SOUND IMAGINATION AND SCULPTURE

AWANGARDY ARCHITEKTURY – ARCHITEKTONICZNA PRZESTRZEŃ ZBUDOWANA WYOBRAŹNI DŹWIĘKOWEJ I RZEŹBY.

Abstract

Contemporary architecture uses forms which reflect subtle manifestations of the world expressions such as sound, which is a vibration, and sculpture which draws motifs from the surreal and virtual world. In these solutions, the form, not the function, constitutes the overriding goal and everything that surprises a recipient becomes permissible. The article deals with the issues of the avant-garde-built environment, sound imagination and sculpture defined as a space of deep listening with the character of a nature temple and a studio – an instrument and a bridge of sounds.

Keywords: avant-gardes of architecture, sound in architecture, space of sound imagination

Streszczenie

Współczesna architektura sięga po formy oddające subtelne przejawy ekspresji świata, takie jak dźwięk, który jest wibracją oraz rzeźbę czerpiącą motyw z świata surrealistycznego i wirtualnego. W rozwiązaniach tych forma, nie funkcja, jest celem nadrzędnym i wszystko, co zaskakuje odbiorcę, staje się dozwolone. Artykuł porusza problematykę awangardowej przestrzeni zbudowanej, wyobraźni dźwiękowej i rzeźby zdefiniowanej jako przestrzeń głębokiego słuchania o charakterze: świątyni natury, studia – instrumentu i mostu dźwięków.

Słowa kluczowe: awangardy architektury, dźwięk w architekturze, przestrzeń wyobraźni dźwiękowej

1. INTRODUCTION

Creating a built space of sound imagination and sculpture is part of the era in which we currently live that is defined as post-modernity. This state of culture is characterized by the admission of various thoughts and forms to the creative process, while weakening the belief in one universal path of the world development. The utility, durability and beauty, which were a *sine qua non* condition for building, have become irrelevant. Instead, a new door has opened leading to new areas of cognition and the creation of architectural space, which shifted the focus from the cognition of objective reality to a more subjective, sensual, and thus avant-garde cognition. One of these areas has become a space of sound imagination which

is shaped as a combination of sculpture, nature, and architecture, also referred to as a space of deep listening, which can take the form of a nature temple and a studio – an instrument and a bridge of sounds.

2. THE TEMPLE OF NATURE AS A SPACE OF SOUND IMAGINATION CHARACTERIZED BY A CREATIVE COMBINATION OF WATER, SCULPTURE AND ARCHITECTURE INTO A NEW SPATIAL QUALITY

Sound imagination is defined by Thomas Stearns Eliot, the author of “Waste Land” poem, as intuitive listening which makes it possible for us to understand many perspectives for the manifestation of all beings¹. It enables a viewer to notice the multidimensionality of the world as well as the multifaceted and relational nature of each constructed form, including architectural one. Eliot believed that sound strengthens the power of words and creates a space for deep listening. One hundred years after the publication of his avant-garde poem filled with sounds, which was considered the foundation of modernism in literature, the subject of postmodernism and avant-garde in architecture returns. A perfect example of this is represented by transformations of forms, which were formerly perceived as typically utilitarian of a production character, into giga-resonators with *sacrum* spaces filled with sounds of nature. These new Temples of Nature are created by man for Nature by means of a skillful combination of sculpture and nature with architectural space. The latter usually creates a spatial frame and at the same time an acoustic environment of a studio character for the former two and generates a new quality of space which is defined by a space of intuitive sound perception.

The implementation by artist Alicja Patanowska entitled *The space of sound imagination*, which was exhibited as part of the cyclical cultural event Przegląd Sztuki Współczesnej SURVIVAL Wrocław 2018, is an example from Wrocław, which may illustrate this avant-garde architectural space. This implementation is a sculptural sound installation which is based on ceramic vessels – resonators, a twelve-second reverberation of the historic interior of the Pump Hall and compositions of water drops falling from the vault (Ill. 1). The historic red brick pumping station building of the City Port (architects Richard Plüddemann and Karl Klimm, made in 1902), which is kept in the spirit of the *Rundbogenstil* arcade style, when combined with the sound installation, changed its utility function and transformed into a space of audio – water sounds which open the user to a new covert reality. Water as an alternative environment for spreading sound waves, also in the waves which are inaudible to humans, is a symbol of the hidden world. In the installation in question, it flows down the iron chains fixed in the vault of the hall in order to temporarily stop at their connections and then fall in drops from a great height, hitting rhythmically the bottoms of ceramic vessels. The vessels are of different sizes and shapes, which allows them to bring out a variety of tones and sounds as if from well-tuned instruments in the orchestra. They have been shaped so as to repeatedly reflect and amplify the sound at the output and provide it with a full sound, which is then boosted by the twelve-second reverberation of the hall itself. The sounds which are caused by water droplets are vibrations,

¹ T.S. Eliot, *Ziemia jałowa*, https://kwartalnik.art.pl/wp-content/uploads/2015/06/Kwartalnik_Artystyczny_2_1995.pdf, 1995, (access: 8.06.2022).

thus they mediate communication between man and matter. Users of the space thus created adjust themselves from the visual to the auditory channel, experiencing the surrounding nature of sound, the feeling of being in the center where the sound surrounds, penetrates, and fills them. The sound installation in combination with the reverberation of the architectural interior prompts users to tune their hearing, i.e. a new and more careful listening. Quoting Patanowska:

A drop becomes a prism, allowing us to see differently than usual [...] how the hourglass measures time, of which we have less and less [...] water connects all living creatures, just like cobalt dyeing blue is necessary for the proper functioning of living organisms. Contemporary ecological movements referring to the concept of a soundscape pay attention to forms of interspecies communication which we can get to know in the process of in-depth listening only.²

The monumental space of the historic hall in combination with seven sculptures painted in cobalt color – ceramic resonators and water flowing into them create a new quality of architectural space – the Temple of Nature, i.e. a space of sound imagination. The space created in this way follows its own path, seemingly breaking away from the remembered signs. However, it can be seen that something prevents it from being completely separated from its previous inclinations. The new acoustic environment created in this way evokes the Japanese tradition of *suikinkutsu* where the sound is an element of the ritual which determines its rhythm.



III. 1. *A space of sound imagination* SURVIVAL Wrocław 2018, The Hall of Pumps in the Old Port in Wrocław, Poland, author: artist Alicja Patanowska, resonator shape consultation: Ewa Cisek, photo by Daniel Brożek.

² A. Patanowska, *Przestrzeń wyobraźni dźwiękowej*, www.archiwum.survival.art.pl/przestrzen-wyobrazni-dzwiekowej-2020/ (access: 7.06.2020).

The space of sound imagination can also penetrate and permeate an architectural form and make it immersed in it. The most representative Norwegian example of such a layout is the House in Kikkut – *A House to Die In* in the western part of Oslo (artist Bjarne Melgaard, arch. Snøhetta). The construction of this object has been controversial for years, mainly due to its avant-garde form, which is an architectural experiment, and the vicinity of traditional buildings, including the house of Edward Munch. The image of the object is dominated by geometric patterns, mainly triangles, which are completely different from the traditional ones. The façade is finished with black and burnt oak wood, the color of which will be changing over time, undergoing natural processes. Perforated ornaments resembling a tattoo are visible on its surface. At night, they light up from the inside, giving the effect of glowing with warm light magical patterns and pictograms. The House of Melgaard is carried by creatures of zoomorphic shapes, kept in climates of snow-white for contrast, which in winter scenery creates the illusion of being supported by ice sculptures³. Thanks to this, the irrational effect of a dark mysterious shape which appears to levitate above the ground like an unidentified flying object was achieved. This effect of a slight floating of the form above the surface of the ground was additionally enhanced by the location of the water surface underneath it, i.e. shiny and changeable which reflects light and living with shapes of the environment. It is a natural reservoir for rainwater. It collects tiny, falling drops which, hitting the water rhythmically, create a space for intuitive perception of sound. The layout, which is filled with sounds, creates its own world which does not imitate reality, the present, or the past, but the world that looks for super novelties.

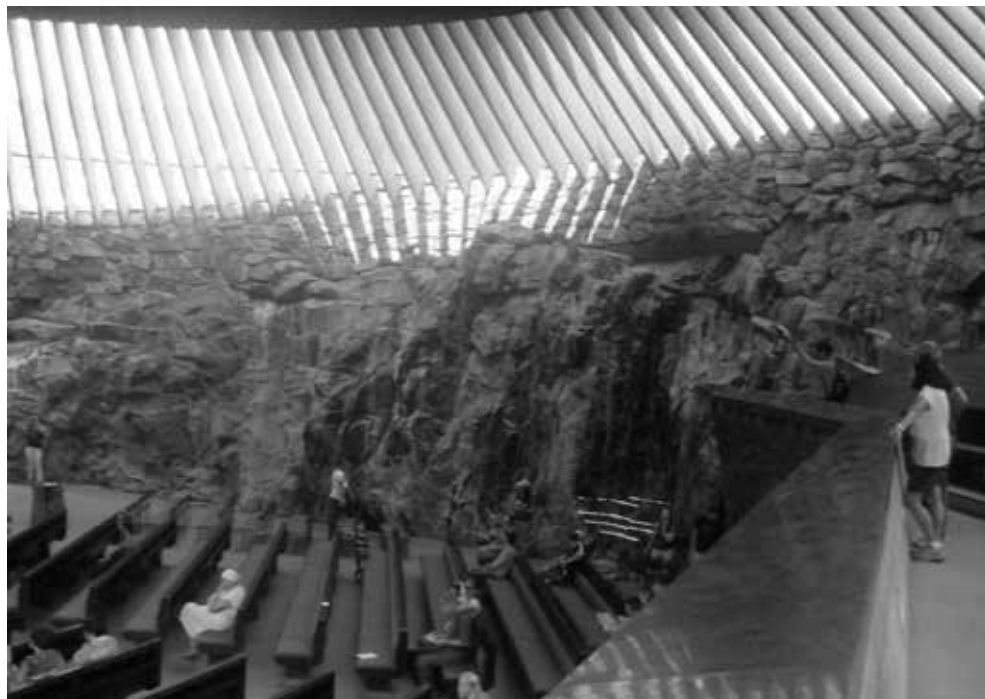
The space of sound imagination is constantly present in natural rock formations such as caves and canyons. The avant-garde solution of the Rock Church in Helsinki, Finnish *Temppeliaukio Kirkko* (architects Timo and Tuomo Suomalainen, implementation in 1969) indicates deliberate actions of architects to obtain an interior with specific acoustic parameters. The object was hollowed out in a huge granite rock filling Temppeliaukio Square, within a compact quarter development (Ill. 2). Its interior uses acoustic properties of the building material, the natural tectonics of the surface of walls and vaults as well as the ellipsoidal geometry of the inner space where the sound effect is enhanced thanks to the copper dome element (Ill. 3). The intact natural tectonics of the surface of granite walls is now the main advantage of the church⁴. Its congregation have the feeling of being in an authentic cave which is invariably associated with safety and the space of *sacrum*. This effect is also deepened by the method of covering the rocky interior. A copper dome which is supported by 180 glass panels allows the church to be illuminated by light penetrating from above, similar to a naturally shaped grotto in which streaks of light pass through the slots in the vault. The dome, its shape and material from which it was made, enhance the acoustic effect of the interior, both of sounds generated inside and raindrops which hit the outside surface during heavy rain. A copper gallery was erected next to the one of the walls, which not only offers an impressive view of the entire interior, but also allows visitors to have further different auditory impressions at a higher point in the church space. From the outside, the object resembles a rocky hill – a pavement, on which we can walk and listen to the characteristic sound caused by footsteps on a granite rock. The only visible, architectural accents are represented by the dome crowning the rock and the entrance from Lutherinkatu Street, which bring to mind a narrow crevice leading deep into the rock.

³ A. Bucknell, *Inside the Design of Norway's Most Controversial Building*, www.metropolismag.com/architecture/snohetta-house-die-design/ (access: 7.06.2022).

⁴ M. Piprek, *Architektura Finlandii*, Arkady, Warszawa, 1988.



Ill. 2. Rock Church in Helsinki, Finland, hollowed out in a huge granite rock filling Temppeliaukio Square, within a compact quarter development: view of the roof – sidewalk, photo by E. Cisek.



Ill. 3. Rock Church in Helsinki, Finland: view of interior – rock cave, photo by E. Cisek.

3. A STUDIO-LIKE INSTRUMENT DEFINED AS A SPACE OF SOUND IMAGINATION CREATED BY A COMBINATION OF MOVEMENT AND SOUND WITH SCULPTURE AND ARCHITECTURE

The idea of post-modern and post-functionalist architecture is connected with the rejection of rationalistic ideas of modernity. The spatial form is situated on the border of architecture and sculpture, taking over the features of non-architectural objects and thus becoming their architectural representations. And so, the sculptural form which evolves in the direction of a musical instrument obtains an internal space that is an interactive space with the audio-sphere surrounding the object. We can enter it and establish a good rapport with it by means of the intuitive feeling of sounds, both those of which we are authors and those coming from the outside. An interesting example here is a small architectural shape called *Gigaphone* which was designed by a couple of architects Geir Brendeland and Olaf Kristoffersen in Trondheim (implementation in 2011). It is a steel structure in the shape of a truncated cone of a studio character and supported by eight pillars. This avant-garde form on the border of architecture and sculpture can be compared to a gigantic musical instrument with an internal accessible space which reflects the pure timbre of each sound. For this reason, the interior of *Gigaphone* is used by musicians, i.e. here they meet, tune their instruments and perform their favorite compositions. It is also a favorite space for children to play and for adults to contemplate. The tones in the interior which are caused by living creatures, their movement and the sounds they create as well as the wind are amplified and directed. Moreover, small background noises such as echoes, flutter and murmurs are collected⁵. The intended sound effect results from the appropriate combination of three components, i.e. the material – the inner side of the tube was covered with glossy black varnish, which is used in yacht building technology, the shape of the facility and its location – originally it was the edge of the park, then the zone between the city and the fjord. *Gigaphone* is a type of capsule – resonator filled with amplified sounds, which we can enter to experience deep listening and immerse ourselves in a space of sonic imagination.

A separate and interesting group is represented by pavilions which are equipped with motion sensors that generate sounds as a result of registering the slightest movement in the object's space. The sound heard is not the amplified sound of someone's activity but its multimedia counterpart. An example is the implementation called *Ekko* by Thilo Frank from Denmark. The object is made of wood – it is a covered walking path which is full of openwork inviting us to forest bathing and walking in nature. Thanks to the installed sensors, each movement inside the structure generates a melodic motif. Each of the activities, such as a soft cat's walk, joyful dog jumps, bird trotting and resolute human steps, receives its sound representation. This type of architectural form is defined as an interactive structure where the sound which manifests the presence of life becomes the medium of modulation.

Architectural spaces by Lars Spuybroek and composer Edwin van der Heide are created in a similar way. The *Son-O-House* Sound Pavilion, interactive sound architecture in Ekkersrijt, which was built in the Netherlands in 2004, constitutes a kinetic and energy model of space known as a 'media machine' and a 'synthesis of information, geometry, and human activity'⁶.

⁵ E. Cisek, *Dźwięk w architekturze-naturalne rezonatory i interaktywne projekty multimedialne*, [in:] A. Kłopotowska (ed.): *Dźwięki Architektury*, Oficyna Wydawnicza Politechniki Białostockiej, Białystok 2015, pp. 74–75.

⁶ P. Zellner, *Hybrid space: New forms in digital architecture*, Thames and Hudson, London 1999, p. 118.

In the pavilion, twenty-three motion sensors were installed and deployed at strategic points in the space. They are additionally supported by a sound system, i.e. microphones coupled with the soundtrack of Edwin van der Heide's musical compositions consisting of simple electronic sounds of similar frequencies. In this way, each visitor can 'hear his/her presence' which manifests itself in a unique and unrepeatable sequence of sounds. This phenomenon can be compared to a continuous process where the character of human activity is created by the sound present in it⁷. In this case, we are dealing with an architectural form which resembles a studio, i.e. with perfect acoustics which makes it possible to perceive music and with a kind of musical instrument⁸. When confronted with it, every visitor to the pavilion inevitably takes part in creating new sounds, becoming the creator of a new space – sound imagination. The form of the pavilion is also avant-garde, and its arched structure is made of steel elements, creating the shape of a *blob* which develops into dynamic lines of the body, arms, and limbs. It forms a kind of dynamic 'liquid architecture', reflecting the phenomenon of the human body, perception and activity in space, the attributes of which are movement, speed and mobility⁹. The second factor which shapes this unusual form is light. The architectural structure is filtered through it, producing a variable image of a transparent shell. From the outside, the 'skin of the object' looks like glossy or matte armor¹⁰ (Ill. 4). From the inside, it is completely transparent with the regular articulation of structural ribs, which allows a visitor to observe the surroundings (Ill. 5). This effect is additionally strengthened by the structure of the object, namely a steel skeleton which gently unfolds into organic shapes.



Ill. 4. *Son-O-House* Sound Pavilion, interactive sound architecture in Ekkersrijt, the Netherlands, photo by E. Cisek.

⁷ P. Zellner, *op. cit.*, p. 118.

⁸ W. Busch, *Klangpavillon Son-O-House in Ekkersrijt NOX*, [in:] Baumeister, 2005, no 1.

⁹ D. Kerckhove, *Inteligencja otwarta. Narodziny społeczeństwa sieciowego*, Mikom, Warszawa 2001, p. 65.

¹⁰ D. Kurkiewicz, *Architektura w cyberprzestrzeni*, [in:] Architektura i Biznes, 2002, No 5, pp. 34–35.



Ill. 5. *Son-O-House* Sound Pavilion in Eekersrijt, the Netherlands, view of interior – the space of sound imagination, photo by E. Cisek.

The space of sound imagination, which was created within the Akershus University Hospital Complex in Nordbyhagen, Lørenskog near Oslo in Norway (architects Tommi Grönlung and Petteri Nisunen, implementation in 2008) was aimed at creating a space with an artificially arranged sonic environment resulting from the motor activity of the human body. The walkway along the too long 30-meter section of the building façade required a solution which would shorten the feeling of monotony connected with the long route of this passage. The authors of the project placed nine sensors along the entire length of the passage. Their task was to react to any human movement by emitting a musical ‘theme of the day’, which harmonized with its pace and order. Each day of the year got such a motif, i.e. its own unique nine-tone sequence which was reactivated at an appropriate moment. The entire audio library consisted of a total of 279 different sounds which were distributed on all sensors. The sound appears when a user enters the passage and accompanies him/her until its end¹¹.

4. BRIDGE OF SOUNDS – AN AVANT-GARDE SPACE OF SOUND IMAGINATION

Considering the existence of certain architectural elements in the landscape, which result in ‘the existence of a place’ at the same time as all its components appear successively¹²,

¹¹ M. Hultman, *Art in Norwegian Public Places*, Loft. The Nordic Bookazine, 2009, no 9, p. 30.

¹² M. Heidegger, *Being and Time*, Harper & Row, New York 1962, p. 158.

Martin Heidegger aptly defines the idea of the bridge, i.e. ‘The bridge collects the earth as a landscape around a stream. It does not constitute a link between the shores that already exist. The banks only emerge as banks when the bridge crosses the stream’¹³. Building bridges over rivers as connectors with utility functions such as communication, market, and residential is one of the solutions with long traditions. The avant-garde-built space, which brings to mind the form of a bridge woven of sounds, is represented by two Norwegian projects in line with the idea of postmodern architecture, where the spatial form is situated on the border of architecture and sculpture. *Elveharpen* consists of two spherical sculptural forms which are located on both banks of the river in Drammen, right next to the Ypsilon pedestrian bridge. Shiny silver spheres reflect the surroundings like a mirror and collect sounds from the local ecosystem of the river. Like two sensors connected to loudspeakers, these forms respond to changes in the flow of water, so that we can hear the music of the river or, as others prefer, the singing of *Nøkken*, namely the shape-shifting spirit of water known from ancient Norse tales. Users who cross the bridge are immersed in these heavenly sounds, which often makes them stop and feel the sound space intuitively, *genius loci*.

The second project is the art gallery called The Twist Museum by Bjarke Ingels Group (implementation in 2019) in Jevnaker municipality near Oslo. The avant-garde structure in the form of a bridge-sculpture was stretched over the Randselva River in the apparently silent scenery of Kistefos – one of the most important Sculpture Parks in Europe, where about 46 statues by Yayoi Kusama, Fernando Botero, Claes Oldenburg, Tony Cragg, Olafur Eliasson and Anish Kapoor are exhibited. The double curvature of the bridge-museum façade is formed by simple aluminum panels arranged like a ‘pile of books’. The grooved shape of the walls of the gallery interior creates a specific audio-sphere which is filled with sounds. The user’s perception shifts from visual perception to attentive listening, thanks to the creation of a new quality of space which prompts an intuitive feel of sound.

5. CONCLUSION

The presented examples of a built space, sound imagination and sculpture, defined as a space of deep listening, i.e. a temple of nature, a studio – an instrument and a bridge of sounds, despite their avant-garde character, reflect in their basic assumption the attitude of being in the world by perceiving ego, nature and culture as a combined whole. Nils Faarlund who is a Norwegian ecologist, mountaineer and nature lover, aptly notes that ‘Nature is the home of culture because it is the root of all cultures’¹⁴. Layouts on the border of architecture and sculpture as well as sound imagination as complementary parts of culture, remaining in deep relationship with nature, can guarantee the authenticity and purposefulness of spatial solutions. Nature contains all the patterns, forms of spatial organization and subtle vibrations necessary in the design process, including sounds and other sensual and extrasensory emanations, which constitute the basis for creating a balanced and harmonious living environment.

¹³ M. Heidegger, *Budować, mieszkać, myśleć. Eseje wybrane*, Czytelnik, Warszawa 1977, p. 152.

¹⁴ N. Faarlund, *Var regjering oder norsk natur for a hjelpe millioner av fattige*, <https://www.kulturverk.com/2013/08/02/var-regjering-oder-norsk-natur-for-a-hjelpe-millioner-av-fattige/> (access: 7.06.2022).

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Author's Note:

Assoc. Prof. Ewa Cisek, PhD, DSc, Arch.

Faculty of Architecture of Wrocław University of Science and Technology, Head of the Department of Architectural and Structural Design, author of about 50 scientific publications and a monograph entitled 'Norwegian architecture and sculpture against nature' (Wrocław 2017), in which she shows unique features of Norwegian architecture – today perceived as typically national, resulting from the sculptural form and deep connections with nature.

ewa.cisek@pwr.edu.pl