

THE SPACE OF HUMAN NEEDS

SPAȚIUL NEVOILOR UMANE

ȘTEFAN Diana¹

e-mail: stefan_g_diana@yahoo.com

Abstract. *Considering man the centre of the universe, the only reference system, all aspects of life grows with it, nothing is static. Starting from this premise the study aims to answer this question: What should we consider the act of conception of space given the characteristics of perception? The study argument is constructed mainly from a psychological point of view through perception characteristics and its affective factors, and never the less through the hierarchical model of human needs that Maslow developed. The scientific literature examines the qualities of space that make it close to the individual and the space features compliant with the pyramid of human needs. These can be summarized in five major generic categories image, readability, mobility, adaptability, and complexity. By joining and combining studies underpinning this paper the author seeks to develop a set of steps necessary in the conception act.*

Key words: needs, perception, successful space

Rezumat. *Considerând omul centrul de greutate al universului, unicul sistem de referință, toate aspectele vieții se dezvoltă o dată cu el, nimic nu este static. Plecând de la premisa enunțată mai sus, studiul de față își propune să răspundă la întrebarea: Ce trebuie să aibă în vedere actul de concepție a spațiului având în vedere caracteristicile percepției? Argumentul studiului este construit dintr-o perspectivă preponderent psihologică pe caracteristicile percepției și factorii care o influențează, împreună cu modelul ierarhic al nevoilor umane elaborat de Maslow. Literatura de specialitate analizează calitățile spațiului care îl fac apropiat de individ și trăsăturile spațiului conforme cu piramida nevoilor umane. Calitățile spațiului pot fi cuprinse generic în cinci mari categorii imagine lizibilitate, mobilitate, adaptabilitate și complexitate. Prin alăturarea și combinarea studiilor care stau la baza acestei lucrări autorul urmărește elaborarea unui set de pași a actului de concepție.*

Cuvinte cheie: nevoi, percepție, spațiu semnificativ

INTRODUCTION

“A deep human need exists for associations with significant places. If we choose to ignore that need, and follow the forces of placelessness to continue unchallenged, then the future can only hold an environment in which places simply do not matter. If, on the other hand, we choose to respond to that need and

¹University of Architecture and Urbanism Bucharest, Romania

transcend placelessness, then the potential exists for the development of an environment in which places are for man, reflecting and enhancing the variety of human experience."(Edward Relph, *Place and Placelessness*, 1976)

Assuming that man is the gravity centre of the study, the author seeks an answer to the question: What should we consider the act of conception of space given the characteristics of perception?

"Creating the right areas is performed starting from its own users. It must take into account the human dimension and create the conditions that cause a feeling of comfort and safety."(Jan Gehl, *Orașe pentru oameni*, 2012)

So far there have been conducted studies that identify the characteristics of space that make it closer to man, features that include image, legibility, transparency, connectivity, complexity, coherency, adaptability and diversity. The most important of these were elaborated by CABE in 2003, Norsidah Ujang in 2010, Forsyth and Krizek in 2011 and by Ewing *et al.* in 2013. Simion Drooger studies from 2010 and Mallory B. E. Baches studies from 2016 talk about human needs in architecture and urbanism based on Maslow's hierarchy of needs.

The research underlying this paper provides important information that represents the foundation for the solution to the addressed problem. The studies conducted so far show only part of the complexity of this topic. Acknowledging the multitude of variables that influence the individual, the gravity centre of the study, it is difficult to achieve a comprehensive approach to the act of conception of space based on perception's characteristics.

Given as premise the perception's characteristics, the factors affecting it and Maslow's hierarchy of needs, the author aims to develop a set of steps for the act of conception.

MATERIAL AND METHOD

The paper uses a bibliographic study in an inductive and deductive approach by collecting data to answer the stated question: What should we consider the act of conception of space given the characteristics of perception? Based on Maslow's hierarchy of needs, given the prerequisites of conception and using the hierarchical factor analysis the study summarizes the perception's factors given its characteristics.

Underlying research studies are focused on the qualities of space and the hierarchy of human needs on the architectural subject and public space. The studies on quality of space are adaptations of principles for a good design did by CABE (2003), adaptations of principles for detailed design did by Forsyth and Krizek (2011), adaptations of audit criteria for urban design did by Ewing *et al.* (2013) and adapted elements and attributes of space did by Norsidah Ujang (2010). Research on the hierarchy of human needs regarding the architectural object have been made in the study "5 Basic Human Concerns in Architecture" in 2010, and those in urban areas were made by Mallory B. E. Baches in 2016.

RESULTS AND DISCUSSIONS

The starting point of the debate is the fact that space and place are not fixed and innate but rather are made and remade (created and recreated) by people's actions and meanings.

We can state that there is still no clear set of steps in achieving a successful design and the fact that there is a shared view on how design affects the dynamics of urban space and human resources. In a simplistic approach, the problem is that there are too many variables (some controllable, some not) that contribute to the development of this set. The variables that influence the act of conception can be divided into two criteria: controllable and uncontrollable. The controllable ones are related to relief, climate, economic and political situation and cultural heritage. The uncontrollable ones are related to the individual itself, its psychological structure. This paper seeks to analyse the uncontrollable variables that influence the act of conception in terms of human perception. Given the characteristic of perception, a space to be successful must meet image, legibility, transparency, connectivity, complexity, consistency, adaptability and diversity. The designers of these spaces must answer a series of questions about the characteristics of space necessary for humans, the diversity of activities within, its legibility, security, availability and permeability. The human response to these questions is conditioned by their needs, synthesized by Maslow in a pyramid of needs, and not least by their ability to perceive reality.

The debate on perception is a sporadic one, oscillating between subjectivity and objectivity, between personal poles and the poles of urban space. Perception has a fundamental need the "need for localization" (Tolman, 1951) and is closely related to individual's experience, familiarity, mood, the activity they perform and to the environment's configuration. Studies by Donald Appleyard in 1969, showed that perception is operational, responsive and deductible. Knowledge and experiences are located on the interaction between man and the environment. There are two types of interaction between the individual and space, egocentric where everything relates to the individual (the individual is the reference system) and allocentric where the environment is a global reference system. Perception is influenced by the five basic senses (sight, hearing, smell, touch, taste) plus proprioceptive sense, sense of balance and kinesthetic sense. Besides senses perception is influenced by mobility, physical activity, time spent, the type of receiver (the individual) and the conditions of the physical environment.

Starting from the speech about the individual's perception of space, the latter must satisfy a number of requirements. The author highlights the features of successful space based on research regarding the quality of space as seen by users.

Summing up the results of the CABE (Councillor's Guide to Urban Design) studies and those of Forsyth and Krizek (2011), Ewing *et al.* (2013) etc. the author observes that the act of conception should consider the following issues:

The type of user, the image and character of the space, surroundings, legibility and transparency, coherency and connectivity, complexity, diversity and adaptability of space to provide users with a space that has character, that has continuity and delimited surroundings with quality public spaces, where man can move easily within, a readable space, adaptable and diverse.

In this paper, the author analyses the act of conception given the characteristic of perception influenced by Maslow's hierarchy of needs. Developed between 1943-1945 and first published in "Motivation and Personality" in 1954, the model includes five categories of human needs. From the bottom to the top, Maslow suggested the following categories: biological and physical needs (air, food, shelter, sex etc.), safety needs (protection, limits, stability etc.), the need for love and belonging (the man has the need to love and to be loved), esteem needs (self-confidence, independence, status etc.), self-fulfilment needs (reaching personal potential, personal growth, and peak experiences). Subsequently, in the 1970s to the five basic needs were added cognitive needs (knowledge and respect) and aesthetic needs (seeking and appreciation of beauty, balance, and space) and in the 1990s to the list was added the need to help others achieve self-fulfilment. The claim that the satisfaction of these needs is made in a cascade is a false one, for example, people who lack food or safety may feel satisfaction situated at a superior level. Maslow's pyramid concept goes beyond the barriers of psychology, its applicability is valid in many areas of research.

Based on the statement made by Jon Lang in "Urban Design: The American Experience" (1994) "No design is able to meet all of everybody's needs simultaneously," and from the premise that man is the centre of existence we apply this theory in architecture and urbanism, approach used in other research.

Roman architect Vitruvius illustrates his opinion on the value of an emotional response in architecture in his architectural treatises where he describes the ideal building as a possessor of firmness, of goods, and in particular causer of delight. Authors such as Jane Jacobs, Christopher Alexander, and Jon Lang talk about the critical role of the user in design, a safe, beautiful and functional design at any scale and the relationship between human behaviour and urban design. To address the studied problem, we initiate a research in architecture and urbanism based on the perception's premises of the hierarchy of human needs based on the model developed by Maslow. As can be seen in figure 1 according to Maslow's model, the architectural object must satisfy the need of the individual classified here in five categories.

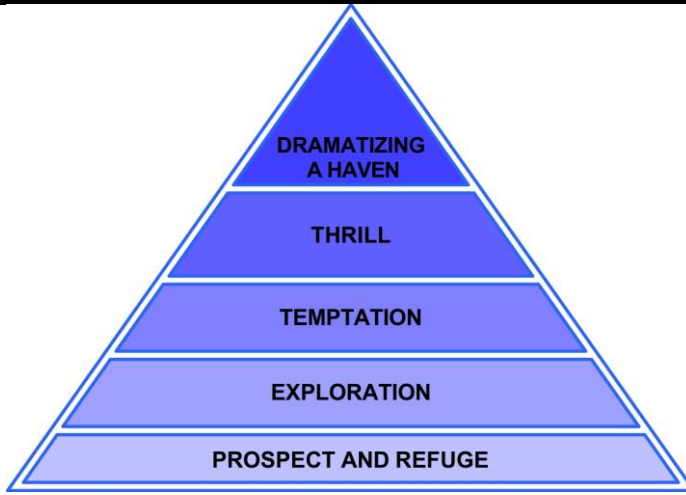


Fig. 1 Hierarchy of Needs in Architecture

On the bottom of the pyramid of the architectural needs is the need of the prospect and the refuge. Evolutionary perspective explains that people are not as well equipped as animals. Individuals prefer a shelter (refuge) facing the outside (prospect). Individuals perceive spaces either as horizons or shelters (sanctuaries). This need changes with time. Lighting, heights, crossings, time of the day, seasons, years, the moment of our lives and the sex of the user (men prefer prospects while women prefer shelters) play a complicated role in our perception of the primary need in architecture.

The next architectural need is the need for exploration. According to the evolutionary perspective, man explores to discover new food sources and to protect himself against possible threats. Curiosity is triggered by the environment and anticipating assumptions generates feelings of fascination and satisfaction within the individual.

At number three we encounter the need for temptation. People prefer to explore and move from darkness to light (from a closed to an opened space) to keep the refuge option near to them. This preference is explained by the desire of individuals to see without being seen. Conversely, people feel insecure.

Penultimate position in the pyramid is the need for a thrill, a combination of fear and pleasure. As Appleton says "... Seeking the assurance that we can handle danger by actually experiencing it is therefore itself a source of pleasure.", individuals explore with emotion the limits of real dangers, seen or felt, being able to avoid it, maintaining control.

At the pinnacle of the pyramid of architectural needs is the dramatization of heaven. The feeling of security is dramatized by near discomfort and even danger, refuge value is enhanced by proof of what protecting as G. Hildebrand stated in "Origins of Architectural Pleasure" (1999) "They intensify the value of the refuge

by giving evidence of what it protects against; the haven becomes more dramatically a haven.“.

Examining the fundamental needs of individuals (fig. 2) it is revealed an implication framework in design through which we can evaluate both existing and new urbanism responsive to the full condition of human existence.

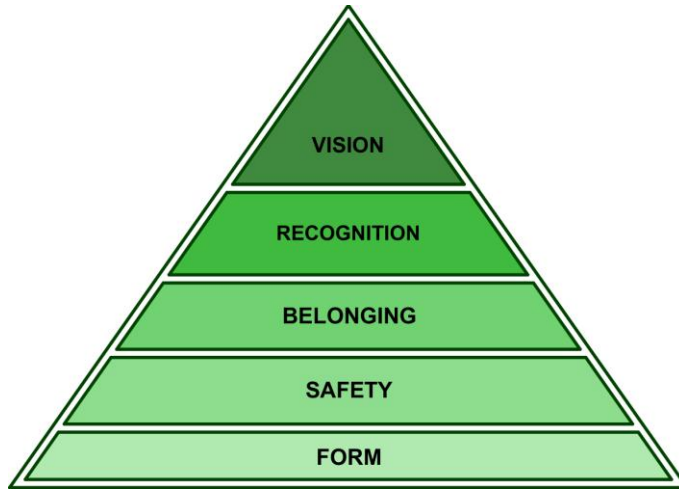


Fig. 2 Hierarchy of Needs in Urbanism

At the bottom of the urban design pyramid needs is form which requires clarity, legibility, connectivity, diversity, and accessibility. A clear area, easy to understand, intuitively covered by the user, capable of meeting the daily needs of individuals and accessible to everyone inside and outside. Design implications intend to propose a middle and an edge, a mix balanced of activities, a pedestrian scale, streets adapted to all types of transit, availability, and variety of housing programs and employment and access to transport to, from and within the space regardless of the mobility degree of the users. Priority is interest in the public spaces and civil buildings.

Form is followed by safety that requires the variety and availability of safe spaces in which individuals carry out their daily activities, the feeling of predictability and consistency of urban space, the absence of fear, the presence of security agents and a general state of "health". Design implications seek the proposal of safe routes for various activities, infrastructure elements (streets, alleys, parks, pedestrian paths, and recreational settings), the proposal of buildings and functions that follow a predictable pattern resulted from urban policies and predictable public trials that favour the implementation of urban design.

On the third level of the pyramid is the need of belonging achieved through the making and strengthening of the connections between neighbours and through

sharing the experience from joint activities. Design implications envisage the creation of the third space (cafes, pubs, beauty salons, beach, parks etc.), the planning of institutions that serve different segments of the community (schools, churches, cultural centres, libraries, community centres etc.) and providing a cityscape that individuals are proud of.

The penultimate position is occupied by the need for recognition achieved through links that produce identity. Design implications pursue the concrete celebration of design values, the creation of a strong identity and the development of activities, facilities, and impact institutions.

On the top of the urban design needs pyramid is vision which requires a common goal of self-fulfilment, continuity of basic needs in a creative approach to known or unknown future challenges and willingness to work as a team in the implementation process. Design implication aim at developing a detailed a flexible master plan which designs what is imagined and developing a process of policies and / or regulations that define how it should the vision be implemented. The act of conception envisages administrative policies, regulations and current and future requirements for physical, social, economic, cultural and environmental aspects.

This study is only part of the translation of human needs and the design implication that resulted.

CONCLUSIONS

1. In the act of conception matters how much professionals are influenced by their perception and how capable are to anticipate the perception of users.

2. Perception reflects the link between the physical world and the subjective world (through perception space becomes a place and the atmosphere becomes ambiance).

3. The pyramid of need in architecture and urbanism provide references to the act of conception conditioned by perceptions characteristics. For a holistic approach is needed a juxtaposition and a combination of the two pyramids and the traits of a successful space. So after the act of conception subordinated to the architectural and urban needs space must ensure shape, prospect, shelter, safety, the need for belonging, the need for exploring, the need for recognition, the need for temptation, the need for a thrill, vision and the need to dramatize heaven.

4. The answer to the question stated in the introduction is a partial one due to the many variables that play an important role in shaping perception, the findings from this work are a small part of the way to addressing the act of conception given the perceptions characteristics.

REFERENCES

1. **Appleton J., 1994** – *How I Made the World: Sharpin a View of Landscape*, Environmental Studies, pp.207
2. **Baches Mallory B.E., 2016** - *Hierarchy of Needs: Application in Urban Design and Community Building*, <http://mallorybaches.com/discuss/2016/1/26/hierarchy-of-needs>
3. **Baris M. E., Uckac L., Uslu A., 2009** – *Exploring public perception of urban identity: The case of Ankara, Turkey*, African Journal of Agricultural Research, 4(8), pp. 724-735
4. **Black P., Street E., 2014** – *The power of perceptions: Exploring the role of urban design in cycling behaviours and healthy ageing*, Transportation Research Procedia, 4, pp. 68-79
5. **CABE, 2003** – *The Councillor's Guide to Urban Design*, Design Council, <http://www.designcouncil.org.uk/sites/default/files/asset/document/councillors-guide-to-urban-design.pdf>
6. **Drooger S., 2010** – *5 Basic Human Concerns in Architecture*, Experiencing Architecture, <https://experiencingarchitecture.com/2010/02/23/5-basic-human-concerns-in-architecture/>
7. **Ewing R. et al., 2006** – *Identifying and Measuring Urban Design Qualities Related to Walkability*, Journal of Physical Activity and Health, 3(1), pp. 223-240
8. **Forsyth A., Krizek K., 2011** – *Urban Design: Is there a Distinctive View from the Bicycle?*, Journal of Urban Design, 16(4), pp. 531-549
9. **Jorgensen B. S., Stedman R. C., 2001** – *Sense of Place as an Attitude: Lakeshore Owners Attitude toward their Properties*, Journal of Environmental Psychology, 21, pp. 233-248
10. **Lappegrad H. A., 2007** – *Identity and Place: A Critical Comparison of three Identity Theories*, Architectural Science Review
11. **Llinares C., Montanana A., Navarro E., 2011** – *Differences in Architects and Nonarchitects' Perception of Urban Design: An Application of Kansei Engineering Techniques*, Urban Studies Research
12. **Maslow A. H., 1954** – *Motivation and Personality*, Ed. Harper & Row, New York, pp. 35-59
13. **Maslow A. H., 1943** – *A theory of human motivation*, Psychological Review, 50(4), pp. 370 -396
14. **O' Conner J., 1990** – *Elegant design for everyday life*, Harvard Bus Rev, 68, pp. 134-139
15. **Oktay D., Bala H. A., 2015** – *A Holistic Research Approach to measuring Urban Identity: Findings from Grine (Kyrenia) Area Study*, International Journal of Architecture Researsc, 9(2), pp. 201-2015
16. **Piga B., Morello E., 2015** – *Environmental design studies on perception and simulation: an urban design approach*, Ambiances Architecturales et Urbaines / Direction Generale des Patrimoines
17. **Salado A., Nilchiani R., 2013** – *Using Maslow's hierarchy of needs to define elegance in system architecture*, Procedia Computer Science, 16, pp. 927-936
18. **Ujang N., 2010** – *Place Attachment and Continuity of Urban Place Identity*, Asian Journal of Environment-Behaviour Studies, 5, pp. 61-76
19. **Vance U. S., 2012** – *Urbanity = Urban +Identity*, Sean Vance Architecture, <http://blog/seanvancearchitecture.com/blog/2012/01/09/urbanity-urban-identity/>