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"Landmarks" - signs of the place. Identification of urban space in the context of location problems

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Abstract: This text discuss the architectural point of view about embarrassment of contemporary people, having at his disposal perfect means of transport to which do not equal orientation formed by millenniums competences within the geospace. Revolutionary changes in the technique and accompanying them huge development of transportation possibilities cause essential disturbances of this process, which seem to be natural. People's abilities were shaped among other things by canons of town-planning and architecture, however simultaneously predispositions of a man formed. Aim of the author is to point out the problem and to discuss reasons of this, as well as the need of its solution.

Index Terms— architecture, landmarks, localization, urban planning

I. INTRODUCTION

The transformation of the nineteenth-century industrial settlements into the modern cities affects many changes to contemporary society. One of these challenges is pace of life and time which is a determinant of informatics communities. Modern man is able to move to the other hemisphere during the day; even moving by car at a distance of several hundred miles in a few hours is already a natural thing for the average being. However, our abilities, which undoubtedly evolved in the course of long-term evolution of civilization (contrary to the observed current technological revolution), predispose us to travel with speed of no more than several kilometers per hour. The aforementioned speed is the result of last century's technology development, which is not habitual for our psyche and also causes problems with orientation on the route in new location.

The solution to this kind of problems is GPS supporting spatial orientation, generally used for a large scale. It should be mentioned that problems with spatial disorientation are important in critical situations, especially when one need to call for help or inform about the crash site. These problems seem to be weightier in the environment to which the recipient is not used and is not able to find quickly the landmarks that define its position in the structure of the city or the nearest environment. These problems had been recognized in sea transportation; sufferers have usually no knowledge about their localization in the surrounding environment and are not able to describe their position [Felski & Felski, 2014]. For this reason the systems, such as emergency buoy EPIRB or SART radar transponders have been implemented. There is low awareness that such problems occur also in land transportation – beside of the surroundings. No matter one is surrounded by heavily architecturally transformed urban substance or in the area of natural character, the ability to correct describing the location is a function of knowledge of the topography, perceptiveness and skills of defining the characteristic features of the landscape. That ability depends also on the knowledge and skills of visualizing transmitted data by a potential recipient. It is therefore seemed that the ability to locate our position in the field is an issue of the field of psychology [Moir & Jessel, 1989]. According to the conducted numerous of studies, both on the representatives of the nomad population of the northern Siberia, as well as on the volunteers from urban areas, the thesis can be expended: Most important in determining one's position is „*landmark*” - unequivocal in the interpretation element of landscape [Adayev, 2015], [Alle, 2000]. The characteristic is undoubtedly the fact that unrelated communities - living in entirely different climatic and cultural conditions in a similar way perceive this relationship. Nenets, indigenous people living in Siberia define the characteristic elements of the landscape (single hill, tree, river bend) as a "*sign of the Earth*," while American students subjected to the experiment, define architectonic elements as "*landmarks*". It is probably justified by the nature of the surrounding landscape and scale of its transformation. It follows, therefore, that regardless of cultural predispositions and sex, this "sign" mentioned above, is a key element in this context. The fact is also, that the distance in which people lived over millennia, even a hundred years ago, had an impact on our ability of orientation. Without any doubt, the conditions in which people lived were determined by the principles which

guided a man during the movement, but also the principles of everyday experiences which affected our behavior in other areas of life (like transforming of natural landscape into anthropogenic one, resulting in a contemporary urban space). The result of the enormous development of technology, especially in the field of communication, which is not equal to the rate of evolution, are often surprising problems faced by people during the movement. It gave rise to explore contemporary issues of anonymity tissue of metropolitan organisms, which is de facto the recipient.



Pic.1. Turtle Rock – natural landmark in Mongolia, (author: Felski B.)



Pic. 2. Owo – artificial landmark in Mongolia¹, (author: Felski B.)

II. NATURAL NAVIGATION

The movement of each organism or equipment required primarily spatial orientation, and so location of the place of actual being and knowledge of the motion vector, speed and direction. Many species of animals have ability to move on sometimes enormous distances, for example migratory birds. They have an innate ability of geospatial

¹ Owo is a manifestation of religion, usually built at the intersection of natural transportation corridors



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orientation, for which use the physiological ability to sense the magnetic field lines of the Earth [Wiltshko & Wiltshko, 2005]. They use mainly cyclical nature of the sun, and the ability to store images, like for example large waterways, mountains, islands and straits. It is interesting that, in fact, modern navigation, whether carried out by people or by machines, returns to these solutions.

The sixteenth century was dominated by coastal shipping piloting methods, based on experience and excellent knowledge of objects and natural phenomena on a known pilot basin. So, for example, the captain remembered that in a typical rock must change direction to the right and head slightly to the left of the islands, but at certain times of the year there appeared shallow, so in the case of the white crests on the waves had to turn more to the left to have passed by them. Note that this sentence is full of vague terms such as "more", "somewhat" etc. So imprecise method neither can be applied universally, nor can give anyone easily. In fact, they can be used on a small basin and only with certain amount of intuition, and undoubtedly a great experience. Similarly, acquiring of these skills by animals takes place in a herd in the company of experienced "*pilots*".

Important for every space is to know at least characteristic points – mentioned „*landmarks*” . People every day use such methods largely unconsciously; due to the nature of the environment, rural or urban, guided by the terms of the well-known objects permanently occurring in fixed locations. So without hesitation we go along a country road to the junction near a large oak tree and turn right, because we know from experience, that this road leads to the goal. Or in a city street we thoughtlessly follow that peak of skyscraper visible in the downtown spatial substance which is seen „*slightly to the right*” of the goal of our journey.

Vladimir Adayev, anthropologist on Tyumen State University described in the article [Adayev, 2015] Siberian population of Nenets living in Tundra and their practice of memorizing and use of the landmarks. There was described the theory of two-level Nenets knowledge of their land, where the upper level allows to move on a land without difficulties, and the bottom level consists of detailed knowledge of a landscape required for reindeer herding. It was concluded in the article that the most versatile and essential for natural landmarks of the Tundra Nenets are rivers and hills.

Referring to the information mentioned above it seems that regardless of the circle of cultural and social circumstances, the principles of natural and urban environmental orientation are always similar.

III. URBANIZED SPACE AND NAVIGATION

Europe as the "old continent" has a long history of civilization. Most cities were founded hundreds years ago, during periods dominated by post-agrarian and industrial communities; the consequences in the structure of the city are now very clear. In a typical city on the continent there are large, distinctive objects visible from considerable distances. These objects are often castles or palaces, town halls, but especially – churches with its generally high towers. These are excellent landmarks for people in the narrow streets of the old cities. The location of such facilities in the structure of the settlement resulted from prosaic reasons. Historical conditions in the field of defense or the impact of the politics and religions cause that both castles and churches were center-creative cores, around which urban tissue of medieval city developed. The continuation of this trend, albeit in a somewhat modified form are urban spaces of the nineteenth century. In these cases industrial cores or maritime and inland ports played the center-creative role. Chimneys, parts of factories, shipyard halls, cranes were also - consciously or subconsciously, defined in these spaces as "*landmarks*". An example of such a city might be Hamburg and Rotterdam. Another city with such a characteristic can be Poznań, with the historic center - post-industrial buildings and satellite residential structures built in the second half of the twentieth century. Demoted former industrial buildings and factories became part of a sort of "zone prestige" thus being identifiable, not only for the residents; that is the result of a successful revitalization of *Manufacture Center* and nearest surroundings. The consequence of the above is the image of the current trends in urban centers, which - synthesizing, has historical downtown cores and contemporary satellite residential areas.

Historical canons of architecture, naturally marked landmarks; both during the Middle Ages², as well as in the Renaissance and Baroque religious buildings were built to tower over residential development. Palaces and castles

² Romanesque and Gothic



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with sets of vertical elements (towers, pillars) and location on the hills towered over the surrounding area. It was perfectly suited to the natural predisposition in the context of human movement and the need for geospatial orientation until the man in daily life moved at a maximum distance of several kilometers - in relation to the high buildings, almost in the range of visibility. Historic urban substance did not pose problems in its definition. Quite different in terms of spatial identification are contemporary cities of anonymous, unified architecture; the scale deviates significantly from the "human scale".

IV. CONTEMPORARY PROBLEMS

State of the contemporary technology causes many of us to move on a daily basis over a distance of several kilometers, for example, commuting to the company, what is related to the specific nature of our work. Since one of the positive features of the human is the ability to learn quickly, it appears that we are easily able to remember the route of distance of several kilometers, especially when we overcome it repeatedly. However, at this point, the first difficulties appear; even the driver moving every day in a big city, usually moves on fixed routes and when there is a need to get to a new place the first problems arise. The typical solution in such a situation is asking for directions and getting briefings associated with characteristic buildings along the route and the characteristic distribution of the roads. So, for example: *"You will travel cross two junctions, and on the third one turn right, up to the elementary school"*. We assume, that the school is usually such a characteristic building that the average driver will recognize it among, for example, single-family housing (because of its dimensions, characteristic pattern and rhythm of windows on the facade). The same principle can be used in terms of an office building (relatively large amount of glazing facade, a distinctive trim levels of the building and a large scale), or even ... hipermarket (a typical one, usually doesn't fit to the context of surrounding architecture and that's why becomes some kind of „point” - landmark). Unfortunately, modern architecture also introduces a correction to this line of thinking. Actual architectural trends, building law and requirements, etc. and above all - the economic balance cause that modern buildings are often perceived by the local community as anonymous. This usually happens on the areas of downtown development where economic balance predominate the quality of urban space. Deficit of identifiable spatial elements (i.e. "Landmarks", the navigation objects) makes contemporary cities easy to lose orientation. This is because of simplifying thinking about the city; office district is full of objects with a similar function, and thus similar architecture. In that case it is difficult to find in such architecture a distinctive building, to mark it as an „landmark". Also in the suburb, with a lower intensity of development multitude of individual buildings paradoxically introduces too many variants of landmark's interpretations; in that way its rank may be devaluated.



Pic. 3. Anonymous contemporary urban interior of Tokyo without unequivocal „landmark”, (author: Felski B.)



Pic.4 Anonymous historical urban interior of New Orleans without any unequivocal contemporary „landmark”³; author: Felski B.

It is important to pay attention to the modern system of routes. Historical network of streets, though inadequate for current transport requirements in terms of capacity, was "obvious" and conducted in a natural way to the „goal”. Currently, the proposed road should take into account a number of considerations: the existing investment, safety requirements and environmental protection guidelines, local spatial law and results of dialogue with local communities. Such a large set of guidelines and restrictions leads to the design of "compromise" and results finally the road system which is rather accidental and certainly unobvious for an average person. Another aspect of generating the impression of anonymity of the modern city is the creation of the satellite suburbia districts for housing. This trend is clearly being drawn in large, overcrowded cities. Created without any historical context, the "new city" does not have the elements of spatial identification; the result of this state of affairs is navigating “towards hypermarket”. However, in contrast to the church or the tower, hypermarket mentioned above cannot be seen from a distance, so is less efficient. Paradoxically, one of the more recognizable elements in the city are the advertising and logos of hypermarkets. On one hand, mentioned logos are the elements „polluting” urban landscape; from the other hand, these logos are clear and unequivocal landmarks – marks of contemporaneity. So far, no one has found a successful solution for this problem.

V. HOW TO FIND OUT AMONG THE CITY SUBSTANCE? EXPERIMENTS AND RESULTS

Problem presented in the article is important for the transport efficiency, as well as for the mental comfort of the average man in situations such as quick localization in the tissue of the city. But ability of describing one's position is much more important value for all kinds of rescue teams and departments. The task is not the ability to reach the position by rescue services, which increasingly use navigation systems; the problem lies in its ability to indicate the place of the event by an average citizen who does not have the equipment, and even if, he usually uses it incorrectly in stressful situation. We are dealing with the problem of the interpretation of the environment, the ability to describe it to the consignee, and finally - the recipient's ability to interpret the obtained information and localize it.

Researches on the impact of the urban space's interpretation were conducted⁴ by author, PhD Król-Dobrowolska, with participation of architecture students. The aim of these researches was to check how the perception of given urban interior can be changed during the process of its reinterpretation. The study consisted

³ Though the fact, that architecture of New Orleans before Kathrina disaster was unique, there were, paradoxically, too much interesting buildings and in fact – no unequivocal „landmark”.

⁴ Experiments took place on Gdańsk University of Technology in the years 2001-2007. These researches were conducted by author, together with PhD Król-Dobrowolska.



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of the preparation on the basis of the urban interior photos (street, urban square), taking into account the synthesis of the basic elements of space. The result was an abstract two-dimensional image which had to be transposed again into the spatial composition. The interpretation and synthesis of three-dimensional real composition into two-dimensional abstract one has led to the emergence of a three-dimensional alternative space. This experiment showed clearly that the process of communication and its secondary visualization can give surprising results. Similar results arise from experiments conducted by Gary Allen on University of South Carolina on issues of orientation in the topography of the city [Allen, 2000]. This is also the problem of the context interpretation of the picture; see for example [Hirvane et al, 2012].

This problem becomes more and more important for two reasons. First, one can notice a strong tendency to intensify the downtown development (particularly large urban areas), which undoubtedly was affected by the economic factor⁵. On the other hand, the trend factor related to the aging of the population, clearly implied especially in developed countries, seems to be increasingly important. Takeshi Chishaki defines 5 levels of dysfunction of modern population of the city. Regardless of physical dysfunction, there are also mental dysfunctions mentioned: information barriers and barriers of human reaction time - city life is getting faster, what becomes a huge problem for elderly people [Chisaki, 2014]. These barriers are closely related to the dynamic functioning of the components of urban space and belated users' interaction for information. The above mentioned applications significantly affect aspects of contemporary urban anonymity.

The solution to this situation is the vision of ordering the urban substances of cities to make urban interiors more identified. It is probably *idea fix*, as well as obtaining consensus on monitoring, for example, all vehicles on roads. However, action should be taken to improve this situation, in the interest of all participants of city life. A partial solution may be, for example, attempts to individualize parts of buildings, whether through appropriate modifications of the structure, or by changing the external design (painting, changing facade material). Here, however, you can encounter problems of ownership; there are no legal provisions enabling impact on the community or the owner of a residential building. One idea that could alter the *status quo* is to increase awareness of local planners forming spatial laws. Global trends of urban planning based on the principles of sustainable development of the cities are increasing the engagement of public spaces (squares) which became the „scenes” of the local communities' activation. Mentioned squares become easy to remember and identify elements of "urban puzzle."



Pic.5 An interesting example of rehabilitation of the residential district in Moscow; The „corner” is easy do identify and in fact became a „landmark”, author: Felski B.

⁵ The tendency to minimize the impact on investment costs of building affects the increasing of area density at the expense of public space



Pic.6 Riverfront redevelopment in Rotterdam; a „landmark” on a riverbank, author: Felski B.



Pic.7 Spatial dialog between historical and modern architecture in Tokyo becomes a sort of „landmark”, author: Felski B.



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VI. SUMMARY

The problems of developing contemporary cities are complex and multi-faceted. At the same time economic considerations cause pressure on the duplication of repetitive projects, which in turn leads to a mess of urban and communication textures. Ultimately, it causes discomfort of citizens' localization in relation to the antropogenic environment.

However, this situation also causes profound consequences in terms of communication problems, what is important in critical situations, as well as in daily life. The author wishes to point out the problem and indicate the need to develop objective rules to take into account a social question in urbanism and spatial development.

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Bartosz Felski, PhD eng. arch., academic teacher on Faculty of Architecture on Sopot University of Applied Science and earlier on Gdansk University of Technology. Author and co-author of several articles about architectural shaping of the areas of inland waterways in the context of sustainable development and urban transformation and revitalization of postindustrial areas.

Awards and distinctions:

1. Award on the international conference Sustainable Building 2004 for the paper: „ Aspects of sustainable development in shaping the infrastructure of inland waterway transportation: the case of TORUŃ”. Paper awarded the sponsored participation in the international conference Sustainable Building 2005 w Tokio (co-authors: prof. eng. arch. Maria Stawicka-Wałkowska, eng. arch. Marek Ptasiński)
2. Award (1st prize) of City Council for the revitalization of post-war buildings - the Shoal of Witches , 2002
3. Award (1st prize) for the project of revitalization and modernization of historical cinema complex for the Navy conference center , 2002
4. Award (1st prize) in an international competition organized by Staedtler, 2001