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ARCHITECTURAL AND URBAN DESIGN OF "HIPPIE MODERNISM" AS AN INSPIRATION FOR FILM SET DESIGNERS

ARCHITEKTONICZNE I URBANISTYCZNE IDEE TZW. HIPPISOWSKIEGO MODERNIZMU JAKO INSPIRACJA DLA SCENOGRAFÓW FILMOWYCH

Abstract

After ecological disasters, such as the Great Smog of London or the mercury epidemic in Minamata, Japan, architects started to pay even more attention to environmental problems. Public interest is generated by bold and uncompromising ideas of visionaries identifying themselves with the counterculture movement, e.g. Paolo Soleri and Buckminster Fuller. The dome covering New York's Manhattan or expressive, pro-ecological cities – arcologies, although they have no chance of real implementation due to the high cost of investment, quickly become an inspiration for film set designers. Productions such as "Logan's Run", "Silent Running" or "Star Wars" not only include transformed ideas of the architects, but also enter into a discourse with them. The aim of the article is to show the multifaceted relationship between the world of architectural and film creativity of the period of the so-called "hippie modernism".

Keywords: scenography, hippie modernism, cinematography, fantasy, architecture, film

Streszczenie

Po katastrofach ekologicznych, takich jak Wielki Smog londyński czy epidemia rtęcicy w japońskiej Minamacie, architekci coraz częściej zaczynają zwracać uwagę na problemy środowiska naturalnego. Zainteresowanie opinii publicznej generują śmiałe i bezkompromisowe pomysły wizjonerów utożsamiających się z ruchem kontrkultury, m.in. Paolo Soleriego czy Buckminstera Fullera. Kopuła przykrywająca nowojorski Manhattan czy ekspresyjne, proekologiczne miasta – arkologie, choć ze względu na wysoki koszt inwestycji nie mają szans na rzeczywistą realizację, szybko stają się inspiracją dla scenografów filmowych. Produkcje takie jak „Ucieczka Logana", „Niemy Wyścig" czy „Gwiezdne Wojny" nie tylko przetwarzają pomysły architektów, ale też wchodzą z nimi w dyskurs. Celem artykułu jest ukazanie wielopłaszczyznowej zależności pomiędzy światem twórczości architektonicznej i filmowej okresu tzw. hippisowskiego modernizmu.

Słowa kluczowe: scenografia, hippisowski modernizm, kinematografia, fantastyka, architektura, film

1. INTRODUCTION

The term "hippie modernism", which is used to clearly distinguish the counter-cultural architectural projects from the 2nd half of the 20th century, may raise various controversies. First of all, the described constructions often lack the clarity and order which are strongly associated with modernist architecture. Secondly, artists, whose projects are classified as

"hippie modernism", such as Paolo Soleri, sometimes dissociated themselves from the hippie subculture in their statements[1]. Even despite the fact that "hippie modernism" is neither fully modernist nor completely hippie, it clearly stands out from other architectural trends due to its utopian and philosophical character[2]. According to Greg Castillo, it was the social, political or ecological message that was the most important in "hippie modern" projects and factors such as the form of the building, its beauty or functionality receded into the background[3].

The second, extremely important feature of "hippie modernism" is the commitment of its creators to the protection of the natural environment. The fascination with ecological issues has a deeper justification in this case; a vast number of highly publicized disasters linked to man-made pollution happened in the 1950s and 1960s[4]. The mercury epidemic in Japan's Minamata and the New York Smog of 1966 are just two of many examples of similar events[5]. The most tragic, however, is the so-called Great Smog of London, when the above-average concentration of poisonous substances in the air led to the deaths of as many as 12,000 Britons[6].

Solving a problem of such a huge scale can only take place on the basis of bold and uncompromising design. Architects classified as "hippie modernism" did not limit themselves to solutions within a single building; they designed on an urban scale, taking into account that their bold ideas may never be implemented. The boldness of the proposed assumptions, however, quickly began to stimulate the imagination of science-fiction filmmakers. Inspired by the proposals of architects, they created complex futuristic worlds.

The conducted research clearly proves that the world of architectural creativity and popular culture complement each other. The architectural and film examples selected in the work not only operate in a similar thematic area, but also clearly show how the patterns characteristic of "hippie modernism" passed from the architectural scale to the urban one. Due to the fact that the characteristic feature of hippie premises was their separation from the outside world, the work was divided into three parts, guided by the degree of isolation. The concepts of a city separated geographically, architecturally and hermetically will be discussed within the following chapters.

2. THE CONCEPT OF A GEOGRAPHICALLY ISOLATED CITY: HIPPIE COMMUNITIES AND "STAR WARS"

Buckminster Fuller is undoubtedly the figure from which any discussion of "hippie modernism" should begin. This architect, philosopher, and inventor was the driving force behind hippie communities across the United States[7]. However, before he became an icon of the counterculture, as a young man starting his professional career, he lost significant funds

[1] M. Grimason, *Arcosanti, the commune for millenial dreamers in the middle of Arizona Desert* [in:] The Independent, 29.06.2017, https://www.independent.co.uk/travel/americas/arcosanti-arizona-paolo-solari-accommodation-festivals-millennial-a7810231.html (access: 12.05.2022).

[2] G. Castillo, *Hippie Modernism* [in:] "Places", October 2015, https://doi.org/10.22269/151026 (access: 12.05.2022).

[3] *Ibidem*.

[4] S.A. Abbasi, T. Abbasi, *Ozone Hole: Past, Present, Future*, Springer, New York 2017, p. 1.

[5] *Ibidem*.

[6] S. Callery, *Victor Wouk: The Father of the Hybrid Car*, Cabtree Publishing Company, New York 2009, p. 24.

[7] J.A. Moretta, *The Hippies: A 1960s History*, McFarland & Company, Jefferson 2017, p. 249.

and found himself in an extremely difficult situation[8]. Financial problems were compounded by a complicated personal situation and the tragic death of a little daughter[9]. The ballast of traumatic experiences seemed insurmountable to Fuller, and the only solution he initially saw was to take his own life[10]. During many hours of thinking, however, he managed to overcome self-destructive thoughts and find a new purpose; Fuller decided to work for the good of the human community[11]. He was to devote his entire life to the altruistic mission[12]. "Do more with less"[13] is the motto that was to define future path of his professional development.

As a result, Fuller began to create interesting, cheap and functional objects, using as little materials and energy as possible. His first projects were Dymaxion House, a prefabricated, aluminum single-family house suspended on a central mast[14] and the Dymaxion Car, a three-wheeled car with an extremely small turning radius[15]. Soon Fuller began to focus in his research on polyhedra representing a spherical surface. Their architectural use perfectly matched the assumptions adopted by the architect: the dome shape allowed covering large spans with minimal profile thickness. Profiles, on the other hand, thanks to the use of the geometry of regular polyhedrons, had a repeatable shape, facilitating serial production, which minimized investment costs. The idea immediately became a huge success on the commercial market and Fuller conducted projects based on it all over the world.

At the same time, the architect was interested in ecological and philosophical issues, which resulted in numerous publications in this field, for example "Operating Manual for the Spaceship Earth"[16]. His books were highly praised among the representatives of the hippie movement, contributing to the popularity of Fuller's architectural achievements. Young people who left cities and moved to the wild, unpopulated areas in the 1970s to build communities and live on farming, artistic activities or traditional crafts, willingly gave their houses the shape of geodesic domes. The buildings, made by the investors themselves, freely arranged in space, were often decorated with fanciful, painted patterns, which created a special atmosphere of the hippie towns. This phenomenon even gained its name in the literature – "back-to-the-land", and Michel Chevalier calls its participants "neo-peasants"[17]. Examples of such communities include Drop City in California and Synergia Ranch in New Mexico.

One of the reasons why young men decided to leave the cities was also the fear of the draft lottery,[18] conscription into the US army and forced participation in the Vietnam War. The hippie movement was characterized by far-reaching pacifism, manifested not only in the reluctance to participate in warfare, but also in anti-war manifestations. In this context, it may

[8] A. Krebs, *R. Buckminster Fuller, futurist inventor, dies at 87* [in:] "The New York Times", 3.07.1983, https://www.nytimes.com/1983/07/03/obituaries/r-buckminster-fuller-futurist-inventor-dies-at-87.html (access 12.05.2023).

[9] *Ibidem*.

[10] *Ibidem*.

[11] *Ibidem*.

[12] S. Jones, *Solar Power of the Future: New Ways of Turning Sunlight Into Energy*, The Rosen Publishing Group Inc., New York 2003, p. 29.

[13] C. Schittich, *Small structures: compact dwellings, temporary structures, room modules*, Edition Detail, Basel 2010, p. 58.

[14] J. Baldwin, *BuckyWorks: Buckminster Fuller's ideas for today*, John Wiley and Sons, New York 1996, pp. 22–26.

[15] *Ibidem*, pp. 88–89.

[16] R.B. Fuller, *Operating Manual for Spaceship Earth*, Lars Müller Publishers, Baden 2008.

[17] M. Chevalier, *Neo-rural phenomena*, „L'Espace Géographique" 1993, no. 1, pp. 175–191.

[18] N.M. Rosinsky, *The Draft Lottery*, Compass Point Books, Minneapolis 2009.

be a bit surprising that one of Buckminster Fuller's largest projects, a 125-meter spherical vault, was commissioned by the American army[19].

Of course, not all hippie communities used the form of geodesic domes. The projects were often created in an isolation from any patterns, manifesting the creativity and independence of their authors. Many interesting examples of this type of objects can be found in the book "Handmade houses: A Guide to the Woodbutcher's art"[20].

One of the most interesting examples of alternative community architecture is undoubtedly Arcosanti, founded by a student of Frank Lloyd Wright himself, Paolo Soleri[21]. The project was intended to represent a model "arcology"[22]. This term, which meant a small, highly compressed and ecological city, was coined by Soleri as a mixture of the words "architecture" and "ecology"[23]. The complex, built for many years on a desolate desert plot, was created in a technology called "earth casting" which included casting concrete shapes in molds dug in the ground[24]. As in similar settlements, the works were carried out based on the physical work of the investor, his friends and volunteers. Therefore, architectural critics sometimes refer to the project as a "low-tech" construction[25].

Interestingly, the complex quickly became a tourist attraction, and one of the people who visited it was young George Lucas. The director later transformed its characteristic mood to the film vision of the planet Tatooine[26]. However, not only "Arcosanti" found its place in "Star Wars"[27] – friendly alien races living in natural surroundings on planets such as Endor or Kashyyyk definitely implement the hippie ideal of living in accordance with nature, while Master Yoda's home is an ordinary mud hut. All this makes some researchers even write about the film's "technophobia" – advanced machines and materials are used here only by the negative characters[28].

3. THE CONCEPT OF AN ARCHITECTURALLY ISOLATED CITY – "CLIMATIC SKIN" FOR NEW YORK'S MANHATTAN AND THE CITY FROM THE MOVIE "LOGAN'S RUN"

Urban structures or individual buildings can be separated from the outside world not only by geographical location, but also by physical partitions. The American pavilion

[19] A. Krebs, *op. cit*.

[20] A. Boericke, B. Shapiro, *Handmade Houses: A Guide to the Woodbutcher's Art*, Scrimshaw Press, Chêne, San Francisco, Paris 1973.

[21] D. Levinson, K. Christansen (eds.), *Encyclopedia of Community: From the Village to the Virtual World*, vol. 1, Sage Publications, Thousand Oaks 2003, p. 54.

[22] *Ibidem*.

[23] *Ibidem*.

[24] C.D. Smith, *Productive matters: The DIY Architecture Manuals of Ant Farm and Paolo Soleri*, PhD thesis, University of Sydney 2012, pp. 70–74.

[25] D. Gauzin-Müller, *Sustainable Architecture and Urbanism: Concepts, Technologies, Examples*, Birkhäuser, Basel 2002, p. 16.

[26] A.S. Queen, *Arcosanti: Death to the Automobile* [in:] National Geographic, 15.06.2012, https://www.nationalgeographic.com/travel/intelligent-travel/2012/06/15/arcosanti-death-to-the-automobile/ (access: 20.05.2023).

[27] G. Lucas, *Star Wars, Episode IV: A New Hope*, 20th Century Fox, USA 1977.

[28] J. Haines, *Music in Films on the Middle Ages. Authencity vs. Fantasy*, Routledge, New York 2014, p. 149.

"Biosphere", which was enclosed in a spherical structure with a diameter of 76 meters, built by Buckminster Fuller for the fair in Montreal, can be an example of such a solution[29].

However, it was another, even more spectacular project by the American architect that was to change science-fiction cinematography forever. The concept from 1960, created together with Shoji Sadao, envisaged enclosing the entire New York's Manhattan in a giant hemisphere[30]. The architect claimed that he had carried out detailed calculations indicating that the creation of a megastructure with a diameter of 3.2 km was theoretically possible[31]. In his opinion, the investment would be justified by energy gains: Fuller's research showed that the area of the dome was 80 times smaller than the area of the external partitions of the skyscrapers enclosed under it[32]. According to the architect, the effect would be a five-time reduction in energy demand for the entire district, which from now on would only be heated by apartment lights and street lamps[33]. Of course, the problem of removing snow from the streets would also be completely solved, which would generate such significant savings that, according to Fuller's calculations, the investment would pay for itself after 10 years[34]. Another advantage would be the ability to collect rainwater, which would be stored and used during periods of its shortage in New York[35]. Unfortunately, the bold concept of the American architect was not implemented, just like other, equally bold "climate skin"[36] ideas (e.g. "The Arctic City" by Frei Otto, 1971[37]).

Domed roofs that isolate cities, although they did not emerge outside the imagination of architects, have been permanently rooted in science-fiction literature and cinematography. One of the earliest examples of their depiction may be the movie "Logan's Run"[38], which is a satire on the American generation of contestation. Its plot is based on the slogan "don't trust anyone over 30", popular in the American counterculture and hippie movement, originating from the liberation protests at the University of Berkeley[39]. The described lack of trust in the world of the movie gives rise to a law that forces every citizen to undergo euthanasia on their thirtieth birthday. Sheltered in a domed metropolis from an ecological catastrophe, the inhabitants pay an extremely high price for a hedonistic way of life devoid of moral constraints.

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[29] L.S. Wood, *A More Perfect Union: Holistic Worldviews and the Transformation of American Culture after World War II*, Oxford University Press, New York 2010, p. 80.

[30] D. Budds, *How Buckminster Fuller Made A Dome Over Manhattan Sound Sensible* [in:] Fast Company, 31.03.2016, https://www.fastcompany.com/3058386/how-buckminster-fuller-made-a-dome-over-manhattan-sound-sensible (access: 20.05.2023).

[31] *Ibidem*.

[32] *Ibidem*.

[33] *Ibidem*.

[34] *Ibidem*.

[35] *Ibidem*.

[36] J. Wurm, *Glass structures: design and construction of self-supporting skins*, Birkhäuser, Basel, Boston 2007, pp. 22–24.

[37] C. Porteous, *The New Eco-Architecture: Alternatives from the Modern Movement*, Spon Press, New York 2002, p. 221.

[38] M. Anderson, *Logan's Run*, Metro-Goldwyn-Mayer, USA 1976.

[39] K.P. Fischer, *America in White, Black, and Gray: A History of the Stormy 1960s*, Continuum, New York, London 2006, p. 263.

4. HERMETICALLY ISOLATED CITY CONCEPT, "BIOSPHERE 2" AND "SILENT RUNNING" MOVIE

The Buckminster Fuller's term "Synergy" means a situation where the simultaneous occurrence of two factors gives better results than their direct arithmetic sum, for example, the simultaneous taking of two medicines enhances the effect of each of them[40]. In a sense, such a situation actually took place in the already mentioned Synergia Ranch complex. During one of the meetings organized by its founder, John P. Allen, he met the multi-millionaire Ed Bass, with whom he became friends and shared a fascination with ecophilosophy[41].

During the stormy debates, the gentlemen came up with the idea of establishing the "Institute of Eco-technics", the main goal of which was to conduct research on the possibility of transferring terrestrial ecosystems into space. Of course, the research was supposed to lead in the long run to the possibility of creating self-sufficient, extraterrestrial colonies in which plants would produce oxygen and provide food for astronauts. A number of state-owned agencies had already been analyzing similar problems: "Bios 3", "Biohome" and "Project Melissa",[42] however, none of them conducted an experiment as bold and extraordinary as Ed Bass's privately funded Institute of Ecotechnics.

In the Sonoran Desert in Arizona, a complex of greenhouses with a total area of slightly more than a hectare has been located[43] accommodating over 4,000 different species of plants. Separate biomes – swamp, desert, ocean with a coral reef, savannah and rainforest were designed as a perfect copy of often distant ecosystems[44]. In a sense, a miniature of the Earth's biosphere, the layer of the planet where life occurs, was created. However, the name of the complex – "Biosphere 2" referred also to something else. It clearly expressed the continuation of the earlier idea by Buckminster Fuller, the Montreal Biosphere.

The most interesting feature of the complex, which distinguished it from the winter gardens or the palm house, was almost perfect hermeticity. Specially designed by Bill Dempster and Peter Pearce, the curtain walls were subjected to a detailed study after construction – gas detectors were placed around the building in a cavity, and then the building was filled with volatile chemicals with a density greater than that of air[45]. Thanks to this, it was possible to detect and repair even the smallest imperfections of the façade. The entire project was a success and the rate of air exchange during the year did not exceed 10%[46].

In the tower connected to the greenhouses, there were living quarters and an extensive library[47]. It was there, in 1991, that a group of eight volunteers lived. For two years they were

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[40] J. Wrana, *Synergia w nieidealnym mieście „idealnym" – próby integrowania Zamościa*, „Budownictwo i Architektura", 2017, vol. 16, no. 1, pp. 5–17.

[41] D. Oberhaus, *A 21st Century 'Operating Manual for Spaceship Earth'* [in:] Vice, 10.06.2017, https://www.vice.com/en_us/article/wjqnxy/the-decades-long-quest-to-recreate-earth-in-miniature (access: 20.05.2023).

[42] *Ibidem*.

[43] P.F. Downton, *Ecopolis: Architecture and Cities for a Changing Climate*, CSIRO Publishing, Collingwood 2009, p. 59.

[44] D. Oberhaus, *op. cit*.

[45] M. Nelson, *Pushing Our Limits: Insights from Biosphere 2*, The University of Arizona Press, Tucson 2018, pp. 37–38.

[46] *Ibidem*.

[47] *Ibidem*, p. 33.

supposed to eat the crops of their own agricultural plantations and breathe the air produced by the plants gathered in the greenhouses[48]. However, as it turned out, living in a space city is not easy at all, even if it is located on Earth.

First, as it turned out, despite the considerable size of the enclosed space, the oxygen level in the building began to decrease quickly, reaching a level of only 14%[49]. This was due to both the inefficient process of photosynthesis, which characterizes closed plants, and its absorption by binding concrete foundations[50]. As a consequence, the organizers of the experiment decided to introduce additional oxygen into the structure.

Secondly, the crops did not produce the expected yields, so each of the participants in the experiment lost an average of 12 kilograms during its duration. In greenhouses, on the other hand, nuisance insects which were introduced to maintain the balance of the ecosystem, multiplied extremely quickly[51].

All of the above factors, combined with prolonged confinement in a closed space, caused conflicts within the group, which eventually led to its split into two independent, hostile factions[52].

The experiment was stopped untimely, after only 18 months, and its result was an unequivocal demonstration that creating a self-sufficient ecosystem even in favorable terrestrial conditions is an extremely difficult and perhaps even impossible task. The very fact of undertaking such an attempt and allocating $150 million from Edward Bass's private funds undoubtedly proves his deep belief in the possibility of creating an ecological space city[53].

As Lee Bailey notes, the investment was a manifestation of the pursuit of "guiding myths" taken from cinema and science fiction literature. In the context of the experiment, it is worth paying attention to the film "Silent Running"[54], which tells a story about a space cruiser storing the last specimens of earthly flora in greenhouses shaped like geodesic domes. Perhaps this is how the creators of the "Institute of Ecotechnics" imagined the near future.

5. SUMMARY

Finally, it is worth noting that the three architectural and urban concepts described in this article are presented in chronological order. However, it is also easy to notice that each subsequent vision is bolder and more uncompromising than the previous one. While communal, hippie communities geographically isolated from urban agglomerations often functioned properly for decades (and some have survived to this day), closing buildings inside "climate skins" was only possible on a relatively small scale. The idea of creating closed, hermetic ecosystems intended for human stay ended in an almost complete failure.

Individualism and the courage to search for new models of life certainly characterize the architectural and urban realizations of the period of "hippie modernism". It was this escape from the dynamic, capitalist society and turning towards nature and close interpersonal

[48] L.W. Bailey, *The Enchantments of Technology*, University of Illinois Press, Urbana 2005, p. 23.
[49] *Ibidem*.
[50] *Ibidem*.
[51] *Ibidem*.
[52] D. Oberhaus, *op. cit*.
[53] *Ibidem*.
[54] D. Trumbull, *Silent Running*, Universal Pictures, USA 1972.

relationships that attracted and still attracts young people. There is no doubt, however, that their wide presence in popular culture also contributed to the popularization of hippie architectural ideas. Science-fiction cinematography, inspired by the most spectacular ideas of architects from the period of hippie modernism, subconsciously evoked pro-ecological interests in generations of viewers.

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