APPROACH TO HUMAN PERCEPTION IN ARCHITECTURE

[1]SILUH PUTU NATHA PRIMADEWI, [2]NGAKAN PUTU SUECA,
[3]NGAKAN KETUT ACWIN DWIJENDRA, [4]NI KETUT AYU SIWALATRI

[1]Student of Doctoral Program Engineering Science, Udayana University,
[2,3,4]Lecture of Doctoral Program Engineering Program Science, Udayana University
E-mail: [1]nathaprima@gmail.com

Abstract - The perception of each individual can be different on an object. If associated with the architect's point of view in architecture, the architect's perception depends on his ability to understand architecture based on the experience of the architect and the form or value contained in the architecture in providing understanding to the architect who saw it. This study aims to examine human perceptions, especially architects in architecture, by presenting a review of research literature relating to human perception in architecture. Various theories are used to understand or evaluate architectures such as: Environmental Ecological Perception, Brentano Theory, Brunswik Lens Model, Perception Transaction, Perception Phenomenology, attention theory. In general, there are four dimensions in human perception, namely cognitive, affective, interpretative, and evaluative, and based on that there are differences in perspective dimensions between architects and non-architects. The perception of objects in architecture is not limited to physical phenomena, but also mental phenomena as the motivation behind the formation of this physical phenomenon. Then the perception object in architecture is related to physical and mental phenomena (values) of architecture.

Index Terms - Perception, Architect, Architecture

I. INTRODUCTION

In general, architectural characters can be identified by seeing visually the constituent elements. Through visual, one can give a different response to an object. The many scientific approaches in architectural design show that the complexity of architectural design activities involves many aspects, one of which is perception. Through perception, humans can recognize, understand, then reconstruct things that are experienced such as architectural works. Perception can direct the architect in to a particular goal, and the architect can direct in to certain perceptions. This literature review study aims to find out human perceptions in architecture, in this case intends to see communication that occurs between architecture and humans who see it, especially perception theory, factors that influence human perception, and strategies for understanding perceptions that are expected to be useful. in enriching human experience and understanding in exploring architecture.

II. RESEARCH METHOD

This paper is a literature review relating to human perception in architecture published in scientific journals from 2010 to 2018. Research on literature review uses several criteria, including: research methodology used; the theory of human perception in understanding architecture; research variables, and findings related to human perception in architecture. Analysis of this article is expected to contribute to the knowledge and scientific community in general.
The variables in this study are: perception theory in architecture, perceptual processes in architecture, dimensions of human perception in architecture. Then the research findings are summarized and based on several aspects, including: theory, research methods, conclusions and variables (see table 1), and the findings are then evaluated based on the objective parameters of this literature review.

III. PERCEPTION

Etymologically, perception originates from perception which means observation, concept, awareness, and knowledge. Theoretically, perception is the process of gathering information from the human environment, active and persistent texts, then responding directly through sensory experiences and giving meaning to that information. Each perception involves two main elements (Grutter in [1]), namely the object (the perceived) and the subject (the perceiver), as well as elements of the situation (Robin in [1]). Perception is under special stimulation including knowledge, experience, emotional, cognitive variables, as well as observer decisions [1].

A. Factors Affect in Perception

In psychology it is known that there are three factors that influence perception, including: a stimulus that is human consciousness which has an effect on the sensory nervous system; a situation is an environmental condition that underlies the life of a stimulus; personal, namely things that are attached to people such as gender, age, education, needs, assumptions, beliefs, and mindset [2]. The environment has many factors that can provide information for humans. Therefore different environments will have different perceptual influences. Differences come from personal backgrounds (knowledge, experience, culture, and

physical); or comes from the situation content. Research shows that architects have different perceptions with others or it can be said that certain education is an important factor in perception [1], [3] - [6].

William Ittelson (Carmona, Tiesdell, Heath, & Oc, 2010), identifies four dimensions in perception: (1) cognitive involves the mind as organizing and storing information related to objects; (2) affective involves feeling as the influence of perceptions related to objects and vice versa, feelings are influenced by perceptions related to objects; (3) interpretative which includes the meaning or condition of an object by using previous experience to be compared with stimulation experienced now; (4) evaluative which includes values and preferences as well as determining positive or negative elements in an object.

B. Process in Perception

In perception, human understanding of an object occurs in stages, where human consciousness (stimulus) takes place when someone pays attention to something (attention), then realizes the existence of subjective sensations. To get an understanding of perceptions, there are several theories that explain the process of human perception of the environment including architecture including: Gestalt Theory, Ecological Perception of The Environment, Brentano Theory, Brunswik's Lens Model, Transaction of Perception, Theory of Attention. Gestalt theory is a perception theory commonly used in visual perception, especially in understanding the forms of architecture [1], [2], [4], [7] - [9]. The perception process begins with first impressions, then pays close attention, and finally reaches the level of cognitive processes. Based on the process it is known that human perception experiences two phases at once, the outer phase which collects information visually and the inner phase which processes information visually and mentally or cognitively. But James Gibson disagrees with the view of perception, according to him people can immediately feel what they are experiencing, Environmental Ecological Perception explains that perception consists of two components: an animal-environment system in which the perceptions of humans and animals perceive the world; and guiding activities where perceptions are not only the world seen by the subject but also culturally assisted by how humans respond to their environment.

Franz Brentano introduced a self-representation approach in the phenomenon of consciousness. In this case the view is directed at self-representation which is motivated by things that are consciously captured by humans by seeing and thinking [10]. Based on this, the theory divides human perception into two, outer perception, namely understanding objects through physical phenomena by seeing; inner perception that is understanding objects through mental phenomena by thinking. Empirically, humans are satisfied by physical entities, but intellectually and spiritually humans also need an understanding of motivation behind them. In architecture, inner and outer perception is needed to improve the experience of physical and mental phenomena when interpreting environmental characteristics.

To clarify physical and mental phenomena, the Brunswik Model will present the relationship of individual organisms to their environment such as the way a camera lens works which records all visual elements within its range, in this case the recording depends on the distance of the observer. Physical phenomena are recorded through distal cues, then for perceptual accuracy mental or cognitive phenomena are used through proximal cues by selecting characteristics and differences that exist in the environment, so signals are combined and processed so that the use of signaling occurs to make decisions about available choices. Furthermore, the Theory of Attention by Treismen and Gelade also proves that the phenomenology of "initial vision" is an important element of humans to lead to "focused attention" and then leads to cognitive processes and memorizing processes.

Table 1. Review on Perception in Architecture

Author and Year	Research Method	Theory	Conclusion	Variabel
(Yazdanfar et al., 2015)	Combined solution method	Gestalt	There is a significant difference between the architect and non-architect's ideas on the dimensions of perception of space. Architects: interpretative and cognitive, non-emotional and appreciative architects	Physical and mental
(Kiruthiga & Thirumaran, 2017)	The empirical method for analyzing building architectural elements in the study object and quantitatively with a regression model to examine the characteristics of inheritance.	Gestalt	Findings of architectural elements: pilasters, horizontal cornices, curved windows, decorative parapets can enhance the image of the city. This finding also supports a policy framework that enhances the city's visual perception.	Physical
(Pop, 2013)	Literature study	Gestalt	The designer reads the environment in terms of perception: the structure of the image, its composition, its elements; ordinary people see the environment in associative terms (certain information for them).	Physical
(Uzunoglu & Uzunoglu, 2011)	Literature study	Gestalt	In architectural education it is recommended to use visuals that are related to the environment because of differences between individual abilities, culture, perception and skills	Physical and mental

(Hegzi & Abdel-Fatah, 2018)	Experimental approach abd statistic method	Gestalt	Junior has a higher level of perception of deconstruction architecture than seniors who receive education and scientific material about architectural theory in general and specifically deconstruction	Physical
(Bianco, 2018)	Qualitative method	Gestalt	The design values and perceptions of the architect as read by members of the architectural profession do not fit into civil society.	Physical and mental
(Harisah & Masiming, 2008)(Hemström , Mahapatra, & Gustavsson, 2017)	Literature study	Gestalt, Ecological Perception of the environment, Brentano, Brunswik's model, transactional theory	Different perceptions of signs and symbols can also occur, because signs and symbols are influenced by the visual appearance they have	Physical and mental
(Alihodzic & Kurtovic-Folic, 2010)	Case study	Gestalt, Theory of Attention	The principles of perception of architectural forms are structure, expression, and meaning are the most important traits.	Physical and mental

Transaction of perception emphasizes dynamic interaction or contact between individuals and their environmental conditions. Lang in [8], made assumptions about perceptions, among others: (1) perception is multimodal and active processes; (2) perceptions cannot be explained by separating behavior into observers and those observed; (3) the relationship between individuals and their environment is a dynamic; (4) environmental conditions affect individual perceptions; (5) the image of the environment is influenced by the observer's past experience, motivation and attitudes in the present observer. Based on this, it is known that through experience, individuals can give attention to the environment and the important needs of the individual. Phenomenology of perception describes perception as world experience (space) which consists of three levels, namely: orientation is abstract level, identification is memory level, and representation is perception level [11].

IV. APPROACH TO HUMAN PERCEPTION IN ARCHITECTURE

In general, research on the perception of architecture is done by using several methods, including: field observation, literature study, experimentation, questionnaire to get the desired results according to the research objectives. Purposive sampling technique is used because basically there are many factors that influence perception so that it is necessary to determine the sample as the subject in perceiving architecture.

The theory used in human perception of the environment in general is Gestalt Theory, Ecological Perception of the Environment, Brentano Theory, Brunswik's Lens Model, Transaction of Perception, Phenomenology of Perception, theory of attention. Basically these theories have the same meaning only having different emphases in the process of perception.

In psychology there are three factors that influence perception: stimulus; situation; and personal, and these three factors are strongly influenced by their environment. In other words different environments result in different perceptions in each individual.

Differences come from personal backgrounds; or comes from the situation content. The environment can be perceived based on four dimensions including cognitive, affective, interpretative, evaluative. Basically, perception involves two main elements, namely the object (the perceived) and the subject (the perceiver), in this case architecture as an object of perception is not limited to physical phenomena, but also mental phenomena as motivations behind the formation of these physical phenomena.

CONCLUSION

Gestalt Theory is a general theory used in analyzing architectural forms, but other theories such as Ecological Perception of the Environment, Brentano Theory, Brunswik's Lens Model, Transaction of Perception, Phenomenology of Perception, theory of attention are also proven to be used in understanding or perceive architecture not only physically (visually) but also mentally (cognitive). In general the environment greatly influences human perception, but there are four dimensions used to measure perceptions of the environment including architecture and applied varies from each researcher in accordance with the research objectives. Object perception in architecture is not limited to physical phenomena, but also mental phenomena as motivations behind the formation of physical phenomena. Then the object of perception in architecture is related to physical and mental phenomena (values) of architecture.

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