inAW Journal
Multidisciplinary Academic Magazine

VOL. 2 (2021), NO 2

Prof. Dominika Sobolewska
Academy of Fine Arts in Wrocław

CONTEMPORARY TECHNOLOGIES AND A NEW PERSPECTIVE ON UNDERSTANDING DESIGN GOALS. CULTURAL AND SOCIAL VISION OF INTERACTIVE SPACES

Review paper

Translation PL-EN: Ireneusz Sojka, MA

Contents

https://doi.org/10.52652/inaw.84

VOL. 2 (2021), NO 2

Abstract

Although the phenomenon of interactive space is increasingly consolidating its position in more and more new areas of human activity, relatively little attention in contemporary cultural discourse is devoted to its socio-cultural mission. This article is an attempt to show a new perspective of design goals seen through the prism of socio-environmental benefits resulting from the alliance concluded between design and interactive technologies. In turn, the circumstances of the birth of the design paradigms of the 20th and 21st centuries and contemporary user-oriented design procedures and research are discussed. On the example of good practices, the author presents the characteristics and potential of designing interactive installations in the context of building healthy social relations and new cultural trends. Particular attention is paid to the new model of space with a feedback on the user, characterized by temporariness, participation and evolution. The event-oriented type of integration environment, illustrated by appropriately selected examples, acts here as a flexible matrix for building new quality of connections between the environment (public and private space) and the human community.

Keywords

design, interactive space, new technologies, interaction, integration, hybrid space, participation, socio-cultural

Introduction

Interaction is today a well-known term which, in the field of architecture and design, is often associated with single, casuistic technological devices or system solutions that improve the functionality of the objects we use. However, it is relatively rare to think of interactivity on a larger territorial scale as a dynamic space for dialogue with a specific impact on the society.

Although interactive design is increasingly establishing its position in more and more new sectors of human activity (exhibition, interactive art, entertainment, education), relatively little attention is paid to its sociocultural mission in the contemporary social debate.

This article is an attempt to define the role and goals of spatial design, using new technologies at such an angle. The main idea here oscillates around the importance of using this type of solutions in the area of building healthy social relations and new cultural trends.

By indicating the circumstances of the birth of the interactive design model by and showing examples of good practices, I will try to answer the following questions: "How is the perspective of the perception of new media and design itself changing in the face of the idea of interactive spaces?" and "What benefits can the synergy of these disciplines generate on a socio-cultural ground?".

The technological revolution of the 2nd half of the 20th century, interactivity and new paradigms of design

In order to illustrate the most characteristic qualities of interactive design, it is worth recalling the ambitions resulting from the traditional definition of design and the paradigms associated with it, promoted over the last two centuries.

Derived from the Bauhaus, commonly understood, design responds to the functional and aesthetic demand of the human environment for ready-made optimal solutions in accordance with the principle proclaimed by Louis H. Sullivan: "form follows function". It is therefore perceived as a professional trade, a practice improving products and services, infrastructure, etc. However, the vision of design, coined during the end of the 19th and early 20th centuries, underwent significant transformations in the following years. The main reason for this state of affairs was the civilizational and cultural revolution of the 2nd half of the 20th century.

Witnessing technological progress, man, realizing the possibilities offered by new media, began to percept the surrounding reality in a different way. This had its beginning in the 1960s when the society, inspired by the invention of the remote control, became infected with the desire to remotely control the environment. New technological possibilities are coupled with the need to control buildings in

terms of costs and electric power consumption. The 1970s brought even newer solutions. And so our houses gradually began to fill up with control devices. Automatically adjustable blinds and thermostats appeared. The breakthrough moment, however, came in the end of the 1970s. It was then that Apple created the first personal computer. The whole 1980s were marked by the familiarization of the society with computer equipment. This is the time when access to it was becoming easier and easier. At that time, new, lower production costs and more affordable devices appeared. The first confrontations of users with the system of graphic interfaces took place, with the help of which they gained control over software and data sets.

In 1987, Hypercard was released: a Macintosh product that allows you to freely design applications using graphic interfaces. Finally, the 1090s have arrived, which are considered the most groundbreaking when it comes to the dynamics of cultural transformations. Considered to be the moment of a civilizational leap, they became a contribution to the long-term process of transformation in social mentality. It was during this period that the Internet appeared, which quickly became a publicly available platform for global communication between users. The networking of individual aspects of human environment coupled with increasingly cheaper and handy elements of computer equipment was a harbinger of contemporary phenomena. This is the time when ubiquitous, pervasive or integrated (embedded) "technologization" of the human environment, referred to as computing, began to creep into our reality[1].

Welcomed with great optimism, techno-reality shed a completely new light on the design and style of existing creative processes. Of particular importance was the emergence of computerized design tools facilitating constant design modification and flexible knowledge exchange spaces: online platforms for common strategies and creative solutions and for sharing projects online.

In connection with the new understanding of design tasks on the grounds of the modern theory, the concept of metadesign has emerged[2]. In general, it is equated with the "designing of design". This paradigm refers to both research conducted in this matter and multidirectional design strategies. It focuses on creating conditions and infrastructure for networked, multidimensional and dynamic processes of cooperation and collective development of products of broadly defined design. The term "metadesign", born on the basis of interactive art and cultural research, was then adapted to other areas of human activity, including design and design arts.

Regarding the methodology of metadesign, it grew out of three tendencies, clearly visible, among others, in the areas of contemporary interactive design practices. We are talking primarily about focusing on user-centered design and the emergence of new design procedures, such as cognitive research

1 L. Bullivant, *Responsive Environments. Architecture, Art and Design*, London 2006, p. 121.
2 M. Składanek, *Meta-design. Strategie, narzędzia i wspólnoty kreatywne na przykładzie Processing*, [in:] *Kody McLuhana. Topografia nowych mediów*, ed. A. Maj, M. DerdA-Nowakowski, Katowice 2009, pp. 251–252.

or testing finished products with the involvement of recipients[3]. In the second place, it is necessary to indicate the gradual expansion of the ways of understanding utility beyond the strictly functional dimension. This is the so-called "scenario-based design" in which user activity is modeled using flexible and contextual narratives. The third approach is related to participatory design focusing on the active participation of users in the design process (especially in its final stage)[4].

Each of these models is important when it comes to designing interactive environments, both those embedded in virtual reality and hybrid solutions integrating physical elements of space with the flexible matrix of the digital world.

Also important in the context of the discussed threads is the concept of "design thinking". Aiming at a deep understanding of the needs and problems of users, it has become one of the most popular models for creating modern products and services. Today it is a powerful tool for remodeling the identity of not only small enterprises but also large international corporations, such as IKEA, Nike, Starbuck or Bank of America. Focused on the users and their emotions, it works on the basis of a set of appropriately arranged design stages, the most famous of which are: empathy, diagnosing needs, generating ideas, prototyping and testing. What is important here is the non-linear turn of design activities and the free activation of iterations.

3 M. Składanek, *Meta-design…*, p. 256.
4 M. Składanek, *Meta-design…*, p. 256.

VOL. 2 (2021), NO 2

Around the user – examples of contemporary trends, design research and socio-integrative aspects of interactive spaces

The emergence of interactive strategies in art and design has clearly accentuated the role of recipients in the process of reading the artifact. This is typical, especially for participatory design and for user-focused design activity, as demonstrated by the theories of Bill Verplank and William Moggridge[5], and then Don Norman[6].

Modern designers observe and talk to potential customers, often resorting to conducting the aforementioned "live" experiments. Reaching for various types of research methodologies developed on the basis of the humanities, they combine into teams of specialists representing various fields. Terms such as "user experience", "human-oriented" or "interaction design" put people at the center of their design strategy. Of great importance here is the ability to adapt the alleged way of thinking of the future user to the designed process. It is important to ensure the recipient's free, unfettered participation in the anticipation of the offered functional and aesthetic values. Computer technologies create extremely friendly conditions for this. The user becomes a participant, a partial co-creator of the designed procedure. This type of design involving the participation of the recipient in the creation of the final solution has already been mentioned earlier and is referred to as "participatory design".

The focus here is on the collaborative nature of the work/product-recipient relationship, where the involvement of users as members of project teams allows them to open up "to diverse points of view, needs, activities, strategies for using technology and complex conditions of their functioning"[7]. The main assumptions of such design today oscillate around the production of an emotional connection with the individual, which requires the designer to empathize, a deep understanding of current social needs and tendencies in different cultural areas.

Interesting research in this field, supporting companies promoting new technologies, was conducted in India by Aditya Dev Sood, the founder of the Center for Knowledge Society. The main point of analysis were clients of newly emerging industries and products. The main task of the Center was to provide guidance to emerging companies, provide them with information on requirements of individual user groups and offer them the most adequate devices, interfaces, means or services[8].

Similar cognitive challenges were undertaken by Jan Chipchase, a long-time researcher of the Japanese User Experience Group of Nokia Research. His goal in the selection of a team of designers, psychologists, ethnographers and users was to study how technology affects different cultures.

5 B. Moggridge**,** *Designing interactions*, Cambridge, MA 2006.
6 D. Norman, *Wzornictwo i emocje. Dlaczego kochamy lub nienawidzimy rzeczy powszednie*, Warszawa 2015.
7 D. Norman, *Wzornictwo i emocje…*, p. 257.
8 U. Haque, *Distinguishing Concepts. Lexicons of Interactive Art and Architecture*, „4dsocial. Interactive Design Environments", 4, (2007), p. 29.

An additional aspiration of the team was to understand the scope and impact of the technology which can appear within 3-15 years from the onset of the research.

Analyses of design procedures carried out with the participation of recipients and focused on satisfying newly emerging social needs have become a common commercial practice. They were also received with great enthusiasm by independently acting creators, representatives of various creative practices.

An interesting perspective is represented by Tobi Schneidler, a contemporary architect of interactive spaces, on the basis of his experiences. He is an example of a creator who is perfectly able to make a fusion of digital media and physical space. Mixing them in the name of art, technology and science, he proposes new, innovative solutions. Based on the idea that the technocratic vision of architectural space should give way to the cultural and social vision, the project teams led by him focus on the study of broadly defined interactivity and its impact on the spatial environment. The analyses concern, among others, the relationships between the physical characteristics of the designed objects, media effects and the preparation of people using them. Such exploration, powered by multiple physical prototyping and the aforementioned user tests, is close to the practices of the medical laboratory.

Developed in such spirit, the actions define in a way the silhouette of the designer of interactive spaces, whose mission becomes "to make the project a living organism whose growth dynamics are dictated by the scale and intensity of user participation"[9].

On the border of art, architecture and new technologies. Social and integration aspects of interactive spaces on the example of good practices

The relationships of people with the environment and objects occurring within it, thanks to new technologies, today take the form of immaterial connections. On the one hand this means improving individual lifestyles, on the other hand it carries risks associated with the loss of control over techno-reality. Correspondence is exchanged in a digital way, airline tickets take the form of interactive tags, money is virtual, and data fed by us to the Internet becomes a currency for both the private and public sectors. The effects of mobile communication have changed our sense of location and geographical distance[10]. Thanks to social media, the identity and freedom of the individual have been called into question.

The sense of danger can also be caused by the widespread automation and robotization of production processes and by the artificial intelligence. Techno-inventions and "smart" digital devices today build

9 M. Składanek, *Meta-design…*, p. 258.
10 L. Bullivant, *Responsive Environments…*, p. 117.

airplanes, cars and other complex devices. They work well in all fields of human activity, effectively supporting the demand of today.

Fig. 1. Cooperation between man and machine at the Audi plant in Ingolstadt, https://motoryzacja.interia.pl/wiadomosci/producenci/news-produkcja-samochodu-czyli-wspolpraca-czlowieka-i-robota,nId,1671721 [accessed: 22/11/2021].

New technologies, commonly used in the industrial sector, also occupy an important position in the field of scientific research. Robots, drones, 3D printers, virtual or augmented reality support the work of doctors, scientists and other builders of today's reality. Increasingly, we also find them as elements of support for the entertainment and education industries. Machines learn from us, going beyond our wildest ideas about their potential. They help us make complex calculations, produce highly sophisticated objects, warn us about specific climatic phenomena. They reach where our eyes can not. However, their biggest dominant feature seems to be the ability to collect a gigantic amount of data – both about ourselves and about the environment in which we live. The new era of cognitive computing is a completely new type of processing computer information.

The so-called "Big Data" has entered our daily lives, sometimes without our explicit consent. Our mobile phones tell us how we can spend the weekend, TV tells us what to watch, our computer suggests what to buy. Fake news clogs up our news channels and tells us how to think. And prominent scientists and business envoys praise or warn us against the artificial intelligence. Faced with this dilemma, the curators of the DATAMI exhibition, organized in 2019 at the Joint Research Centre of the European Commission in Ispra (Italy), presented the positive aspects of Big Data. The presented installations are a result of cooperation between artists and scientists, based on extensive data provided by the JRC. Rich collections of information from disciplines such as earth systems science, digital economy, natural sciences, sociology and ethics then served as a source of inspiration for extraordinary artistic creations.

Showing the human face of data and new technologies is a very important accent in the context of these considerations. Both tools for collecting information and other representations of technological civilizational development can perform a socio-cultural mission. This article is an attempt to show a new perspective of design goals, seen through the prism of social benefits resulting from the alliance concluded between design and interactive technologies. Unfortunately, the potential of this alliance does not inspire great trust among the recipients.

The dynamics of civilizational changes, including technological development, entail many questions and controversies. The lifestyle of modern man is radically different from the past lifestyles, even those at the end of the 20th century. The technological quality of today and the image of the nearest tomorrow are constantly being tested. The digitalization of social life, recalling especially negative consequences of the development of new technologies, raises ethical and moral questions. The fear of losing control, putting the fate of humanity in the hands of machines, algorithms and large techno-corporations is manifested especially on the grounds of a dystopian vision of our future. The counterbalance is techno-optimism, initially oriented towards the broadly defined civilizational development, today taking on an increasingly human form. According to its optics, new technologies can have a positive impact on the shape of human development – it all depends on the conscious use of them.

Among contemporary artists, designers and architects, there are ones who can perceive technological evolution through the prism of highly engaged humanism. Guided by the principle propagated by John Maeda that "art asks questions, design seeks solutions, and new technologies are a source of opportunity"[11], they try to adopt the attitude of "humanized technologists" caring for the human aspect of the designed artifacts.

Their main goal is to consciously use new technologies to effectively eliminate interpersonal distances: distances between man and the environment and man and the broadly defined community.

This is included, among others, in Tobi Schneidler's cultural and social vision of designed spaces. The issues he raises in his projects often concern breaking down geographical interpersonal barriers. The best example is the "Remote Home" project developed under his supervision, which revolutionizes the idea of traditionally understood living space. The idea here is based on the concept of building of apartments existing in parallel, integrated using an innovative communication system. Apartments – one located in Berlin and the other in London – communicate with each other through the prism of the activity of their users. Their floors and interior design elements are connected to one another via digital networks. The purpose of the living space developed in this way is to eliminate interpersonal distances. This becomes possible thanks to the virtual co-experience of simple household activities by

11 J. Bailey, *Speaking Machine, Art, and Design with John Maeda*, „Artnome", https://www.artnome.com/news/2019/11/20/speaking-machine-art-and-design-with-john-maeda [accessed: 24/05/2021].

users living in opposite locations. The house performs functions similar to a mobile phone, allowing you to share relationships in a more real three-dimensional format. In the both locations furniture and household appliances equipped with sensors detect information about the inhabitants of the remote counterpart. These are the so-called "impressions" sent between the two poles using the network. Their arrival at the place and manifestation on the other side of the system is possible thanks to the equipping of objects with kinetic and tactile devices and specially adapted light installations. For example, a person who sits on a bench in their living room in Berlin causes a deformation of the surface of the bench in the apartment in London. This is a subtle oneiric accentuation of the user's presence at a given moment. It can be said that the house in a symbolic way stretches its usable area. With the help of tactile and sensorily activated presence people who are physically distant from one another can stay in contact.

Fig. 2. Tobi Schneidler, *Remote Home*, http://wiki.networkedbook.org/index.php/Re-Locating, and http://www.interactivearchitecture.org/141.html [accessed: 09/06/2012].

The Remote Home, through a synchronous juxtaposition of the two worlds of experience, initiates changes in the idea of sharing living space, which today is understood not only in the physical dimension, but also in the physical-digital dimension.

A precise elaborate combination of the real and the digital matter of the human environment is a characteristic feature of Tobi Schneidler's design work. New technologies, ubiquitous in the spatial arrangements he creates, are not visible. All kinds of control signals, radio media, sensors, motors and computers are connected by an invisible system. Giving guidance to future designers, he emphasizes the need to perceive information technology not only as a mechanism or a driving device but as a flexible matter integrated into the tangible tissue of space[12].

The nature of Schneidler's work can be defined as the desire to achieve a balance at the personal, architectural and translocation levels. His approach, used to implement hybrid design projects, based

12 L. Bullivant, *Responsive Environments*…, p. 118.

on concept, interactive prototyping and testing of the final implementation, can be an inspiration for today's creators of interactive spaces. As the author emphasizes, the value of the project lies in its simplicity. The purpose of interactive arrangements is not intelligent technologies alone but also spaces playing the role of intermediary devices in meeting the user's expectations[13].

Equally interesting and inspiring solutions were proposed in "Flirtables", another important Schneidler's project with a clear pro-social disposition. These networked interactive tables have been designed for bars and clubs. According to the designer's idea, in addition to performing the traditional role, they are used to establish new interpersonal relationships. As their perverse name suggests, they allow you to initiate acquaintance, flirt with a stranger. Their milky translucent surfaces equipped with sensors that collect all kinds of vibrations, including music, are susceptible to physical interferences from users. A tactile intervention in the top plane of the table causes a specific reaction in the form of light moving along the upper plane of one or more pieces o adjacent furniture. A beam of light generated by a stronger impact can "jump" between adjacent tables[14]. The stronger pressure on the tabletop, the larger the range of the light beam transmitted to subsequent modules. Interestingly, the user can give direction to this illumination sequence, which allows you to choose the recipient of the generated "attack".

Equipped with new technologies, the interactive environment is governed by new laws. It is able, for example, to identify selected individuals in the crowd. I mean capturing the user's attention through spatial interactive ploys, which stimulates more or less controlled behaviors.

An interesting situation took place during the presentation of the "Dune" spatial installation made by Studio Roosegaarde at the Netherlands Media Art Institute in Amsterdam[15], where an elderly woman, walking around an anthropomorphically arranged space reacting to her presence suddenly began to make noises reminiscent of a dog barking[16].

The "Dune" is a hybrid on the border of spatial art and new technologies, inspired by natural landscape. Built of hundreds of optic fibers, it brightens according to the sounds and movements of passers-by. Visitors are a direct part of this work of art, enhancing social interactions between themselves and the landscape. With hundreds of interactive LEDs and sounds, the "Dune" explores the nature of the futuristic relationship between urban space and people. Described by its creators as "techno-poetry", it encourages subtle interaction and uninhibited behaviors.

13 L. Bullivant, *Responsive Environments*…, p. 118.
14 See also: Project presentation: *Flirtables*, T. Schneidler, B. Sjölén, 2 min., http://vimeo.com/13452806 [accessed: 15/02/2021].
15 See also: http://www.studioroosegaarde.net/project/dune/ [accessed: 15/02/2021].
16 L. Bullivant, *Alice in Technoland*, „4dsocial. Interactive Design Environments, 4 (2007), p. 9.

Fig. 3. *Dune*, Studio Roosegaarde, http://hannahlinehanreflective.blogspot.com/2011/11/daan-roosegaarde-dune-40.html [accessed: 23/04/2021].

Such behavioral aspects of the work, its unpredictable vivid quality supported by the active involvement of the audience, are an important complement that designers of interactive spaces should especially bear in mind. The target of such design is no longer only a functional artifact intended for a person but also the user and their behaviors.

> The history of man so far could be described as a continuous progress in developing our ability to understand and control phenomena external to us[17].

It seems that today you should look at it a bit differently – you have to face what the mind and emotional background of a person offers. The above examples are living proofs that it is possible to build new connections between the user and the external environment. It seems that, in connection with the interactivization of space, it is possible to build a multidimensional language that integrates and even eliminates differences between users.

A good illustration of this phenomenon can be the "Interactive Platform" project implemented by me together with Paweł Janicki from the WRO Art Center, presented on the Wrocław Market Square as part of the promotion of Wrocław as the Capital of European Culture 2011 (Fig. 4).

The way the installation works in a simple scheme is as follows: it is a color plane-instrument divided into equal size fields, activated by physical intervention of users. The colorful segments traversed by the recipient generate sounds assigned to them, which allows for free, supported by choreographic activity, composing of various types of musical works.

17 Z. Brzeziński, *Kłopoty dobrego hegemona*, „Gazeta Wyborcza", (4–5.07.1998), p. 10.

Fig. 4. The "Interactive Platform", Dominika Sobolewska, Paweł Janicki, photo from the author's archive.

The platform for meetings and integration suggested in the name of the facility has become a foundation for individual exploration and group activities. By leaving the user freedom to choose in the interpretation of the space offered, it also promotes collective interaction.

The coupling of the visual and musical aspects of the installation is intended to strengthen the perceptual experience of communing with the object and significantly stimulates the users' motor imagination. It triggers the desire to manipulate sound with the help of various systems and body dynamics.

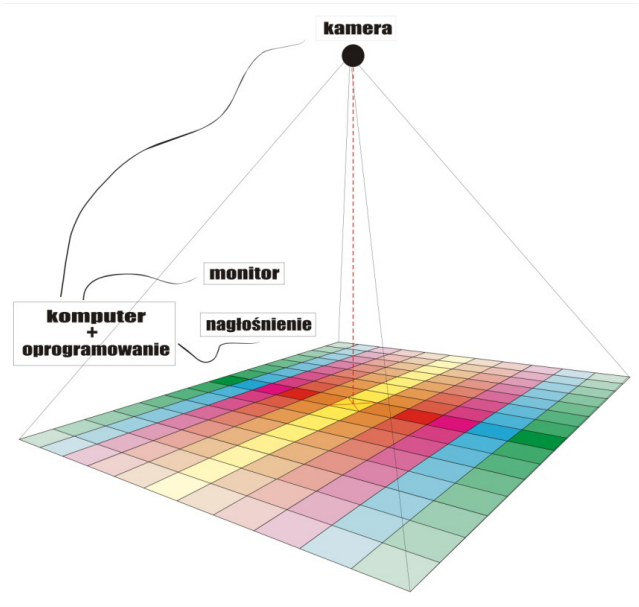

Fig. 5. The main components of the "Interactive Platform" with its technological base – computer + software, display, sound system; the author's own source.

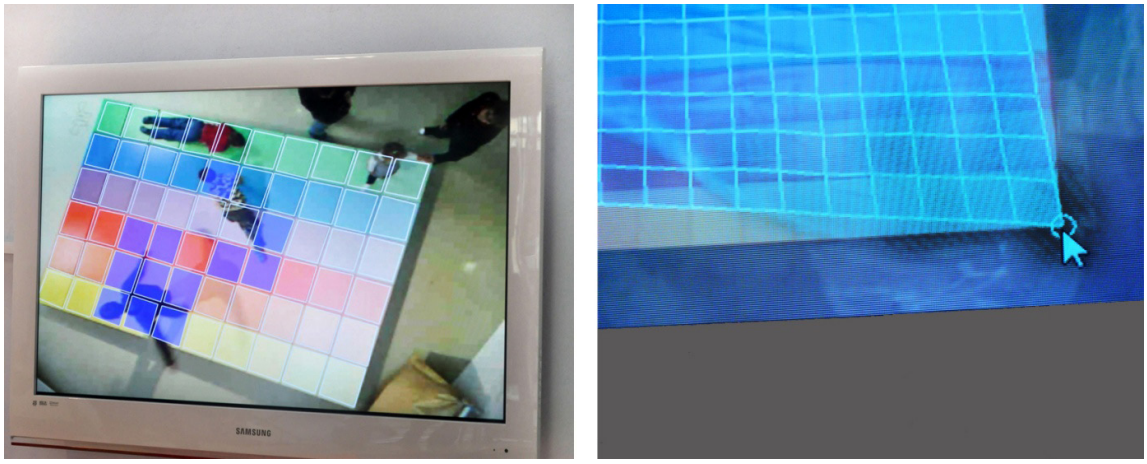

Fig. 6: From the left: activity of software grid fields; the manual, but software-assisted, imposition of the grid on the monitored object (the "Interactive Platform" at the "Art Experiment" in Moscow, December 2011).

The camera eye is a link integrating the physical and the technological aspects of the platform. Suspended at a certain height above the installation, it registers the rectangular fields and streams the image to the software. Here comes the synchrony of the elements that build it, characteristic for the object. The rectangular surface of the Platform seen through the camera is then displayed with a grid imposed onto it by the software. Each of the graphic fields is assigned a sound.

The way the platform works is based on changes recorded within the individual panels. The division of the grid corresponds to the division into the color fields. The appearance of any objects in their area (such as shadows, people or things) causes a response of the software. The presence of the objects is recognized as a kind of interference and the platform emits sounds.

The installation significantly promotes the integration of various types of social groups (regardless of age, gender or psychophysical fitness). Treated as an open source for the creative imagination of users, it allows you to play out various scenarios within it. You can develop interesting sound compositions within it in many different ways. A different effect will be obtained during a single intervention of an individual, another during a collective exploration of an object. Additional acoustic results can be achieved by means of objects projected over the colored field or by generating shadows. Freedom and logic, combined on the basis of the "Interactive Platform", are a source of stimulation, especially for creative visions of educators and tutors of organized groups. The successive presentation of the object both in Poland and abroad provided many play scenarios and choreographic arrangements.

Trends in the design of interactive spaces are moving towards research developing on an increasing scale. Generated projects more and more often require the organization of a specially equipped laboratory with the involvement of a properly composed project team. The designed interactive environment, as a result of complex experiments and team design procedures, is usually a prototype work.

What characterizes these types of artifacts is their flexible and evolutionary nature. Their specificity can be compared to a piece of music. Composed by a given author, it is then interpreted in various ways during subsequent performances. The same applies to the designed interactive environment. By definition, it is focused on a kind of improvements, variations, which results from its evolutionary character.

Most of these types of projects are characterized by high complexity of execution, and their production is associated with time-consuming implementation works. What is important here is to be open to teamwork and multidisciplinarity.

A good example illustrating this approach is the activity of the Dutch NOX group, active at the turn of the 20th and 21st centuries, deftly balancing between art, architecture and new technologies. The objects developed by Lars Spuybroek's team are wonderful specimens of interactive, experimental architecture.

An example is the "D-Tower", completed in 2004 on the main square in Doetinchem (NL). Measuring 12 m, the tower with an amorphous "organic" shape was endowed by its creators with unusual properties. The project, in addition to the physical construction, also consists of a Web site and a questionnaire filled out daily by selected residents. The information collected on the basis of the survey is aimed at visualizing data on the emotional state of the local community and showing what mood prevails on this day in the city: love, happiness, fear or hatred. The object stimulated by the emotional nature of the transmitted information each evening is illuminated in the color corresponding to the given feeling: red, yellow, blue or green (Fig. 7).

Fig. 7. NOX, *D-Tower*, Doetinchem, https://ioannafakiri.tumblr.com/post/117681620425/d-tower [accessed: 23/04/2021].

It is worth noting here that the main goals of the authors of the project focus not so much on the final character of the architecture produced as on its continuous response. The concept they develop includes a specific scenario that puts the final phase of creation in the hands of users. The dynamic personality of the generated object gains in importance only with their active involvement. This is an important aspect of the design of interactive spaces.

Conclusion

The integration of the physical tissue of the designed matter with its digital qualities gives a new look at the designed artifacts, interiors and elements of architecture, which indisputably also reflects on the design paradigm. The laws governing the digital environment are strengthened in this field with tangible spatial qualities representing the reality identified with the culturally grounded real habitat of the human community. The result of such a transaction is a new type of environment of a temporary nature, distinguished by parameters such as participation, eventability, adaptability, kinesthesia or evolution. Such an environment can be educational, integrative, reflective or entertaining. Most often, however, it possesses all these qualities at the same time, stimulating spontaneous, marked by cooperation or healthy competition social attitudes. It is a new type of hybrid space, a territory built on the model of an Internet forum, but it goes out into real space, focusing on (even temporary) eliminating interpersonal differences, enabling collective sharing of emotions, gestures, behaviors or reflections.

Today, in the era of catastrophic visions regarding new technologies and widespread fears that they will take control of the human species, such solutions seem to be a good alternative.

The interactive space described in this essay is the result of a creative dialogue, an understanding between the hardware and software of our reality. It becomes a flexible medium, equipped with virtual communication routes, a matrix of multidirectional provocations taking place between the artifact and the recipient. It is a product of the empathetic approach of contemporary designers, using new technologies to build new quality connections between the environment (public and private space) and the human community. What does this mean in practice?

As Marcin Skrzypek, the author of the "Happy end of the myth of the Tower of Babel"[18], notes, this is a significant manifestation of positive views on breaking the existing communication barriers between individuals and the environment and, thus, a chance for constructive shaping of new quality of space. Citing biblical threads about the circumstances occurring during the construction of the Tower of Babel, he tries to prove that the fact of mutual communication is a decisive factor in the success of the undertaken goal. According to the visions he recalled, God confused human languages in order to prevent the construction of the said building. The consensus obtained between the human community

18 M. Skrzypek, *Happy end mitu wieży Babel*, [in:] *Mindware. Technologie dialogu*, ed. P. Celiński, Lublin 2012, p. 254.

is a guarantee of further development. A similar situation occurs in the case of relationships prevailing within the interactive spaces described in this article. The conversational, reciprocal nature of the connections built between these artifacts and their recipients is, on the one hand, a guarantee of the evolution and dynamics of the work, on the other, a source of rich, constructive user experiences.

Today's challenge of designers operating in the area of new media is therefore to pave and properly arrange communication routes between man and environment. As Anna Nacher points out, "it is not the participation itself, but the overall architecture of information circulation that is important"[19]. Particularly important here is the humanistic approach to design using new technological achievements and a conscious orientation to the cultural and social needs of the present day. Therefore, the traditional role of the designer as the main expert of the implementation activities carried out has undergone significant modifications. Some of the formal decisions the architect has made so far have been handed over to additionally involved users. Today, the architect assumes the role of not only a moderator of the design processes but also a director of a flexible dialogue between the produced artifact and users.

The methodology adopted here, modeled on the code defined by new technologies, and especially on free software, has in effect established a new status of produced works that are by definition never finished. Their prototypical character, flexibility and evolutionary character, as well as the strategies applied to them and the language of software (like a human language in interpersonal relations) have become a remedy, a universal carrier of information between man and the environment.

It seems that the communication dispersion shown by means of the biblical parable, in the face of the cultural and social vision of interactive spaces described in this article, gains an opportunity for reintegration.

19 A. Nacher, *Ku kognitywnej przestrzeni publicznej – strategie otwierania*, [in:] *Mindware. Technologie dialogu*, ed. P. Celiński, Lublin 2012, p. 157.

References

Bailey J., *Speaking Machine, Art, and Design with John Maeda*, „Artnome", https://www.artnome.com/news/2019/11/20/speaking-machine-art-and-design-with-john-maeda [accessed: 24/05/2021].

Brzeziński Z., *Kłopoty dobrego hegemona*, „Gazeta Wyborcza", (4–5.07.1998), p. 10.

Bullivant L., *Alice in Technoland*, „4dsocial. Interactive Design Environments, 4 (2007), pp. 6–13.

Bullivant L., *Responsive Environments. Architecture, Art and Design*, London 2006.

Haque U., *Distinguishing Concepts. Lexicons of Interactive Art and Architecture*, „4dsocial. Interactive Design Environments", 4 (2007), pp. 24–31.

Moggridge B., *Designing interaction*, Cambridge, MA 2006.

Nacher A., *Ku kognitywnej przestrzeni publicznej – strategie otwierania*, [in:] *Mindware. Technologie dialogu*, ed. P. Celiński, Lublin 2012, pp. 147–161.

Norman D., *Wzornictwo i emocje. Dlaczego kochamy lub nienawidzimy rzeczy powszednie,* Warszawa 2015.

Składanek M., *Meta-design. Strategie, narzędzia i wspólnoty kreatywne na przykładzie Processing*, [in:] *Kody McLuhana. Topografia nowych mediów*, ed. A. Maj, M. Derda-Nowakowski, Katowice 2009, pp. 251–264.

Skrzypek M., *Happy end mitu wieży Babel*, [w:] *Mindware. Technologie dialogu*, ed. P. Celiński, Lublin 2012, pp. 239–256.

Filmography

Flirtables, 1'19 min, http://vimeo.com/13452806 [accessed: 23/04/2021].

Dune. The landscape of thousands of light fibers which interacts with human behavior, 1'23 min, dostępny na http://www.studioroosegaarde.net/project/dune/ [accessed: 23/04/2021].

VOL. 2 (2021), NO 2

Peer-reviewed article

Publisher: **The Academy of Fine Arts in Kraków,**
The Faculty of Interior Design

Editors: **Prof. Beata Gibała-Kapecka, Joanna Łapińska, PhD**

Translation PL-EN: Ireneusz Sojka, MA

Graphic design: Joanna Łapińska

Title page photograph: Prof. Dominika Sobolewska

The „inAW Journal – Multidisciplinary Academic Magazine" was established owing to the financing from the project titled „Projektowanie przyszłości – program rozwoju Akademii im. Jana Matejki w Krakowie na lata 2008–2022"

Fundusze Europejskie Wiedza Edukacja Rozwój

Rzeczpospolita Polska

Unia Europejska Europejski Fundusz Społeczny