

## FROM NOMADISM TO THE MOBILE STRUCTURES. TRADITIONAL AND MODERN APPROACH TO THE MOVEMENT IN ART AND ARCHITECTURE

---

### OD NOMADYZMU DO STRUKTUR MOBILNYCH. TRADYCYJNE I NOWOCZESNE UJĘCIE MOTYWU RUCHU W SZTUCE I ARCHITEKTURZE

#### Abstract

The traditional concept of nomadism is currently undergoing transformation into the concept of neo-nomad. Nomadism, despite its degenerative character, is an example of a *continuum* of movement and settlement of human units. Contemporary transformation of culture related to movement can lead to changes in the shaping and perception of architecture and the search for forms related not only to staticity but also to dynamics. At the turn of the 20th and 21st centuries, a number of objects were created, which are transferred from the macro to the micro scale, and due to the modern construction solutions, they simultaneously strive to minimize the energy used during exploitation. According to Daan Roosegaarde: 'space should evolve and change in accordance with the social and cultural context and needs of its inhabitants'. The article focuses on the presentation of a number of examples from nomadic mobile units to contemporary art and architecture. As a research method, logical analysis was adopted, and as research techniques – a comparative method and literature research, using as descriptive tools descriptions of research results with conclusions.

*Keywords: neo-nomadism, movement in art and architecture, mobile and temporary structures*

#### Streszczenie

Tradycyjne pojęcie nomadyzmu ulega obecnie transformacji, przekształcając się w pojęcie neo-nomady – współczesnego człowieka ruchu. Nomadyzm, pomimo swego degeneratywnego charakteru, stanowi obecnie przykład swoistego *continuum* przemieszczania się i osiedlania jednostek ludzkich. Współczesna transformacja kultury związana z ruchem, może prowadzić do zmian dotyczących kształtowania i postrzegania architektury oraz poszukiwania form związanych nie tylko ze statycznością, ale również dynamiką. Na przełomie XX/XXI w. powstał szereg obiektów, które ze skali makro przenoszą się do skali mikro, a dzięki nowoczesnym rozwiązaniom konstrukcyjnym, dążą jednocześnie do minimalizacji energii użytej podczas eksploatacji. Zgodnie ze stwierdzeniem Daana Roosegaarde, twórcy struktur responsywnych: „przestrzeń powinna ewoluować i zmieniać się zgodnie ze społecznym i kulturowym kontekstem i potrzebami jej mieszkańców”. Artykuł koncentruje się na przedstawieniu szeregu przykładów od nomadycznych jednostek przenośnych aż do współczesnych rozwiązań z dziedziny sztuki i architektury. Jako metodę badawczą przyjęto analizę i konstrukcję logiczną, a jako techniki badawcze metodę komparatywną i badania literaturowe, używając jako narzędzi badawczych opisów wyników badań wraz z wnioskami.

*Słowa kluczowe: neo-nomadyzm, ruch w sztuce i architekturze, mobilne i tymczasowe struktury*

---

<sup>1</sup> Ph.D. Arch. Anna Maria Berbesz, Department of Housing and Industrial Architecture, Interior Design, Rural and Landscape Planning and Visual Arts, W1/K6, Faculty of Architecture, Wrocław University of Science and Technology, anna.berbesz@pwr.edu.pl; ORCID 0000-0002-3887-6329

## 1. INTRODUCTION

The movement is closely related to human life and urban space. The motif of movement can be understood in dual terms: in a purely mechanical and metaphorical way. Professor Timothy Ingold from the University of Aberdeen, specializing in social anthropology, notes that: 'every life is a way of moving around in the world, our movement is not dependent on the way we live, it is life'<sup>2</sup>. Cultural anthropology seems to be the key to understanding the beginnings of shaping the living space of pre-industrial societies, including the mobile residential structures of nomadic communities. Nomadic structures are an example of the first portable objects that act as temporary shelters for a moving man. It seems important to analyze the origin of nomadic residential units and connect them with the concept of neo-nomadism in the context of contemporary art and architecture.

## 2. NOMADIC STRUCTURES IN A TRADITIONAL CONTEXT

According to estimates, at the turn of the 1970s and 1980s, around 20 million nomads and semi-nomads dealing with the nomadic breeding of animals lived in the desert, semi-arid and dry steppes of Asia and Africa. Professor Feliks Gross divided the issue of nomadism into typical nomadism and periodic semi-nomadism<sup>3</sup>. Typical nomadic, directly related to climatic conditions, occurs in zones where the seasons do not take extreme forms. Examples representing this type of nomadism are, among others Australian Aborigines and Tuaregs from North Africa. Temporary Aboriginal settlements were created mainly in well-hydrated territories, such as the banks of rivers, lakes, and seas. The residential structure was marked out on a plan of a circle in a frame construction made of mulga branches<sup>4</sup>. Tuareg structures are skeletal structures covered with animal skins or materials. The functional system is closely related to the social division based on matriarchy. Based on the analysis carried out by Dr Anja Fischer, the shape of the Tuareg structure can be divided into three types: 1. structures with a gable roof, 2. in the shape of a pyramid, 3. in a quasi-domed shape (Ill. 1).

Semi-nomadic nomadism occurs in areas associated with extreme climatic differences between summer and winter. Examples of this type of community are Kyrgyz (inhabitants of Kyrgyzstan), Inuits (inhabiting arctic and subarctic areas) and Saami (inhabitants of Lapland).

The Kyrgyz yurt is made in a skeletal construction on the plan of the circle. The roof is a concentrically shaped wooden skeleton joining in the central part into a ring constituting a hole called a *tundiuk*. The hole has a dual functional role, it is gravitational ventilation and a substitute for the chimney draft, it is also revealed at dawn to let in the light rays inside<sup>5</sup> (Ill. 2). The way of residence of the Inuit community is strictly dependent on the environmental conditions. In the summer season, tents are used as a residential building (*tupik*), in winter, ice structures are built in a self-supporting, quasi-dome system (*igloo*). A variation of the igloo

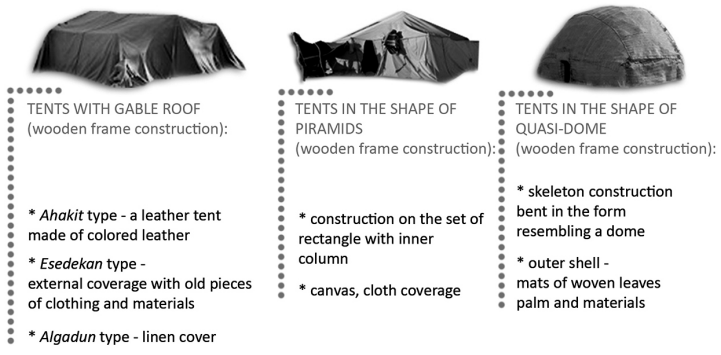
---

<sup>2</sup> T. Ingold (in conversation with K. Wala, M. Zych), *Ruch, w którym jesteśmy, zawiera też ruch naszych myśli* (The movement in which we are also contains the movement of our thoughts), *Autoportret. Pismo o dobrej przestrzeni*, 2014, no. 2 [45], p. 11..

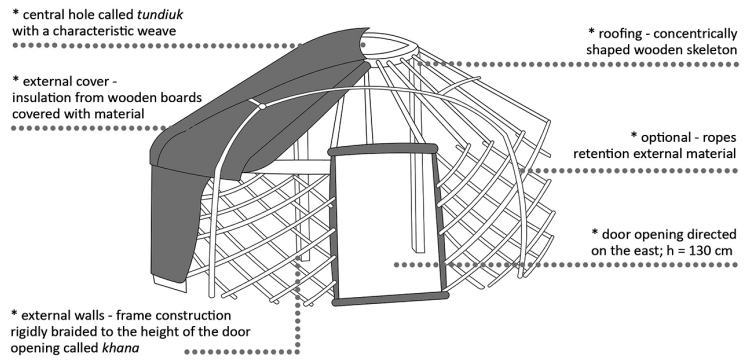
<sup>3</sup> F. Gross, *Koczownictwo. Studia nad nomadyzmem i nad wpływem tegoż na społeczeństwo, ustrój i państwo*, Kasy im. Mianowskiego – Instytut Popierania Nauki, Warsaw – Pałac Staszica, 1936.

<sup>4</sup> W. Bęben, *Aborygeni, pierwsi nomadzi. Życie i kultura* (Aborigines, the first nomads. Life and culture), Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2012.

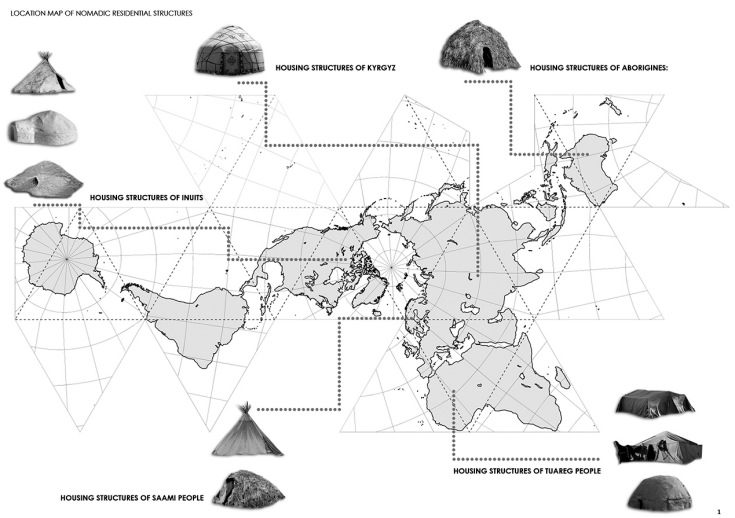
<sup>5</sup> Internet source: <http://www.pbm.com/~lindahl/articles/yurt/> (access: 02.07.2019).



1



2



3

- III. 1. Types of Tuareg tents, author: Anna M. Berbesz, source: Berbesz A., *Motyw ruchu w architekturze. Struktury mobilne stacjonujące tymczasowo jako alternatywna próba kształtowania obiektów architektonicznych na podstawie wybranych przykładów z przełomu XX/XXI w.*, doctoral dissertation on the typescript rights, Wrocław 2017
- III. 2. The structure of the Kyrgyz yurt, author: Anna M. Berbesz, source: *ibidem*
- III. 3. Map of the location of nomadic residential structures, author: Anna M. Berbesz, source: *ibidem*

is quinzhee, which arises as a result of snowmelt drifting, for temporary accommodation in case of a sudden change in weather<sup>6</sup>. The indigenous Saami communities are inhabited *goathe* structures which quasi-dome structure is made of wood, bricks, and the outer shell is lined with sod and soil. Shepherds dealing with the grazing of animals lived in temporary structures of the *lavvo* type, analogous in shape to Inuit *tupik* and *tipi* of American Indians<sup>7</sup> (Ill. 3).

The traditional concept of nomadism has now been transforming into the issue of neo-nomad – a modern man in motion. Mobility and movement can be understood in many dimensions and are one of the reasons for the dynamization of humanity, with the simultaneous threat of uncontrolled development. Search for solutions related to the motive of movement, mobility, and dynamics transferred to the language of the 21st century, are reflected in numerous trends and realizations in the field of art and architecture.

### 3. THE CONCEPT OF MOVEMENT IN ART

The phenomenon of movement has been attempted to show in art since the beginning of its existence. Numerous rock paintings were the first substitute for showing the spectrum of dynamics. According to Edward T. Hall, art was one of the first attempts to dominate man over nature. For a Paleolithic artist, recreating the image of a given creature or event could be the first step to gain power over it, to master and tame the world around it<sup>8</sup>. According to the rate at which the very movement of the human individual underwent transformations, he was similarly shown in art. Art, however, limited only by the imagination and technique of the artists themselves, was ahead of the movement's motif in creative expression.

#### 3.1. PHENOMENON OF MOVEMENT IN THE CONCEPT OF FUTURISM

A breakthrough in thinking about mobility in art and architecture was the manifesto of the revolutionary movement called Futurism<sup>9</sup>, which purpose was to create a new relationship with the surrounding world and a new sensitivity: 'Futurism was therefore an anthropological project: a new vision of a man facing the world of machines, speed and technology'<sup>10</sup>. The goal of futurism was to transfer the power of art to the very center of society's life. The futurist's intention was to combine the work of art with the civilization of the city, with the vital experience of urban space. Hence a series of activities functioning on the borderline of sensory experiences: kinetic sculptures, mobile, art of touch, abstract theater, or simultaneous games. According to Marinetti's vision, futurism deified temporariness and ephemerality, rejecting all utopian speculation. He rejected all historical achievements and traditions, introducing unhampered worship of modernity in their place, coinciding with a series of discoveries in the fields of chemistry, electricity, and technology<sup>11</sup>.

---

<sup>6</sup> Internet source: <https://www.britannica.com/technology/igloo> (access: 02.07.2019).

<sup>7</sup> Internet source: <https://www.norwegofil.pl/ludzie-i-tradycje/saamowie-czy-laponczycy> (access: 02.07.2019).

<sup>8</sup> E. T. Hall, *Ukryty wymiar* (Hidden dimension), Państwowy Instytut Wydawniczy, Warszawa 1978.

<sup>9</sup> The official moment of the beginning of Futurism is considered January 1909, when the manifesto created by the writer Filippo Tommaso Marinetti was announced in Milan in: G. Lista, *Futuryzm*, Arkady, Warszawa 2002, pp. 10–11.

<sup>10</sup> *Ibidem*, p. 10.

<sup>11</sup> *Ibidem*, p. 10–11.

The 1930s brought works belonging to the ‘futuristic aeropainting’ which aims to illustrate the dynamism of travel and to present the experience of space in a symbolic and spiritual sense. The authors of these works were, among others Mino Delle Site, Tulio Crali, Fedele Azari, Tato, Filippo Masoero. At the beginning of the 20th century, Futurism symbolized experiences made of sounds, colors and city architecture in motion. Aeropainting (Aeropittura) led to a complete detachment from the world<sup>12</sup>.

### 3.2. ATTEMPT TO STOP MOTION – PHENOMEN OF CHRONOPOTOGRAPHY

Experiments with ‘stopping motion’ and showing its spectrum have also reached the area of photography. At the end of the 19th century, the ‘instantaneous’ photography started to appear, allowing the image to be captured in a fraction of a second. Initially, the field of photography was practiced by a small group of people about artistic preparation, only at the moment when scientific and technical experiments also affected the field itself, began to deviate from the traditional aesthetic principles towards, e.g. mass culture standards.

A significant breakthrough in the history of photography were experiments aimed at recording individual phases of movement, carried out in 1872 by Eadweard Muybridge and continued by Étienne-Jules Marey. At that time, numerous experiments were carried out involving humans and animals, which were made possible by the use of highly-sensitive negatives and snapshots. The results of these activities forced to verify the views of the nature of the movement and its presentation in art at the time<sup>13</sup> (Ill. 4).

The artist, from the futurist group dealing with photography, was Anton Giulio Bragaglia, creator of the Manifesto of futuristic photodynamics published in 1912. The manifesto contained the critique of the analysis of the movement by E. Muybridge and E. Marey, and its aim was to show the specific dematerialization of objects and people ascribing transcendent experiences to motives of movement. In addition, A. G. Bragaglia sought to deepen sensory experiences by attempting to develop new forms of perception (additionally he even soaked up his photographs with scents). Fascination with movement was also visible in the works of František Kupka and Marcel Duchamp, who made several versions of the Act descending the stairs inspired by chronophotography. In spite of his novel approach, A. Bragaglia and M. Duchamp had a lot of difficulties with exhibiting their works among futurists or the Paris avant-garde. The new field has also been criticized by pictorial-photographers, including Robert de la Sizeranne<sup>14</sup>.

### 3.3. *MOBILE* BY ALEKSANDER CALDER – DEVELOPMENT OF A KINETIC ART

The 20th century began with the search for the simplicity of form and, at the same time, expression of the word in art. Movement and mobility, understood in the literal sense, also entered the creative area of the sculpture, which in consequence was the driving force behind the creation of the so-called kinetic sculptures. The forerunner of this new art area was Alexander

<sup>12</sup> *Ibidem*, p. 167–187.

<sup>13</sup> A. Sobota, *Wyrzaz czasu w fotografii* (The Expression of Time in Photography), Dyskurs, 2008, no. 7, Internet source: [https://www.asp.wroc.pl/?module=StaticContent&controller=Main&id=760&\\_\\_seoName=Dyskurs+7](https://www.asp.wroc.pl/?module=StaticContent&controller=Main&id=760&__seoName=Dyskurs+7) (access: 02.07.2019).

<sup>14</sup> *Ibidem*, pp. 243–247.

Calder – sculptor, illustrator, painter and graphic artist, member of the *Abstraction-Création* group. A. Calder studied engineering at the Stevens Institute of Technology in Hoboken, New Jersey, and in 1926 moved to Paris, where he began his studies at Académie de la Grande Chaumière<sup>15</sup>. Around 1930, he visits Piet Mondrian's studio, which was a great inspiration for him. As a result of this visit, his first 'Stabile' were created consisting of metal elements connected in such a way that they appear extremely light. The most characteristic of his works is the so-called 'Mobile' which is an interesting combination of art, technology, and science. The use of the laws of physics based on shifting the center of gravity below the fulcrum was the essence of constructing 'Mobile'. The first 'Mobile' were presented in Galerie Vignon in Paris in 1932 and were a combination of metal parts, wire and wooden elements creating a light vision of the movement's poetics. In an interview in 1962 in *The Artist's Voice: Talks with Seven-Teen Artists*, the question: what was the impact of nature and modern machines on his work, he replied: 'Nature. Actually, I had little contact with machines, apart from a few elements of mechanisms like leverage or balance. You see nature and try to imitate it. (...) The basis of everything for me is the universe. The simplest form in the universe is the sphere and circle. I present them as disks and then differentiate them. My whole theory about art is the difference between form, mass, and movement. Even my triangles are spheres, but spheres with a different shape'<sup>16</sup>.

In the circle of creators of kinetic sculptures is also George Rickey, whose work influenced constructivism. He created geometrically clean objects, mostly stainless steel suspended on bearings. Another artist based on the movement of objects is Rowland Emmett, who created a funny 'mobile', including 'Tea sweetener' or 'breakfast machine'. The classic 'mobile' is also constructed by Tom Brewitz using stainless steel, and the movement of individual parts is caused by the strength of the wind<sup>17</sup>.

Abstract and objectless art tried to establish a dialogue also between architecture and society. The motif, which already in the period preceding the First World War brought a new trend in art and designs of glass buildings, was the metaphysics of light. In the 1920s, the first beginnings of cooperation between art representatives and architects and town planners took place. Abstract concepts and the search for new, clean and devoid of detail forms had a certain impact on the development of rationalism in architecture<sup>18</sup>.

#### 4. MOVEMENT IN ARCHITECTURE

The motif of movement in the architecture of the 20th and 21st centuries assumed a variety of reverberations depending on the historical context and technological development. In the architectural nomenclature, a number of concepts related to the issue of motion appear

---

<sup>15</sup> Internet source: <http://www.alexander-calder.com> (access: 02.07.2019).

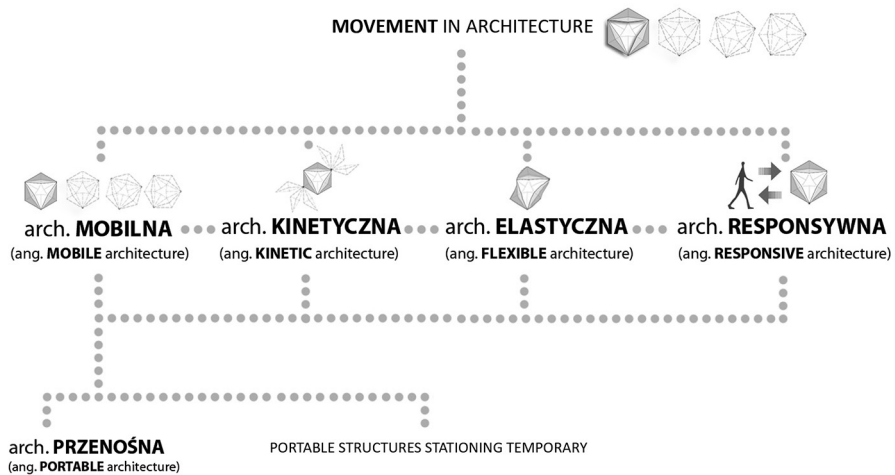
<sup>16</sup> A. Calder (interview) [in:] K. Kuh, *The Artist's Voice: Talks with Seventeen Artists*, Harper & Row, New York 1962, Internet source: <http://www.calder.org/life/system/downloads/1962-Artists-Voice.pdf> (access: 02.07.2019).

<sup>17</sup> A. Kwiecińska-Utkin, *Zachwycające maszyny*, Młody Technik, 2005, no. 3, Internet source: [www.mt.com.pl/archiwum/03-2005\\_sztuka\\_technika.pdf](http://www.mt.com.pl/archiwum/03-2005_sztuka_technika.pdf) (access: 02.07.2019).

<sup>18</sup> M. Dantini, *Sztuka współczesna* (Modern Art.), Wydawnictwo Naukowe PWN, Warszawa 2007, pp. 64–66.



4



5

- III. 4. Étienne-Jules Marey, Chronophotography, *Long jump from a standing position*, around 1882, source: <https://przekroj.pl/media/foto/cialo-pozza-czasem/3> (access: 02.07.2019)
- III. 5. Diagram of the movement motif in architecture, author: Anna M. Berbesz, source: Berbesz A., *op. cit.*

contemporary, i.e. mobile architecture, including portable structures, responsive, flexible, variable, transformable and kinetic architecture. Individual trends in the implementation plane can permeate each other, often forming a compilation of these concepts (Ill. 5). Experimental facilities, which often include solutions related to the broadly understood movement, are created incidentally for the needs of specialist exhibitions, including construction or commercial. Experimental designs are created to shape the way for new, innovative forms of design and are an integral part of many industries<sup>19</sup>.

## 5. SUMMARY

The contemporary lack of unambiguous ways of shaping urban and architectural solutions allows to conclude that there is currently no one optimal design solution. Modern neo-nomads – people in motion, solutions based on the broadly understood movement can open new ways of functioning in the surrounding reality by ensuring free movement along with their own residential structure, including solutions that enter the virtual reality area. Such a perspective changes the way of looking at shaping spatial planning, which would not only include static architectural objects, but also dynamic, portable structures that change the surrounding space in real time.

## References

- [1] Berbesz A., *Motyw ruchu w architekturze. Struktury mobile stacjonujące tymczasowo jako alternatywna próba kształtowania obiektów architektonicznych na podstawie wybranych przykładów z przełomu XX/XXI w.*, doctoral dissertation on the typescript rights, Wrocław 2017.
- [2] Bęben W., *Aborygeni, pierwsi nomadzi. Życie i kultura*, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2012.
- [3] Calder A. (interview) [in:] K. Kuh, *The Artist's Voice: Talks with Seventeen Artists*, Harper & Row, New York 1962, Internet source: <http://www.calder.org/life/system/downloads/1962-Artists-Voice.pdf> (access: 02.07.2019).
- [4] Dantini M., *Sztuka współczesna*, Wydawnictwo Naukowe PWN, Warszawa 2007.
- [5] Gross F., *Koczownictwo. Studia nad nomadyzmem i nad wpływem tegoż na społeczeństwo, ustrój i państwo*, Kasy im. Mianowskiego – Instytut Popierania Nauki, Warszawa – Pałac Staszica, 1936.
- [6] Hall E. T., *Ukryty wymiar*, Państwowy Instytut Wydawniczy, Warszawa 1978.
- [7] Ingold T. (in the conversation with K. Wala, M. Zych), *Ruch, w którym jesteśmy, zawiera też ruch naszych myśli*, Autoportret. Pismo o dobrej przestrzeni, 2014, no. 2 [45].
- [8] Kwiecińska-Utkin A., *Zachwycające maszyny*, Młody Technik, 2005, no. 3, Internet source: [www.mt.com.pl/archiwum/03-2005\\_sztuka\\_teknika.pdf](http://www.mt.com.pl/archiwum/03-2005_sztuka_teknika.pdf) (access: 02.07.2019).
- [9] Kronenburg R., *Portable architecture. Design and Technology*, Birkhäuser, Basel 2008.
- [10] Lista G., *Futuryzm*, Arkady, Warszawa 2002.

---

<sup>19</sup> R. Kronenburg, *Portable architecture, Design and Technology*, Birkhäuser, Basel 2008.

- [11] Sobota A., *Wyraz czasu w fotografii* (The Expression of Time in Photography), Dyskurs, 2008, no. 7, Internet source: [https://www.asp.wroc.pl/?module=StaticContent&controller=Main&id=760&\\_\\_seoName=Dyskurs+7](https://www.asp.wroc.pl/?module=StaticContent&controller=Main&id=760&__seoName=Dyskurs+7) (access: 02.07.2019).
- [12] Internet source: <http://www.alexander-calder.com> (access: 02.07.2019).
- [13] Internet source: <http://www.pbm.com/~lindahl/articles/yurt/> (access: 02.07.2019).
- [14] Internet source: <https://www.norwegofil.pl/ludzie-i-tradycje/saamowie-czy-laponczycy> (access: 02.07.2019).

**Author's note:**

Works as a teaching and research assistant at the Faculty of Architecture (Wrocław University of Science and Technology). Currently, she concentrates her scientific and research work on the movement in architecture, in particular mobile structures stationed temporarily in urbanized and non-urbanized areas. She is the author of scientific articles related to the movement in architecture and biomimetic solutions.