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The Ever-rotating Aspects of Function-Form-Meaning in Architecture

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ABSTRACT

This research study presents a new triangular framework to deal with these main aspects. The framework presented does not only contain argumentation about the basic elements of its theory but supplements it by making its method operational. The main aspects of architecture proposed here consist of Function-Form-Meaning. This triangular model must always be in rotation in order to harmonize the relations between its various aspects. The benefits of this particular framework are that it can be employed as a frame of reference to interpret the quality of the relationships between these aspects involved in architecture, while simultaneously serving as a pilot project for the theoretical design of architecture. This new triangular framework may also benefit the process of further elaboration in the framework of developing architectural theory due to its supplementary argumentation of making it operational.

Keywords: Architectural theory, Architectural method, Function, Form, Meaning.

INTRODUCTION

Both the theory and practice of designing architecture are known to be very closely related to the developments and changes of a particular era. This state of affairs has made the study of main architectural aspects an important issue in the context of developing the theory and practice of architectural design. Up to now, all educational institutes of architecture in Indonesia always introduce Vitruvius's opinions at the initial stage of the study program offered.

By way of introduction, it is reiterated time and again that architecture consists of three important aspects, namely *Utilitas*, *Firmitas* and *Venustas* (usefulness-solidity-beauty). Based on the historical records available, these work written by Vitruvius constitute the most ancient written document ever found in the whole world [1]. In order to arrive at a proper definition of architecture, its essential aspects must be established first of all. This has made knowledge concerning the main aspects of architecture such an important issue in the educational world and in practice. This state of affairs has also drawn the attention of so many theoretical experts and professional architects in the field of architecture to express their individual views on the matter.

The majority of professional architects merely say amen to the opinions of Vitruvius, without critically reconsidering his opinions [2]. A minority begs to differ, and goes on to scrutinize or re-examine the actual validity of the latter's theories [3]. Most studies concerning architectural aspects available up to now still see eye to eye with Vitruvius, as a matter of fact. That is to say, the various aspects are merely identified without supplementing these with ways of making them operational. Therefore, the research to be conducted into these aspects that is both comprehensive and holistic, i.e. encompassing both theories and their operationalization, has indeed become an issue of paramount and ever-lasting importance, and open to further academic research.

This theoretical research study puts forward a new triangular framework dealing with the most essential aspects of architecture, namely Function-Form-Meaning. Apart from shedding light on the argumentation to explain why these three aspects are considered important, the study describes the relation between the rotating aspects of Function-Form-Meaning or their operationalization under real circumstances.

The aim of this theoretical study is to discover these aspects and their operationalization in order to be able to accommodate the developmental context of the progress made in architectural theory. Moreover, the benefits of the research result may serve as a reference to interpret the mutual relationships involved in architecture. Another benefit may be found in the ability to make theoretical architectural designs due to their having been supplemented by the process of operationalization. It is hoped that the final outcome of this research project will prove beneficial and provide a base for conduction further research that is bound to yield new theories concerning architecture.

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MATERIALS AND METHODS

This study discusses several important theories that may be put into effect as case studies. The various theories used as such have been purposefully determined by being based on the following criteria: first of all, architectural theory that focuses on the study of important aspects that mold architecture; secondly these theories can represent the architectural theories prevalent in the pre-modern era, the modern era and the post-modern one; thirdly, these theories form the written ones preserved in the form of books containing succinct arguments that deal with many aspects and their mutual relationship. In other words, they do not comprise theories presented without a brief explanation as can often be found in the pages of books that are much like a mixed bouquet of flowers.

Based on the three criteria above, the theories selected consist of the following: firstly, the theoretical writings of Vitruvius, as placed in the publication of the oldest written source ever found (25 BC). Apart from the ancientness of these theories, the latter's views have also taken up a prominent position in educational works and academic courses on Architecture all over the world and up to the present. Secondly, the theories proposed by Christian Norberg-Schulz [4] that tend to take their starting-point from the phenomenological approach. Thirdly, the theories put forward by DK Ching [5] that tend to be based on the formalistic approach. Fourthly, the theoretical writings of Rob Krier [6] based on positivistic empirical data. Fifthly, the theoretical views of Charles Jencks [7] that propose a post-modern interpretation. And finally, the theories presented by David Smith Capon [8], who constructs theories based on a Structuralist concept.

Each of the theories described above is subjected to an in-depth analysis, after which their aspects or elements are compared with one another. The analyses in question also emphasize the ways of finding possibilities to make them operational. The same applies to identifying the practical benefits of each theory to read (interpret) while simultaneously designing works of architecture. In each theory the context underlying the interpretation of the intellectual framework or philosophy that forms its background is thoroughly explored. In addition, the context of the architectural theories available is discussed, along with the scientific phenomena that occurred at the time of writing.

Based on the discussion about various theories dealing with the main aspects or elements described earlier, a triangular framework is presented in a diagram, which is a model based on the fusion between the Structuralist concept derived from Semiotics on the one hand, and Phenomenology on the other. In this triangular framework the most salient architectural aspects are formulated as Function-Form-Meaning. The continuous rotation of these aspects is also analyzed, along with its argumentation. Thus, this new triangular model presented here actually elucidates the steps taken that make its use operational, apart from succinctly identifying its aspects.

RESULTS AND DISCUSSION

Existing Theories on Important Aspects in Architecture

In his book *The Ten Books on Architecture*, [9] Vitruvius wrote: "All these must be built with due reference to durability, convenience, and beauty". Needless to say, this is not the original Latin version, but Morgan's translation of 1914. The original ran as follows: *Haec autem ita fieri debent, ut habeatur ratio firmitatis, utilitatis, venustatis*. In further developments or guises, the quotation was somehow turned into a veritable dogma. According to Vitruvius, *Firmitas* refers to structure and material. *Utilitas* refers more to the way buildings should provide comfort when utilized. Vitruvius held the view that *Venustas* represented the style of perfect beauty that would emerge if a building had been created according to the right principles.

The architect DK Ching presents views on aspects that are relatively similar in nature. According to Ching, the foremost aspect in the theory of (designing) architecture consists of three elements, namely space-structure-enclosure. Space refers to the space reserved for specific activity alias function; structure comprises technology or technological features labeled technics, while enclosure refers to the actual form. The combination of the three aspects mentioned above is realized by way of movement (motion) in space-time.

There have been quite a few architects from all over the world that have expressed their views on the substance of architectural design in writing, architect Rob Krier being one of them. In his book *Architectural Composition* he explains these views. The core of the matter can be found in his emphasis on three main aspects that need to be thoroughly comprehended, namely function, construction, and form. Krier describes how the process of creating form is based on the geometric order of basic forms.

An architect from Norway named Christian Norberg-Schulz in his book entitled *Intention in Architecture* also sheds light on the theory of architectural design. By sketching a background of perception and symbolism, he tries to analyse the main aspects of architecture. Running practically parallel with the views of Krier and Ching expressed earlier, Schulz also puts forth the element of form/technics and building tasks. He does not explicitly mention function, but focuses on analyzing various types of function labeled building task. He breaks down the latter into the ensuing order: physical control, functional frame, social milieu, and cultural symbolization.

When Charles Jencks introduced the concept of Postmodernism, the world of architecture began to direct its view to the approach adopted by Linguistics. This approach is considered to be capable of breaking the deadlock and the aridity (scarcity of ideas) found in the forms created by the concepts of modernism. The aspects of historical context and the language of metaphor were re-addressed and applied to buildings. Various examples in this vein can be gleaned from the classic book entitled *The Language of Postmodern Architecture*. At present, the Semiotics derived from Structuralism is beginning to seep through. [10] In-depth study of the interpretation of meaning in Structuralism is beginning to come to the surface in architectural discourse. [11]

Another intriguing view has been proposed by an architect named earlier, namely David Smith Capon. He tries to arrive at categorization in the field of architecture. Based on the concepts of Structuralism, [12] Capon proposes several arguments. He holds the view that all elements in nature always refer to a certain structure. Initially, all Capon really set out to accomplish was to stress the necessity for adopting this approach to categorization, not to theorize about architectural design. But several results yielded by the application of categories to several subjects turned out to be quite inspiring. Capon proposes primary categories for architecture, such as function-form-meaning. As for secondary categories, he suggests context-modality-will. When Capon tries to apply Vitruvius' views on function (utilitas)-construction (firmitas)-aesthetics (venustas) to the categories he arranged, it appears that construction and aesthetics are not appropriate terms for the main aspects. As it happens, construction falls under the secondary category of the primary one, namely form, while aesthetics does not fall under the primary but rather the secondary one.

Rotating Aspects of Function-Form-Meaning

Based on the succinct analysis above, philosophically speaking, the aspects of idea and expression are embedded in each and every form [13]. We can only give concrete shape to ideas and expression if there is a medium or "umbrella" for this purpose. Based on the diagram depicting the ideas-medium of expression, three most important aspects of architecture are: function (equivalent to idea or representamen), form (equivalent to medium or object) and meaning (equivalent to expression or interpretant) [14]. As a result, every outcome of architectural design must feature function-form-meaning at all times. In Figure 1 it can be discerned how the change (rotation) of these three ever-present aspects takes place. Every work of architecture must start with activity because this comprises the generator for the emergence of any architectural work. A building or construction made without reliance on the requirements of space that will accommodate a given activity ought to be labeled with the more appropriate term of sculpture.

Any activity or set of activities is bound to be characterized by a certain type of motion. [15] This can be centered as in collective or joint activity or show a tendency to move in linear ways. The type of motion of an activity or groups of several activities is what must subsequently be subjected to structure (arranged in accordance with its particular order) so that we can arrive at zoning.

This zoning structure must then be turned into spatial form by closing or covering it (enclosure) with horizontal and vertical elements. In a building, these elements typically consist of floors, walls, and a roof. So in terms of formal aspects, the structure and construction of these elements have already been included.

A specific form that accommodates space within, as intended for certain activities is bound to show some sort of expression. Whether bearing a certain message or not, every appearance of architectural form will always be interpreted by its observer, one way or another. This expression will naturally be read by the observer as derived from its initial appearance. No matter whether appearance implies the activity taking place in the building or the three-dimensional shape of the building down to the smallest details of the building in question. Apart from the mental aspect of interpreting the formal appearance in one's mind's eye, there is also the interpretation of substance attached to this. For instance, the color and texture of the surface of the shape and its various elements. The outcome of this interpretation of appearance will be interpreted by the observer.

Works of architecture are interpreted by their observers and users as items that, for better or worse, are based on cause and effect, similarity or agreement. By interpreting these works, the observer or user saves the appearance of the architectural formation in his mind. Following this process, whenever the observer perceives other architectural forms, he will match the existing image in his mind with these other shapes. Now if the meaning derived from this corresponds with the one saved in other people's minds, this meaning can be labeled collective significance. By the same token, if it differs from others, then it can be categorized as individual significance, i.e. restricted to the individual's perception and interpretation.

This phenomenon of matching is actually one of contextualizing [16]. In architecture, contextualization is integrated with culture and nature. A work of architecture made based on certain natural and cultural conditions will be too unusual for proper interpretation by observers who happen to live under different ones. If this interpretative process is continued on and on until it finds acceptance, surely new meaning will be created in marked contrast with the initial interpretation. As a result, this process is never-ending – it is a veritable *perpetuum mobile* going round and round [17]. It stands to reason that the existing meaning is always re-contextualized, and it is this context that will have an impact on the activities envisaged.

As a consequence, activity very much depends on its context, without exception. Thus, considering all of

the changes (rotations) sketched in Figure 1, it can be summarized that functional aspects are always related to context, formal aspects to structure, and meaning to interpretation of appearance.

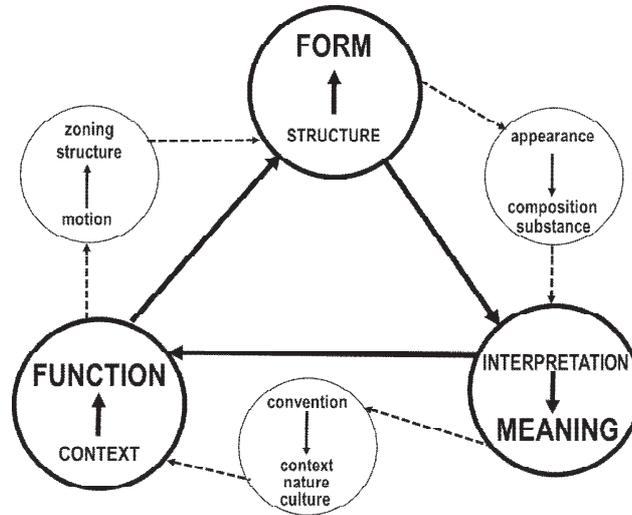


Figure 1: Diagram showing change(rotation) of the aspects Function-Form-Meaning

CONCLUSION

The result of this study yields the following conclusions: first of all, the three essential aspects that undoubtedly form the basis of all architectural form are Function-Form-Meaning. These three aspects must be present at all times, even though their individual importance may vary. Should one be lacking, then the work in question can simply not be categorized as a work of architecture. Secondly, the rotation of the aspects of Function-Form-Meaning in the diagram above depicts the process of making its steps operational along with their conversion. The functional aspect is always affected by its particular cultural and natural context. The formal aspect always contains within it the structure of the construction accommodating the function of zoning. The aspect of Meaning is obtained from the interpretation derived from the actual appearance of form. Thirdly, the process of making the three aspects described above operational may serve as a pilot project/guide for activities involving architectural design so that these activities become more focused and a harmonious relationship between their aspects may be attained. Fourthly, the rotation of the diagram presented above open up the possibility of broadening each aspect and its particular conversion in keeping with the changes that are bound to take place in life. This continuous elaboration may be made in the framework of producing new theories on architecture.

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