

VISUAL INTERPRETATION OF ARCHITECTURAL FORM

K. Gunce, Z. Erturk, S. Erturk

Department of Architecture, Eastern Mediterranean University, Famagusta

E-mail: kagan.gunce@emu.edu.tr

ABSTRACT: In architectural “Form Analysis”, main information on achieving both the improvement of visual analysis and the analytical approach has great importance. Achieving visual analysis through a concrete concept is a kind of image visualization. As well as artists, designers, choreographers and photographers, architects are capable of reflecting their interpretation through visual means. Receiving visual interpretations depends on visual sharpness; conveying them depends on the passage, and they only become relevant regarding the visual narration skills of the architect. Although they are pretty related, different events are occurring between visual sharpness and visualization in visual interpretation; similar to speaking and listening in communication.

The aim of this study is to introduce a kind of typological analysis technique for visual interpretation of architectural form, which will be examined under the headings of mass; space; and façade. These will be in regards to the applied process, relationships, organizations and ordering principles. Contemporary examples of Turkish Architecture will be analyzed by means of developed 2D matrix system taking into account the factors and techniques developed in the theoretical part of the recent study.

Keywords – architectural forms, contemporary Turkish architecture, typological analysis, visual interpretation

1. INTRODUCTION

Basic aim of this research is to develop a new methodology for analyzing “shape grammar” by taking architectural form as a “whole” with its mass, space and façades.

Interpretation and critiques on the contemporary architecture are, in general, evaluated where subjective values gain importance and they are based on comparisons. On the other hand, today, it becomes a requirement to use more objective methods and approaches for such interpretations and critiques. “Typological analysis techniques” have the opportunity to prepare the substructure to enable more objective evaluation.

In this study, the search is for theory of architectural form and its interpretation, which transcends the moment and reveals an architectural form idea. Under the light of this, the main aim of this study is to introduce a kind of typological analysis technique for visual interpretation of architectural form, which will be examined under the headings of mass; space; and façade.

The study is organized into two main parts. The first concentration on the “introduced analysis method” in the frame of theory; applied process, relationships, organizations and ordering principles are interpreted by using visual materials. By using applied process, relationships, organizations and ordering principles and mass, space and façades will be developed in a 2D matrix. In the second part, the application area and its analysis technique is defined. In the frame of the typological analysis technique for visual interpretation of architectural form, the technique for this study is the elaborate examination from contemporary examples of Turkish Architecture. These examples will be analyzed by means of the developed *2D matrix system* taking into account the factors and techniques developed in the theoretical part of the recent study.

2. METHODOLOGY

With architecture's emergence as a profession, architects have pondered the concept of form. In their scientific foundation, architects like Vitruvius, Alberti, Palladio, and Corbusier all gave considerable attention to form (Weber, 1995).

Instead of the three Vitruvian concepts of equal weight, 'form', 'function' and 'construction'; in the Modern Movement, a concentration on just two, form and function with a third category, 'meaning', which represented the styles of the past were developed. Meanwhile, the notion that "form follows function" was defined as a key concept of this twentieth-century thought (Wright, 1955, Capon, 1999).

Interpretation of the form based on the Vitruvian triad according to the study, can be mentioned in five divisions. These are the Vitruvian triad, exemplified by Rob Krier (1988); the Modern Movement that is a move away from Historicism and Tradition; the new triad of the Modern Movement; Post-Modernism that is a move of Modernism towards Historicism, Neo-Vernacularism and Neo-Classicism; and Late-Modernism that is a move towards New Geometrical Order and High-Technology.

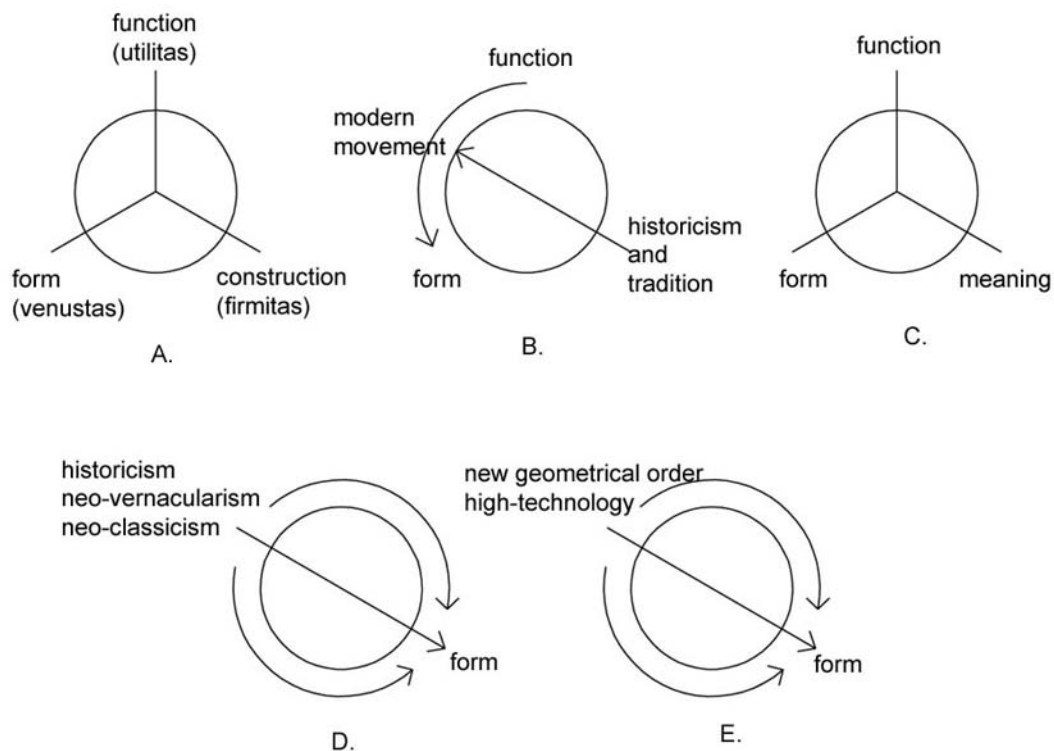


Fig. 1. Interpretation of the Vitruvian triad, exemplified by Rob Krier (1988) (A.), The Modern Movement that is a move away from Historicism (B.), the new triad of the Modern Movement (C.), Post-Modernism that is a move from Historicism, Neo-Vernacularism and Neo-Classicism (D.), Late-Modernism that is a move from New Geometrical Order, High-Technology (E.) (Capon, 1999).

Capon (1999) has separated six concepts of architectural thought into two, as primary and secondary categories. Primary category involves form, function and meaning whereas secondary category consists of construction, context and spirit.

As can be observed from various descriptions of architecture all through the ages, it becomes obvious that no matter how the aim of architecture is put forward by the theoreticians, "form" occupies the most of importance. The concentration of this study will

be placed on this conception, and analysis of form will cover the analysis of its components as mass, space and façade.

In architectural “Form Analysis”, main information on achieving both the improvement of visual analysis and the analytical approach has great importance. Achieving visual analysis through a concrete concept is a kind of image visualization. As well as artists, designers, choreographers and photographers, architects are capable of reflecting their interpretation through visual means. Receiving visual interpretations depends on visual sharpness; conveying them depends on the passage, and they only become relevant regarding the visual narration skills of the architect. Although they are pretty related, different events are occurring between visual sharpness and visualization in visual interpretation; similar to speaking and listening in communication.

As it is mentioned before, the typological analysis technique for visual interpretation of architectural form will be in regards to the applied process, relationships, organizations and ordering principles. In the light of theoretical background, the analysis of form in architecture has to include “members of architectural form”, and “architectural form analysis” which has four sub-headings such as processes, relationships, organizations, ordering principles.

Form in architecture; is defined as a meaningful whole that is formed by the dialectic relationship of the formal components. Schulz handles the word “component” in architecture as the smallest characteristic unit that is one of the elements of architectural form. According to this, the architectural form components are categorized mainly as “mass”, “space” and “façade” (Schulz, 1988). In relation to these categories, architectural form, mass, space and façade headings can be branched by many concepts that are very important in terms of identifying the form.

Architectural form which can be divided in three categories such as “mass”, “space” and “façade” are defined by graphic expressions and analyzed under these headings:

- Processes
- Relationships
- Organizations
- Ordering Principles

Below, form composition components and their varieties are also defined by using graphic expressions. By using these two components, a 2D matrix system is created.

Table 1. Components based on the 2D matrix system.

Architectural Form Components	Architectural Form Composition Components
Mass	<ul style="list-style-type: none"> • Processes • Relationships • Organizations • Ordering Principles
Space	
Façade	

It is possible to branch the architectural form’s composition components. Processes can be branched as “whole (no process)”, “addition”, “subtraction”, “deformation” and “combined processes”; relationships can be branched as “unique (no relationship)”, “interlocking (intersecting)”, “adjacent (neighboring or contiguous)”, “linking” and

“combined relationships”; organizations can be branched as “nodal organization”, “clustered organization”, “linear organization”, “gridiron organization”, “combined organizations”; and ordering principles can be branched as “repetition”, “hierarchy” “alteration”, “harmony”, “gradation”, “contrast”, dominance”, “unity”, “balance” and “combined ordering principles” (Chink, 1996, Krier, 1988).

Table 2. List of components of the “Shape Grammar”

Architectural Form Composition Components	Sub-divisions of the components
Processes	<ul style="list-style-type: none"> • Whole (no process) • Addition • Subtraction • Deformation • Combined processes
Relationships	<ul style="list-style-type: none"> • Unique (no relationship) • Interlocking (intersecting) • Adjacent (neighboring or contiguous) • Linking • Combined relationships
Organizations	<ul style="list-style-type: none"> • Nodal organization • Clustered organization • Linear organization <ul style="list-style-type: none"> ○ One-way arranged organization ○ Two-way arranged organization • Gridiron organization • Combined organizations
Ordering Principles	<ul style="list-style-type: none"> • Repetition • Hierarchy • Alteration • Harmony • Gradation • Contrast • Dominance • Unity • Balance • Combined ordering principles

Processes for mass, space and façades, named as addition, subtraction and deformation, can be searched into four general headings. (*Whole and combined processes are exceptional*). These are:

- Horizontal (lateral) process
- Vertical process
 - Process from the top
 - Process from the bottom
- Oblique process

- Combined process

Relationships for mass, space and façades, named as interlocking (intersecting), adjacent (neighboring or contiguous) and linking, can be searched into two general headings and these headings can be classified into three sub-heading. (*Unique and combined relationships are exceptional*). These are:

- Same or similar geometric shape relationship
 - Straight relationship
 - Angled relationship
 - Other special relationship
- Different geometric shape relationship
 - Straight relationship
 - Angled relationship
 - Other special relationship

Organizations for mass, space and façades, named as clustered organization; linear organization; one-way arranged organization; two-way arranged organization; and gridiron organization; can be searched into three general headings. (*Nodal organization and combined organization are exceptional*). These are:

- Vertical organization
- Horizontal organization
 - Straight organization
 - Angled organization
- Oblique organization

Ordering principles for mass, space and façades named as repetition, hierarchy, alteration, harmony, gradation, contrast, dominance, unity, balance and combined ordering principle, will be branched and searched.

Beside the architectural form's composition components, its branches and theoretical base to communicate the analysis of the buildings, and together with the formative ideas in this study; a diagram or a set of diagrams is utilized as well. The diagrams are drawings that, as abstractions, are intended to convey essential characteristics and relationships in a building. As such, the diagrams focus on specific physical attributes which allow for the comparison of that attribute between buildings independent of processes, relationships, organizations and ordering principles. The diagrams are developed from the three dimensional mass, space and façade configurations of the selected building. They take into account more information than is normally apparent in a three dimensional drawing like plan, elevation and section. In order to reduce the building into its essentials, the diagrams have been intentionally simplified. This elimination of all but the most important considerations makes those that remain both dominant and memorable.

3. CASE STUDY

In this part of the study, contemporary examples of Turkish Architecture will be analyzed by means of the developed "2D Matrix" system taking into account the factors and techniques developed in the theoretical part of the study.

Starting the analysis, the plan, sections and elevations for selected building are drawn at the same scale and taken photographs from general; interior and detail views are attached. Name of the building, its architect(s), construction year, building location, main function, construction system are indicated as a personal register. Each project will be analysed according to those components given on Table 2. They will be analyzed in various steps, which are as follows:

Table 3. The flow diagram of the application steps

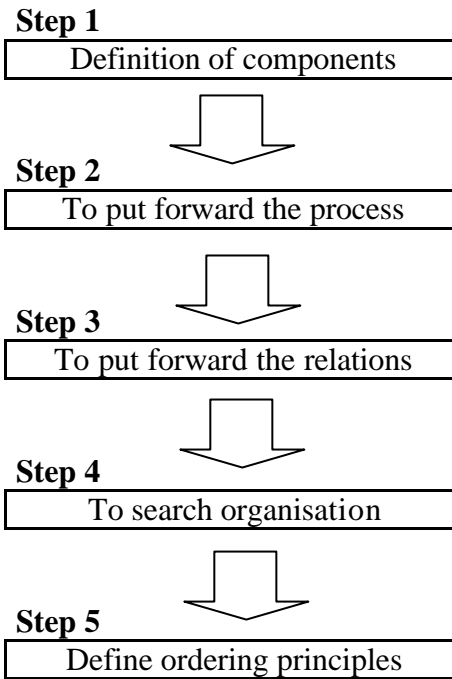


Table 4. Project identity cards of selected buildings.












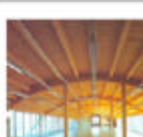
25x30x60x6000 Komut			Irmak Lisesi		
Example: -AS-	Period:	Personal Register	Example: -AS-	Period:	Personal Register
	Architect/s	: Nevzat Sayin		Architect/s	: Nevzat Sayin
	Construction Year	: 2008		Construction Year	: 1907-1908
	Code:	Building Location		Code:	Building Location
0020	: Bodrum	0043	: Istanbul	Main Function	: School
	Main Function	: House		Construction System	: Reinforced Concrete
	Construction System	: Load Bearing			
Graphical Explanation	Plans		Graphical Explanation	Plans	
	Section			Section	
	Elevation			Elevation	
Photographs	General View		Photographs	General View	
	Internal View			Internal View	
	Detail View			Detail View	

Table 5. Project identity cards of selected buildings.

CAM PIRAMİT SABANCI KONGRE VE FUAR MERKEZİ			Mercedes-Benz Pazarlama ve Yedek Parça Merkez Tesisi		
Example: -55-	Period:	Personal Register	Example: -55-	Period:	Personal Register
	Architect's:	Yasir Maniyah, Levent Akalt		Architect's:	Turgut Altın
	Construction Year:	xxxx		Construction Year:	xxxx
	Code:	0020		Code:	0054
	Building Location:	Antalya		Building Location:	İstanbul
	Main Function:	Congre and Fair Center		Main Function:	Marketing Office
	Construction System:	Reinforced Concrete		Construction System:	Reinforced Concrete
Graphical Explanation	Plans		Graphical Explanation	Plans	
	Section			Section	
	Elevation				Elevation
Photographs	General View		Photographs	General View	
	Internal View			Internal View	
	Detail View				Detail View

As it is mentioned before, beside the architectural form's composition components, its branches and their theoretical base to communicate the analysis of the buildings and the formative ideas in this study, a diagram or a set of diagrams is utilized. After these, the selected building's form components which are defined as mass, space and façade are coincided with the selected building's form composition components, which are defined as processes, relationships, organizations and ordering principles. In this frame, selected buildings and the selected period are interpreted.

4. CONCLUSION

This study is an observational type of research work on architectural form. Architecture has to provide us with physical shelter from our environment, create a framework for our activities and also, above all, express symbolic and ethical values (Krier, 1988). Therefore; to introduce a new methodology for analyzing all those features is important.

The basic observations and pilot studies show that;

- The proposed methodology will work in order to analyze the formal features of the building and projects,
- In order to apply the developed technique to more detailed catalogues for certain periods or an architect.
- The level of richness of the catalogues will give more sound understanding on the style, period or architects.

- This is a methodology concentrated on the formal analysis of the architectural form, but on the other hand, semiological values and meaning of the form were left out. Most probably this is the point that is open to be criticized through this study.

As a last word, the study with its aims could be summarized as below:

Shape grammar is a set of generating rules to create shapes. This methodology is a new technique which will provide a base for setting up the shape grammar of a certain style, or an architect or even a period. It is clear that the “grammar” of the mass, space and also façades will be defined by means of the developed technique and the process.

One shape grammar can create many shapes which can be called a design language. So far only the rules of the combination of shapes have been looked for; but in this research, not only the rules and principles of basic combinations but also different form generating processes have been taken into consideration.

5. REFERENCES

Capon, D. S., 1999, *Architectural Theory*, Volume One, John Wiley and Sons, New York.

Chirk, F. D. K., 1996, *Architecture: Form, Space and Order*, John Wiley and Sons, New York.

Krier, R., 1988, *Architectural Composition*, Rizzoli, New York.

Schulz, C. N., 1988, *Architecture: Meaning and Place, Selected Essays*, Electa/Rizzoli, New York.

Weber, R., 1995, *On the Aesthetics of Architecture*, Avebure, London.

Wright, F. L., 1955, *The Future of Architecture*, The Architectural Press, London.