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ARCHITECTURE OF TRUE NEEDS. THE EXAMPLES OF CONTEMPORARY, CULTURALLY SENSITIVE, LOW-BUDGET BUILDINGS IN ASIA

ARCHITEKTURA POTRZEB. PRZYKŁADY WSPÓŁCZESNYCH, WRAŻLIWYCH KULTUROWO, NISKOBUDŻETOWYCH OBIEKTÓW Z AZJI

Abstract

The search for truth in architecture can be considered in the context of real human needs. Analysis of facilities from Asia designed by famous architects showed that their architecture responds to the real needs of the community in the face of danger with its minimal impact on the environment for next generations. The facilities rescuing the whole society, not only individuals can be an inspiration for new challenges in design in welfare countries. The study of real human needs, taking into account climate and socio-economic change, requires interdisciplinary research.

Keywords: true needs, identifying needs, low budget culturally sensitive architecture, cooperation architect – society

Streszczenie

Poszukiwanie prawdy w architekturze można rozważać w kontekście prawdziwych potrzeb człowieka. Analiza niskobudżetowych obiektów w Azji zaprojektowanych przez znanych architektów wykazała, że powstały w odpowiedzi na potrzeby społeczności w obliczu zagrożenia i dla zachowania równowagi w środowisku dla przyszłych pokoleń. Przykłady te chroniące całą społeczność, a nie tylko jednostkę, mogą stanowić inspirację dla nowych wyzwań projektowych w krajach dobrobytu. Badanie prawdziwych potrzeb uwzględniające zmiany społeczno-ekonomiczne i klimatyczne wymaga interdyscyplinarnej współpracy.

Słowa kluczowe: prawdziwe potrzeby, badanie potrzeb, architektura niskobudżetowa–kulturowo-wrażliwa, współpraca architekt–społeczność

1. INTRODUCTION

The pursuit of truth in all areas of life, including architecture, has always accompanied people. In the author's opinion, the search for truth in architecture should also refer to the real needs of man, which was perfectly emphasized by the Brazilian architect Jamie Lerner in these words – "Architecture is good when it arises from real needs."¹

¹ M. Wiśniewski, *Społeczna rola architekta*, Architektura – Murator, 2019, no. 11, p. 34.

Recent history has shown that in developed countries (especially in western Europe), architecture was indeed responsible for the various needs of society that maximize the comfort of people's lives, or at least those who can afford it, i.e. travel, festivals, various meetings and events, practicing extreme sports, pursuit of luxury goods. At the same time, architecture has become flexible and adaptable to various manifestations of human activity, responding to them in a changing time and space. It flexibly adapted to the growing needs and whims, creating the right space for their constant changes, often overloading and exploiting the natural environment excessively.

In the times of an unexpected outbreak of a pandemic, it is worth considering which of these manifestations of human life were real and which were artificially created by the market and consumerism mechanisms. The system that was striving for continuous growth suddenly collapsed. The pandemic caused by the SARS-CoV-2 virus and the halting of unrestrained production have made people realise what they actually need in life and have also verified consumer lifestyle in developed countries.

Zuzanna Skalska, a professional trend analyst in design, business and innovation, claims that coronavirus has become a complete reset for the whole world because the old system has ended and no one knows what is going to happen next. The existing rules have stopped working, there are no new ones yet and unfortunately she predicts total chaos.² Thanks to the virus we began to ask existential questions, also as architects, about what we want to leave behind, what is true and what is false, what values are important to us. The pandemic meant that "we, as architects, experienced hunger for nature and for other people, and both boredom, but also strength of nature."³ It was this crisis that made us realise how vital contact with nature and with other people is in our life. It's not about online contact, as it is mainly visual, but direct contact, experienced with many senses. We really appreciated the importance of closeness with people and the role of the community. By experiencing these deficiencies ourselves, we faced the challenge of creating places where contact with nature and safe contact with other people in various areas of life (home, work, public space) would be possible.

The demand for original, meaning extravagant, objects standing out from the everyday life's surroundings in developed countries has now collapsed. Not only reactions and behaviors, but also architecture should be adapted to times and circumstances. In the face of a pandemic, it is not the right time to think about making public buildings more attractive. Instead, one should focus on the safety of interpersonal contacts and broadly understood psychological comfort in the face of the threat unknown to individualistic communities of the western world. Western societies prefer the individual success over the interest of the society, and the pandemic has exposed the fact that this attitude does not guarantee the survival of the community. The architecture of Asian countries, in which societies have a strong collectivist character and struggling for a long time with problems resulting from climate change and globalization, was already enriched by this experience.

The aim of the article is to highlight and define the real needs of the community as well as to show the supporting role of architecture in the face of various threats by

² Z. Skalska: *Świat po korona wirusie będzie jak Polska lat 90. Stary system się skończył*, <https://noizz.pl/opinie/zuzanna-skalska-swiat-po-koronawirusie-bedzie-jak-polska-lat-90/rybmzvr> (access: 15.5.2020).

³ J. Sikora, *Branża wnętrzarska w dobie pandemii* – webinar OKK! Design on May 14th, 2020.

presenting examples. Valuable low-budget buildings in Asia were selected for the analysis, i.e. those that fulfill their role well in relation to the expectations of users, also cultural ones, and at the same time creating aesthetic values with minimal impact on the environment. The analysis of these objects comprised determining the manner and means of architecture that favored the creation of a space tailored to the expectations of not only the individual, but the entire community according to the situation in which it found itself.

2. NEEDS AND ARCHITECTURE

Before discussing the issues of needs in architecture, it is important to define what a *real* need is and what meaning it has in the context of architecture. A *need* means what is needed for normal existence or proper functioning, what is indispensable and necessary.⁴ In order to define the necessary needs in the field of architecture, the systemic definition of human needs created by Tomasz Kocowski seems particularly helpful due to the high degree of generality. It allows, among others, to solve necessary problems, i.e. real, utilitarian and socially useful. T. Kocowski argues that “when we define our needs in an objective way, based on clearly defined and acceptable goals, then it will be possible to distinguish between what is necessary and important and what is less important.”⁵ The definition of functional needs, according to Adam Lisowski, can also be referred to architecture. It shows that in order for the system, of which a man is a part of, to function properly is to reduce or eliminate dysfunctions.⁶ This statement can be referred to the perception of needs on a different scale in architecture – an object, neighborhood, or landscape.

But what does a *real need* mean? The real need must be in line with reality and truth and has to be authentic.⁷ Both Lech Niemojewski⁸ and Bjarke Ingels,⁹ two architects of different generations, indicate that the creation of work should be guided by truth and science, i.e. a thorough, best possible knowledge of man and his needs in relation to the past, present and future, but not based on an idea of them.

The most common classifications of needs include the one by A.H. Maslow, and in Poland by T. Kocowski.¹⁰ The theory of needs created by Maslow¹¹ is based on the assumption that human behavior is controlled by needs arising from human nature, understood as the lack of something, at the same time causing a desire to satisfy this deficiency.

⁴ *Słownik języka polskiego PWN*, <https://sjp.pwn.pl/> (access: 10.6.2020).

⁵ T. Kocowski, *Potrzeby człowieka: koncepcja systemowa*, Wydawnictwo Politechniki Wrocławskiej, Wrocław 1978, p. 21.

⁶ Z. Zbróg, *Identyfikowanie i zaspokajanie potrzeb społecznych w niepublicznych szkołach podstawowych*, Oficyna Wydawnicza “Impuls”, Kraków 2011, p. 21.

⁷ *Słownik języka polskiego PWN*, <https://sjp.pwn.pl/> (access: 10.6.2020).

⁸ L. Niemojewski, *Uczniowie Cieśli (Rozważania nad zawodem architekta)*, Trzaska, Evert and Michalski, Warszawa 1948, p. 17.

⁹ Bjarke Ingels on understanding the needs of the user, <https://www.youtube.com/watch?v=oNTEVdm pYQM> (access: 10.5.2020).

¹⁰ Z. Zbróg, *op. cit.*, p. 22.

¹¹ A. Maslow, *Motywacja i osobowość*, Pax, Warszawa 1990; A. Maslow, *W stronę psychologii istnienia*, Rebis, Poznań 2004.

Having verified their hierarchical arrangement, Maslow assumed that the needs are divided into two separate categories. One type of needs is to satisfy natural deficiencies which are a result of human activity (physiological, security, belonging and love needs), and the other (respect and recognition and self-actualization) – perfection and development. Satisfying the needs of the lower level creates good conditions for the development of higher-level needs, but this development is not guaranteed.

Physiological needs (called basic needs) are the needs without which man (but also the world, taking into account disturbances in the natural environment) is not able to function properly. These needs include contact with nature.

Security needs are associated with the need for stability, which includes among others: physical security (home, water, electricity), economic (appropriate budget) and health. Faced with the threat of climate change, it is also becoming important to provide natural resources for the next generations.

At the third level of Maslow's pyramid there are needs of love and belonging, the fulfillment of which is realized by being a part of a group and identifying with it and perceiving the distinctness of this group in terms of culture, religion and tradition. The need for belonging is associated with taking actions for the benefit of local environment and community – the use of local materials, structures, distribution channels and local craftsmen as well as creating social spaces conducive to interaction, communication and building healthy relationships within the community.

The group of needs of social perception includes needs related to respect and recognition, which are connected, for example, with self-esteem and gaining respect by providing solutions of aesthetic and qualitative value within a low budget.

According to Maslow, the needs of security, belonging, love and respect can only be satisfied by the presence of another human being. And at the very top of Maslow's pyramid are the needs of personal fulfillment, which are necessary in order to maintain peace and balance, also in the context of society. They are fulfilled not only individually, but also by the implementation of a goal set by the community in the field of development, learning new techniques and training. Outside the pyramid, Maslow distinguishes a cognitive (knowledge and understanding) and aesthetic need, as he treats them as tools to meet all groups of needs, which seems important in the context of design.

The concept of needs created by Tomasz Kocowski is also worth mentioning. In it he emphasizes social needs in detail – “participation in the implementation of group goals is not always the primary goal of man, but it always is his essential need.”¹² Some of the social needs he mentions are, among others: the need to belong to a social group, the need for socialization, social usefulness, the need to participate in deciding on collective issues, the need for protection and autonomy (“privacy sphere”).¹³ It is also worth paying attention to the words by Edmund Wilson on

unchanging needs hidden in the human subconsciousness and blocked by culture that play an important role in extreme situations, threats to health and life – territorialism as the need to own and defend one's living space; attachment to the place of birth, as well as the memory of the original habitat; division into their own and strangers related to belonging to a social group

¹² T. Kocowski, *op. cit.*, pp. 119–120.

¹³ *Ibidem*, pp. 130–134.

and the need to protect its members; religion as a need for the sacred and protection against the chaos of the world and the plasticity of human behavior.¹⁴

In the context of the concept of needs, architecture is an art and knowledge about creating places enabling human activity, and its role is to form a space in which users' needs included in Maslow's concept of needs will be met. Shaping this space is influenced by behavioral, sociological and cultural and physical factors, which require consideration in the design process.¹⁵

3. ANALYSIS OF SELECTED EXAMPLES

The following is an analysis of selected low-budget public buildings in Asia, some of which were built in response to the needs of users in the face of danger, and others to maintain environmental sustainability, which may soon be seriously affected. For this reason, the objects depicted are partly examples of humanitarian architecture, which particularly refers to the construction of low-budget, small-scale facilities for people, based on simple building techniques in situations of need or some shortage in various cultures and economies.

3.1 SPACE DIVIDING SYSTEM IN AN ADAPTED SCHOOL BUILDING

Shigeru Ban, a professional humanitarian architect and Pitzker Award winner in 2014, is the author of buildings responding to the real needs of man in the face of a disaster. One example is "Paper Partition System" – a simple space dividing system using paper tubes, cardboard walls and fabric, all ready for recycling when you don't need it. One of the basic elements that Ban uses in his projects are paper tubes. He uses them for poles, walls and beams, because they are locally reachable, inexpensive, easy to transport, easy to assemble and disassemble in a short time, waterproof, fire protected and recyclable. This system was invented to provide victims of disasters with a bit of privacy in overcrowded evacuation centers (Ill. 1), which are adapted school buildings.¹⁶ Shigeru Ban showed that the role of the architect is to adapt buildings to perform a temporary function in a specific situation when those in need require urgent attention. That is why, the architect also involves volunteers in the construction of the system, including architecture students, making them sensitive to the social nature of the profession.

¹⁴ M. Czyński, *Architektura, stres i potrzeba bezpieczeństwa*, *Przestrzeń i Forma*, 2008, no. 10, p. 154, <http://yadda.icm.edu.pl/baztech/element/bwmeta1.element.baztech-article-BPS1-0033-0084> (access: 5.5.2020).

¹⁵ A. Bukola et al., *Designing to meet human needs: Place of environment-behaviour studies in architectural education*, *Global Journal on Humanites & Social Sciences*, 2015, no. 1, pp. 122–126, https://www.researchgate.net/publication/306237247_Designing_to_meet_human_needs_place_of_environment-behaviour_studies_in_architectural_education (access: 10.5.2020).

¹⁶ Shigeru Ban builds temporary shelters from paper for Japan flooding victims, <https://www.dezeen.com/2018/07/31/shigeru-ban-temporary-shelters-paper-japan-flooding-architecture/> (access: 15.5.2020).



III. 1. Space divisions arranged by Voluntary Architects' Network in Second Fukuda Elementary School w Kurashiki. Source: <https://www.dezeen.com/2018/07/31/shigeru-ban-temporary-shelters-paper-japan-flooding-architecture/> (access: 15.5.2020)

3.2 ADAPTATION OF A PROTOTYPE MODULAR HOUSE FOR A SCHOOL

Another example of adapting architecture to specific needs of a community is the short time adaptation of a prototype modular house for a school, both designed by Shigeru Ban. When in 2015 Nepal was affected by an earthquake, many buildings were destroyed, including a school in Khumjung in the Khumbu region at the foot of Mount Everest that was founded by Sir Edmund Hillary, the first man to climb this summit. Willing to help, the Doshisha University Alpine Club asked Shigeru Ban to design one of the buildings to be delivered to the site at 3,800 m above sea level, with no road access.¹⁷ Acting in accordance with his principle: "Every disaster is different, so I'm going there to find a solution to the actual problems,"¹⁸ he adapted his earlier prototype home for the affected population in the Kathmandu area for the school. It is worth mentioning how the prototype was conceived.

¹⁷ Khumjung Secondary School, http://www.shigerubanarchitects.com/works/2017_Nepal1/index.html (access: 15.1.2019).

¹⁸ Nepal Project, http://www.shigerubanarchitects.com/works/2015_nepal_earthquake-2/index.html (access: 10.2.2019).



Ill. 2. Modular house prototype (Nepal House Project) by Shigeru Ban Architects. Source: <https://www.designboom.com/architecture/shigeru-ban-disaster-relief-nepal-project-07-21-2015/> (access: 10.5.2020)

At the pre-design stage, Ban analyzed the type of damage done in the Kathmandu area, learned the local context (traditional houses, their construction, materials and crafts) and established cooperation with local architects and companies. As a result, he created a modular system of wooden frames that could be folded and filled with debris, which turned out to be cheap, simple to install even by an unskilled person, resistant to seismic movements and elastic (Ill. 2). The facility was ready to move in after the structure was assembled and covered (temporary) with plastic cover.¹⁹



Ill. 3. A school building in Khumjung designed by Shigeru Ban Architects. Source: own materials

In his project, Shigeru Ban referred to the trauma experienced by those injured in the earthquake and thus afraid to live in stone houses. That is why the wooden construction of the prototype was subjected to Japanese strength tests for resistance to seismic shocks. In addition, the prototype was designed in such a way that it was possible to include people, also

¹⁹ Shigeru Ban's Nepal disaster relief shelter reuses brick from collapsed buildings, <https://www.designboom.com/architecture/shigeru-ban-disaster-relief-nepal-project-07-21-2015/> (access: 10.5.2020).

the unemployed, in the process of its construction.²⁰ This project assumed that the residents would transform the temporary shelter into a real house over time.

Secondly, this prototype was adapted to local climatic conditions and the cultural context for the school building (Ill. 3) in Khumjung. The basis of the structure resistant to seismic vibrations were locally available materials, i.e. stones, clay, sand, construction techniques. The local contractor undertook to organize the whole process involving members of the local community. Elements for the wooden structure were transported from a distant sawmill on the backs of yaks, and others by helicopter. In this way a building, which is safe, simple, quick to build and easy to maintain by the local community, was created. It was created with its participation and in relation to the cultural context.²¹

3.3 HOME-FOR-ALL – CENTRES FOR DISASTER VICTIMS

Home-for-All is a term for a centre or house for the affected community, it helps the community to recuperate, is the answer to the needs of stability, social and social reception, and possibly even development. In 2011, Japan was hit by an earthquake, during which 340,000 people were left without the roof over their heads and over 45,000 buildings collapsed in the Tōhoku region. In response to the situation, at the initiative of Minna No Ie, Home-for-All organization was created, which was supported by the most prominent Japanese architects and young studios, such as Toyo Ito, Junichi Kano, Riken Yamamoto, Kazuyo Sejima, Yasuhiro Yamashita, Astrid Klein and Mark Dytham.²² Its aim, however, “was not immediate humanitarian aid, but long-term positive impact on destroyed communities, i.e. building homes for communities, and not individuals.”²³ The exhibition *Architecture. Possible here? Home-for-all* in the Japanese pavilion at Biennale in Venice, curated by Toyo Ito, showed the origin of the *Home-for-all* project.²⁴ The purpose of the exhibition was to sensitize viewers to what people who lost their homes really need in the face of the tragedy they went through and to realize how important it is to preserve the memory of the place for the affected community. Disasters destroy relationships that have arisen between people and nature, as well as interpersonal bonds that constitute the historical identity of the place. For this reason, survivors consider themselves heirs of the past and links to the future. They want to return to their places and use the remains of the foundations as thresholds in their new homes. Thanks to this exhibition, architects were able to discover their role and help victims meet their needs for stability during the reconstruction of the community.²⁵

²⁰ M. Mozga-Górecka, *Humanitarna rewolucja w architekturze?*, Architektura-Murator, 2016, no. 4, https://architektura.muratorplus.pl/krytyka/humanitarna-rewolucja-w-architekturze_5918.html (access: 11.6.2020).

²¹ Khumjung Secondary School, *op. cit.*

²² M. Mozga-Górecka, *op. cit.*

²³ *Ibidem.*

²⁴ D. Basulto, *Architecture. Possible here? Home-for-all / Japan Pavilion Venice Biennale 2012* [in:] Arch Daily, <https://www.archdaily.com/268426/venice-biennale-2012-architecture-possible-here-home-for-all-japan-pavilion> (access: 10.6.2020).

²⁵ *Ibidem.*

In 2011–2015 architects built a dozen or so small local centers, in which victims from the most affected regions and people who lost their homes or work during the earthquake could meet, talk, eat and drink, renew the spirit of community and help each other, slowly restore local agriculture or fisheries.²⁶

The solution turned out to be small wooden buildings located on the corner of the plots under temporary buildings – a local centre on poles in Rikuzentakata (Ill. 4).

On the one hand, raising funds from organizations and companies around the world was a part of the process, similarly to Shigeru Ban's. On the other hand, this project was created on the basis of discussions between architects and students, contractors, material suppliers and future residents, and thanks to newly discovered questions about the needs – why this building is to be built and for whom.²⁷



Ill. 4. A local centre in Rikuzentakata designed by Toyo Ito & Associates Architects: Office of Kumiko Inui, Sou Fujimoto Architects, Akihisa Hirata Architecture Office, 2012. Source: M. Mozga-Górecka, *op. cit.*

3.4 ART & DESIGN CENTRE SAGARMATHA NEXT²⁸

Art & Design Centre Sagarmatha NEXT (Ill. 5) is an example of architecture that responds to the need for contact with nature and preserving the natural and cultural environment for future generations through the integrated action of local communities and tourists.

²⁶ M. Mozga-Górecka, *op. cit.*

²⁷ D. Basulto, *op. cit.*

²⁸ Information received on the basis of a local research and the author's interview with Thomas Gustafsson in 2018 – the initiator and manager of the building process of the Centre and of the website: www.sagarmathanext.com that is under maintenance now.

The center is located at an altitude of 3,800 m at Namche Bazaar and is on the popular tourist route towards Mount Everest in Nepal. This center is to perform an educational function about the region and environmental protection, entertaining role and is also to inspire in the field of art. Its main purpose is to process the waste generated by tourists into works of art and consumer products. The center's goal is first of all to stop burning non-degradable waste in the valley and organize its transport to recycling places. Secondly, to change the view of tourists and local people on recyclable materials as a source of art and utility products. Thirdly, the creation of the center is to support the local Sherpa community, their culture, the development of shelters and the creation of jobs in this area.

The facility was designed by the interdisciplinary office Sustainable Mountain Architecture founded by prof. Anne Feenstra, *Global Award for Sustainable Architecture* winner in 2012.²⁹ The idea was to create a set of buildings where 80% of the structure would be based on the use of traditional and local building techniques and earthquake-resistant materials. They are ecological in many respects, with a form fitted into the natural landscape in terms of function, size, shape, color, materials and details.



Ill. 5. Art. & Design Centre Sagarmatha NEXT by Sustainable Mountain Architecture. Source: own materials

Social participation, which means involving local waste management organizations, local community representatives and contractors in the discussion, is extremely important for the project. On the other hand, the involvement of tourists in environmental protection under the project *Waste one kilogram – pick up system* is completely unusual and at the same time innovative in this matter. This project involves the creation of a receiving station in Namche Bazaar, where various types of used materials will be packed in 1 kilo parcels and picked up by tourists going towards Kathmandu. Thanks to this, it will be possible to save on the cost of

²⁹ Sustainable Mountain Architecture, <https://sustainablemountainarchitecture.tumblr.com/about> (access: 15.1.2019).

transporting waste to recycling stations. This idea indicates that individual participation (tourists, guides, local community) matters when it comes to the whole community and contributes to the awareness about the purity of Sagarmatha National Park for future generations.

4. SUMMARY AND CONCLUSIONS

The pandemic caused by the virus has thrust developed societies out of the comfort zone and led people who have experienced it, including architects, to verify their real needs. It turned out that Maslow's needs in the form of a pyramid relate to everyone's life regardless of their status, culture, place of residence, and security does not depend on better technologies or buildings. Ecological disasters and pandemics make us aware that what we invariably need to live comes from human nature.

We often react quickly to sudden emergencies, but at the same time we forget about long-lasting crisis and unchanging needs that coexist with them.³⁰ Meanwhile, the architecture itself can become a support – a bridge through which both the needs that have to be addressed in a short time (adaptation, temporary architecture) and in the long term (permanent architecture) are met. That is why, it is important not to leave those in need at the stage of satisfying basic needs and security, but by properly organizing the design process to enable them to meet other needs, including creative development within the same architecture.

The presented examples of facilities also inspire to introduce a change in the current method of building, which did not withstand an earthquake. These buildings show how durable timeless solutions, reducing the risk of disaster effects when the disaster recurs, have been developed. In this context, a pandemic might also be an opportunity to change the way the space is created, thus preparing the space for the recurring of the virus (whether in digital or biological form), the space ensuring contact with nature and with other people in a long time perspective.

Examples of facilities adapted for evacuation centers are also examples of space that help survive a difficult situation of the entire community while maintaining the individual need for privacy. This way they inspire to protect the entire community, not individuals, and to create social spaces conducive to building healthy relationships among the community and ensuring its contact with the natural environment. In collectivist culture characteristic of, among others, Asian countries, the needs of community are paramount. The community has to be saved in order to save an individual, quite unlike the individualist culture of European societies. Maybe it could be food for thought for us Europeans?

The examples of buildings presented are also an inspiration for how to save the natural environment on which the preservation of life on earth depends, thanks to the involvement of all participants in a given space. Whereas taking into account aesthetics as well as knowledge and understanding has an impact on creating good quality architecture that respects those values that are important to users.

Now, in the time of pandemic, all designers have faced the challenge of providing functional space in a specific emergency situation and designing spaces in which we as a society can spend long-term isolation together and safely. The pandemic is still ongoing and we do

³⁰ M. Aquilino, *Beyond shelter: architecture for crisis*, Thames & Hudson, London 2011, p. 21.

not know exactly what world will emerge from it and what other important needs of the societies will appear. It seems that the only reasonable solution would be an interdisciplinary approach as to establish the precise objective definition of needs taking into account climate and socio-economic change and close cooperation of architects with society by listening to its real needs, allowing us all to survive the crisis.

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