Dialogue between the Inner and Outer Space of the Building

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Abstract. The article presents the issues connected with the creation of the flow of space and the dialogue between the inner and outer space of the existing architectural objects. While the building industry and contemporary architectural concepts are developing, a man constantly turns to nature. He expresses his incessant longing for being in touch with the natural landscape by using these mutual relations in his solutions. In many cases a building may absorb its closest surroundings to the interior creating the illusive impression of its integrity with nature. Such solutions are commonly used and justified especially in suburban areas, where the natural landscape is an inspiration for every kind of spatial solution. Functional and spatial analysis of the solutions for buildings of different purposes prove that the role of the space flow between the inner and outer space of architectural objects is of great significance in shaping the quality of space, living comfort and aesthetic attractiveness of an object. Another beneficial activity is using transparency in the designed objects, letting the natural light into the inside and taking advantage of open spaces such as patios or atriums. A big role in building the relation between the inside and the outside of an object has the use of adequate materials and material borrowings, which integrate these two separate surroundings and make them similar. Finally, the creation of the junctures and the panoramic views from the interior of the object, of the designed place, emphasizes the interaction between the object and its natural surroundings. Which of these solutions create the best microclimate? May the creation of the relationship between the inside and the outside make the architecture more human, bring a man closer to nature, pretend in an unrestrained way the naturalness of the not natural landscape? What role does the spatial dialogue play from the environmental psychology point of view? Is it a desired phenomenon in architecture or just a confusing play? May it soothe the senses and become the remedy for the mankind’s contemporary lifestyle diseases?

1. Introduction
Due to the development of the building industry together with contemporary architectural concepts and the expected threats arising from modern urban processes, a man more and more willingly turns to nature searching there for support of his spatial solutions in the natural environment. Environmental threats such as global warming, overpopulation, air pollution and water contamination and so its gradual devastation, force to raise a question about a man’s place and his role in the activities for the environment. For an architect, the responsibility for the environment means a creation of conscious pro-ecological solutions, but also such ones, which will allow creative borrowings from nature and the use of spatial solutions based on the language derived from the natural landscape.

Longing for landscape and natural environment, of which we are part, an attempt to find some order in the nearby space and willingness to raise the comfort of life lead to creation of the relationship
between the inner space of the object and its nearest neighborhood. In architecture the dialogue built by its creators between the inner and outer environment is an expression of respect and the attitude to nature, but also has a great significance in creation of the environment for a human being, which is consistent with his contemporary demands and life comfort.

2. The building- an integral part of its surroundings

The relationship between architecture and its surroundings is the quintessence of many architectural realizations in the past and present. The results of such undertakings can be observed in the erected buildings based on the conscious activities- the connection with nature and the exhibition of pro-ecological values. When looking back on Frank Lloyd Wright’s Fallingwater, the foundations of the ecological thought in architecture are found- the concept of the building integrated with the landscape. We are impressed by the spatial solutions, with the extension in the natural surroundings, but also by the simulation of rocky massifs or replication of the landscape’s contours while using native materials at the same time. However, even more important is the treatment of this building as the foundations for organic architecture, the one interacting with the inside and outside. [1]

This interaction involves the form, material, but also the relationship with nature, in which the building is found. The balance in this relationship is so deep that there is no doubt about its complexity. The open plan of the building is extended by the widened terraces, which were erected on cantilevers (supposed to remind the tree branches), just above the noisy waterfall, and the floor-to-ceiling windows, which were to provide the inhabitants the direct contact with the surroundings and life in harmony with nature.

This interaction with the outer space of the house, the nature and the noise of the waterfall has become a nuisance in contrast to the openness created by the extensive glazing sunk in the heavy stone walls, which intensify a strong desire of connection with the surrounding forest. [2] However, the autonomy of the inner space is visible as it is cut by the layer of the outer barriers, and together with the outer space with its unlimited freedom of the forest, begin a bilateral dialogue and create the illusion of mutual relationship.

It is different with the Glass House by Philip Johnson, where the impeccable form in its pure shape together with its not natural material absorbs the surroundings and demonstrates its connection with it. By its transparency it dematerializes itself against the background. A glass cuboid is placed on a brick plinth arising from the ground. A red brick cylinder is emerging from the floor and it is getting above the roof highlighting the disparity of the enclosed function of the fireplace and the bathroom. Except of this place a visual penetration of the inner space is possible, it is even extending to the exterior of the building towards the natural surroundings[3]. The only barrier the eyesight may come across are the reflections of the surrounding landscape on the surface of the glass walls. The steel construction perfectly harmonizes with the horizontal trunks of the trees. It is a kind of the endless play by using almost a non-material layer. The sun, landscape and greenery reflected in the windows and the views, which are clearly visible throughout and layered on one another from each side, create contrasting impressions of the space in the observer’s surroundings. The dialogue is the agreement of the parties. The interior of the house is actually outside the building and the light entering the house together with the images are like framed landscapes of the harmonious nature [4]. The space flows through the house without any barriers, transparent and light figure perfectly integrates with the line of the horizon giving the impression of unity with the surrounding hilly landscape.

In many cases when shaping the architecture as an integral part of the natural surroundings, the eyesight is cheated by creating the imitation of unlimited space and proximity with nature. It happens with both, the outer and inner side of the building. However, the real border is clear and it runs at the juncture of two different surroundings, where the building ends and the outer space begins. What happens next is the interplay with the space, the change of the sceneries of the adjacent surroundings, stimulation of emotions towards aesthetic sensations connected with nature, and the creation of the illusive natural spaces in the man’s surroundings.
3. The aesthetics of the outdoor scenery and the interior

The growth of architectural and urban concepts focused on interactions with nature through their spatial relations emerged during the process of industrialization. It was then that the attention was paid to the emotional needs and physical contact of a man with natural environment. It happened through social initiatives but also through spatial realizations such as parks, landscape assumptions and finally the appearance of the concept of garden cities, popular and spread around the world and in Poland, too. Such interactions with landscape space allowed a man to maintain mental and physical health despite hard conditions of life and work in a city. The emotional contact with nature means creating the possibilities of looking at the shaped exterior of the buildings, its closest surroundings in the way that “the natural and aesthetic value appeared in a logical spatial composition enriched by a suitable choice of plants (...) a kind of natural fence”. [5]

Longing for landscape and its soothing image also appears in the simplest interior activities such as hanging landscape paintings on the walls, which present the images of ideal natural environment and idyllic landscapes. Currently, another well-known remedy is the use of landscape wallpapers, especially in small rooms with no prospects for contact with nature. However, if the relationship exists, the most valuable activity is to catch and emphasize it and create spatial solutions in the surrounding houses and flats.

It might be said that this is a continuation of garden art, an important creative discipline, which has its origin in historical assumptions, and currently is continued in landscape architecture. As J.A. Skalski assessed in the book on “Perceptual Analysis of Landscape” citing Ch. Eliot’s definition “(...) Landscape architecture is most of all fine art and its most important function is to create and maintain the beauty around the places where humans live and in the wide natural scenery (...) its duty is to provide the sense of comfort, convenience and health of urban populations (...).”[5]

The importance of shaping the space carefully in the nearest neighborhood of the houses and flats was emphasized by Kazimierz Wejchert, too. He connects the influence of the spatial environment on aesthetic sensations and psyche of a man, and even further, on shaping his culture “(...) The space surrounding a man should be a work of art in itself as its influence on his mental state is possible, it may give him peace and joy awakening his versatile development (...).”[6]

4. Environmental conditioning and the need for relations with the surroundings

When discussing the aesthetics of the closest surroundings of the buildings, residential architecture must be mentioned, our daily routine and the places which are directly around it. Multi-family residential housing is still the most popular way of dwelling in Poland. According to the European statistic data collected by Eurostat in 2014 such a situation is common in most of the European Union countries. In Poland, an increase in the number of flats in multi-family buildings has been noticeable for many years, where almost 50 percent of the population lives. [7] Unfortunately, in Poland a new multi-family residential housing offers its users poor solutions when considering the relation to the exterior space. It does not provide any visual contact with the greenery from neither the inside of the buildings nor a free viewing of open landscapes and recreational areas in the nearest surroundings. According to the research conducted in Warsaw in 2011 by the Faculty of Architecture of Warsaw University of Technology, property developers most often offered their clients the flats with the views on the neighbouring housing units, providing the relative possibility of the insight into the space between the units of the buildings, so called ‘wells’. After analyzing 14 residential estates in Warsaw their relation to the environmental landscape was poorly assessed. [8] They did not provide any adequate recreation, neither spatial nor compositional quality of the green areas in the surroundings of the buildings and the ones in the housing units.

Currently, this situation remains without any changes. It is a very difficult situation when the most important priority for investors is to build the biggest number of flats in a given area. Such an assumption puts a man, the user of the building space, in a lost position from the environmental psychology point of view. As a result it has a negative impact on his mental state. The monotony of the modern cities, human dwellings, the use of the same materials, patterns, elevations and views have a negative influence on the human psyche. [1] It might be said that disturbances in relations with environment, the loss of contact
with greenery, lead to mental disorders and social dysfunctions. Therefore, it is so important to maintain and use the influences from the exterior on a man’s mind and return to the basic assumptions of human dwellings in order to break the tendency of isolating a man from the natural environment or even turn to eco-psychology [1] attempting to overcome a human tendency of self-destruction in this way. Introducing natural views and every day contact with even the smallest element of natural environment in our houses and flats is not the invention of psychologists but it is a requirement necessary to be fulfilled in order to provide the inhabitants a hygienic way of living. Personal contact with natural environment but also watching the images of natural views may have a regenerating impact on the human mind. The potential included in the natural environment’s views and natural scenery brings a significant stress reduction and the recovery of attention. Regeneration reactions, which counter the stress, may concern psychic resources exploited by men due to his modern conditions of life and comprise “reduction of psychic stress, aggression and energy and health recovery”. [9] On the other hand, psychological benefits of regeneration derived from nature are connected with our focus on watched views, the expression and concentration of the attention on life tasks. Natural sceneries are also a source of splendid phenomena, which attract our attention with a small effort. Environmental fascinations draw our attention and concentration. “(....) natural elements of regeneration type arouse our fascination and create the possibility to reflect in the surroundings, which are distant from everyday tasks and close to people’s needs and desires at the same time (....)” [9]. Undoubted benefits of the interaction with the housing development, and at the same time the users with the environmental influences, are reflected in creation of the space in the way to make this relation easier, providing the flow of space and forming personal and visual relationships with the surroundings.

5. The role of the space flow in relation between the interior and exterior of modern architectural objects

When discussing spatial relations in architecture one cannot forget to mention many existing examples of objects, where the interaction with the surroundings does not exist. It is visible in many underground buildings or modern shopping centers, museums, and other public utility objects. Despite the fact that it seems not very attractive or even disturbing in usage, many of such objects function quite well in our surroundings. These are the buildings shaped internally and their relationships with surroundings are limited in their dimensional perspective, sometimes being illuminated only from the top to provide the necessary access to the natural light in the interior.

On the other hand we deal with completely transparent objects whose interiors are supposed to belong to the surroundings and are inseparable parts of the concepts. There are also many objects whose interactions with nature and surroundings take place because of some intended architectural and spatial means and technical solutions, ranging from introducing additional lighting to directing perspective views and panoramas.

Attempts to move the boundary of the exterior space to the interior, putting the environment in architectural frames of the buildings is a commonly applied technique. It is a kind of creation of the flow and illusion of the open space, which is not limited by the autonomy of the natural environment and artificial one created by men.

a. The flow of space - the sign of the natural unity

There are solutions in which there is no division of the space into inner or outer one but there are closed and open areas, which form relationships with each other, they penetrate naturally and one flows into another. Artificial enclosing and the use of partitions is an unnatural constraint of something that forms unity. A natural balance between the interior and exterior is visible in Thorncrown Chapel by E.F. Fay Jones. The respect to the natural landscape and the context of the place is noticeable to such an extent that the building is nothing but “(...) woven from the net of fibers being at the same time the allusion to the surrounding forest (...).” The language of the forms referring to nature and the existing natural values (stone, wood, forest translucency) is a lyrical reference to the poetry of the forest at the same time. [1] Despite its glass layer covering a wooden structure of the building made of columns and truss, the space
penetrates the inner area and the exterior of the structure freely and without any barriers, as if it wholly belonged only to the forest. [10] Independently of the season of the year or time of the day the visual poetry sunk in the forest symbolizes the unity and harmony, with the architectural space totally absorbed by nature.

**b. Absorption of the exterior space to the interior**

Another technique used in architecture is drawing in the outer space into the interior of the building. The example of such a strong integration of architecture with landscape through combining a network of gardens and green interiors with the object is International Retreat by Weiss Manfredi. Blurring the boundary between the old and newly designed part of the building occurs, but also on the level of the outer and inner functions, which intersect at a central point creating two-story gallery with glass windows, open towards the north and south. This direction is emphasized by landscape compositions, pools, places for holding informal conversations and orangeries. The main interior with glass windows is saturated with unlimited space of opening layers of views to observers, ranging from direct squares and water pools near the building and the natural ones in a more distant perspective. The location of the elliptic gallery is strategic because it connects all created spatial and functional phenomena, absorbing the surrounding landscape at the same time. [11]

**c. The use of transparency**

It is a technique, which is based on the dialogue between the interior and exterior of the building. Transparency of the walls gives the interior space another dimension, which is approached by the object’s surroundings. The boundary of transparent layer gives a sense of belonging to what is visible and expressional, to what is beyond the structure of the building, and to what is visible in a more distant perspective. Transparent barriers create a two-dimensional image of spatial reality through light reflections and its surroundings. They can distort visibility of particular views but also the sense of distance and depth. The object’s transparency, especially its walls, causes that the building becomes more open, provoking to have a look inside. In this way we are participants of what is happening in the interior while being outside the object. The insubstantiality of architecture is becoming an illusion, and the interior and exterior are forming a spatial unity. [12]

**d. Other architectural activities**

Mutual interactions of space are also very noticeable in any forms of open spaces shaped as atriums or enclosed courtyards. It provides a contact with greenery and builds a plasticity of the structure, strengthens visual experiences, which cannot be limited even by a layer of translucent walls. Combining the space and achieving visual effects of some kind of unity and flow is also obtained by using identical materials at connecting points of the exterior and interior, on the boundary of space division. The creation of the same scenery at the connecting points of visual perspectives is an element of playing a game with space and building a specific optical illusion. A particular arrangement solution might be found in the creation of the view openings looking on the certain points in perspective space or in the creation of observation points in the direction of panoramic views. It enables to stop an observer at a particular point, focusing his attention on a section of environment, view or interior. In this way subjective feelings and climatic moods are built. [6] The architectural potential, which is found in such activities, is unlimited and leads to watching things freely and creating attractive architectural solutions.

**6. Conclusions**

A conscious creation of the dialogue between the interior and exterior space of a building is the answer of a man to the need for being close to nature, creating different emotional relationships and at the same time it is a search for free and unconfined space to live. This way of thinking has its justifications in environmental psychology and gives an opportunity of emotional escape to something that is natural, where the senses are saturated with aesthetic impressions, what is unachievable in an artificial way, at the same time creating hygienic architectural space.
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