

Concepts of spatial criticism in the architecture " The Role of Critical Concepts in Contemporary Design"

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ABSTRACT

The place that identified the ways of thinking is responsible for formulating the physical existence of human space that is linked to the users' social and psychological memory. Where the research clarified the spatial concepts in architecture, which required a critical study for the previous literature to reach the difference in the effectiveness of place in contemporary design, especially the previous literature that differs in its views and lacks comprehensiveness. Accordingly, the research problem was represented by the following: "There is a lack of knowledge about the role of spatial criticism concepts in contemporary design". This research aims to firstly reveal the unknown area to distinguish between the states of "place and space" in architecture, and to secondly clarify the vocabulary of spatial criticism and its variables responsible for the formation of the place. This work has adopted the ground theory approach as a methodology aimed at building an intellectual model for the vocabulary of spatial criticism from the study of the previous literature and systematically analyzing it by using a comparative analysis.

Keywords: Spatial Criticism, Place, Space, Architecture

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1. Introduction

Place is one of the basic concepts in our daily life, because of its role in containing public and private human activities. The concept of place is different in the previous literature, including architecture, especially its role in the production of multi-level places by dealing with the geographical space of human activity. Therefore, it was necessary to define the main concepts of spatial criticism to reveal the functional and semiotic status of the place in terms of discourse, intimacy, metaphor, position, in between space, or the spatial dimension of the place as a condition serving modern trends. Accordingly, the research problem was represented by the following: "There is a lack of knowledge about the role of spatial criticism concepts in contemporary design"[1]. In order to solve the research problem, its structure was divided into three axes. The first one includes building the knowledge framework of the place and space through the previous literature. The second focuses on building the theoretical framework through the analysis of previous studies, it also identified the main and secondary indicators and possible values that clarify the critical concepts of spatial architecture. Finally, the third axe presents the conclusion and recommendations.

2. Knowledge framework: Spatial identifiers - limitations of subscription & separation

This axis discusses Spatial identifiers in architecture through three main areas, namely: Spatial initiation,

Measures to verify the relationship of (place - space), and Spatial space & contemporary formation.

2.1. Spatial initiation in architecture

Throughout the ages, the place has participated in the development of hypotheses, ranging from the centrality of architectural production to a modernism that moved away from the recycling of previous models to the fusion of spatial relations and characteristics with city spaces. This was confirmed by the book (The Modernity of Underdevelopment), as the place was not considered as an unlimited space, but rather as a force that emphasizes stability, relational and internal centralization when designing, which achieves similar or different projects and enhances social and psychological aspects as well as multiple interpretations of spatial production[2]. For example, in the Louvre Museum in Abu Dhabi, we find that the architect “Jean Nouvel” designed the place according to symbolic and social values, realizing the illusion of space for spatial elements through a rotational movement from spatial reality to unreal space, see the following Figure 1.

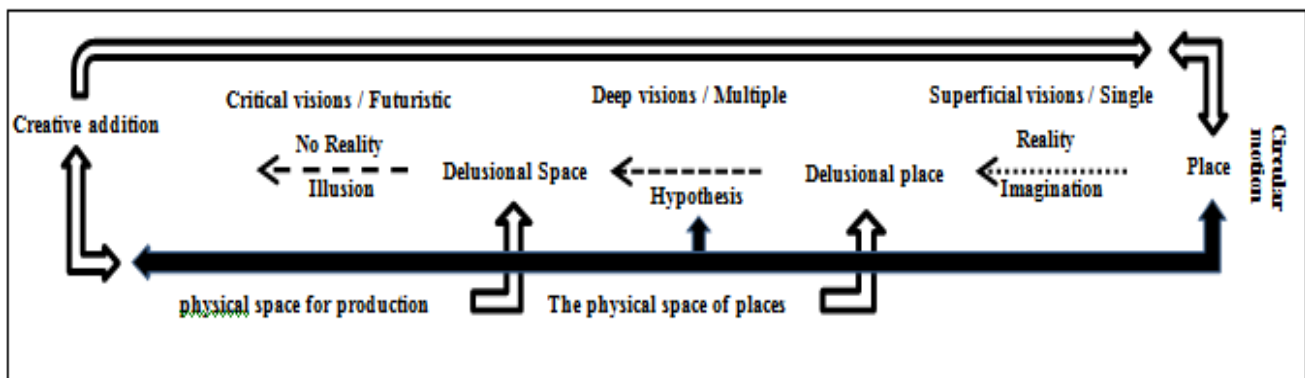


Figure 1. Movement of spatial content with product development, (Source: researcher)

2.2. Measures to verify the relationship of (place - space)

The current research has sought to avoid the conceptual confusion when dealing with place and space, as a result of the lack of measurement that shows the limits of knowledge for both of them. Therefore, architectural and non-architectural knowledge was used in order to firstly understand the nature of the relationship between them and to secondly distinct them, as follows:

- Scientifically and technically: The usage methods of the place and space differ, as the place was known by predetermining the location while space contains activities according to scientific & technical developments [3].
- Linguistically: Space is different from reality, as it is formed from invisible elements of the place, which is a tool that controls the design of space [4].
- Functionally: the space describes the cultural discourse as part of the concepts of “globalization and connectivity,”, while the place tells history about the urban, cultural, and social level [5].
- Contemporary identity: investing the space and place in promoting differences is done according to a heritage and cultural values on one hand, and dealing with temporal variables on the other.
- Regularity: Spatial positioning is based on integrating the invisible variables of the place with the visible space, in accordance with contemporary goals [6].

Based on the above, the place contains visible and invisible elements, which regulate the relationship of the environment with human activities. Accordingly, the place has transcended its geographical, geological and social limits to physical and symbolic structure capable of similarity or difference within new space hypotheses, which create a circumstantial regularity represented by the "architectural event". Finally, contemporary space is formed by the intersection of symbolic levels with structures of forms in a specific location, as shown in Figure 2.

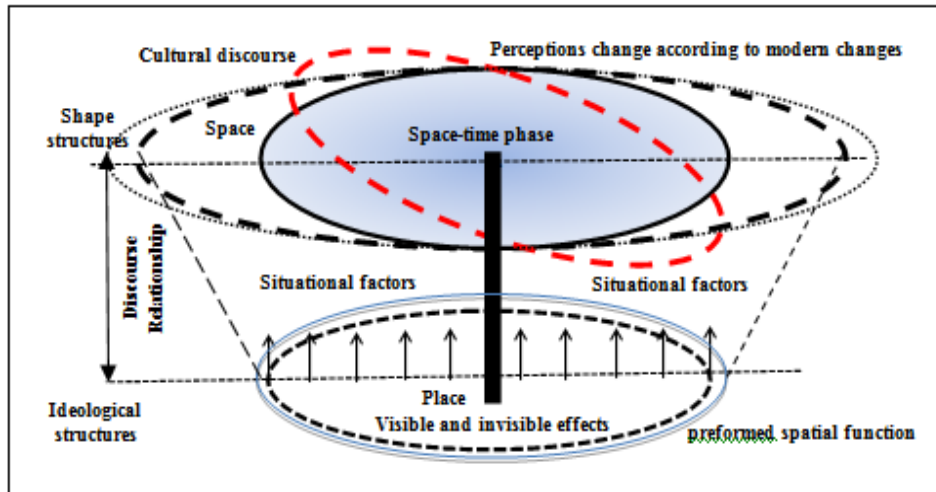


Figure 2. The relationship of "place and space" and their impact on contemporary formation, (Source: researcher).

2.3. Spatial space and contemporary formation

Spatial effects differ depending on the nature of the place and design conditions, and these effects are:

- Non Physical Effects: these depend on the critical visions which the spatial form intersects with the idea, thus forming a “symbolic place”.
- Physical Effects: these depend on specificity by describing spatial events, thus creating a “descriptive place”.

For example, the International Book Fair project was determined by the geographical positioning through the nature of the spaces “central courtyards, alleys”, and similar local structural elements such as “columns, corridors”, as well as the use of horizontal surfaces in the ceilings to protect against environmental influences, while the vertical elements were used to define the entrances and assembly areas. As for the details, it is noted the use of thick external walls in specific places, wooden floors, and plasterboards [7]. Based on the above, the place provides part of the requirements of contemporary space through the inclusion of physical and symbolic factors such as society, traditions and technology, allowing the space to be transformed into a contemporary space, Note the following Figure 3 & 4.

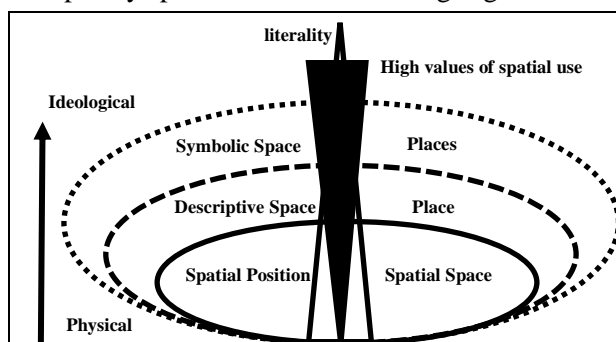


Figure 3. Spatial levels and their impact on the architectural formation, (Source : researcher).



Figure 4. International Book Fair- Al Riyadh, Saudi Arabia

3. Vocabulary of the theoretical framework (concepts of spatial criticism and their impact on contemporary design)

This paragraph discusses the concepts of spatial criticism, where the architect's vision of the place is renewed, and accordingly the architecture avoids designing traditional formations, but rather designs a creative product that integrates with the contemporary place.

3.1 Spatial boundaries

The previous architectural literature classified spatial boundaries in two different directions about the nature of the “product-place” relationship, some specific and others not defined according to spatial conditions and design goals.

- **Spatial Boundaries - Spatial:** It is defined by invisible spatial determinants, and it contains two directions: the first, (change / penetration) addition, truncation, and deletion of shape elements. And the second, (change / substitution) [8]. For example, the Four Seasons Hotel in Istanbul, which preserved the visions of Ottoman palaces distinguished by the unity of composition at the level of "repetition, symmetry, control, continuity" through building mass, horizontal and vertical lines, elements such as openings "doors, windows" for Roman arches, the local materials were also used in the exterior finishes of the facades, "marble", and the harmony between the color gradations with the contextual heritage of the place. As for the penetration, it occurred in functional and service aspects, including: the multi-functionality of the project and the use of operating systems “lighting and sustainable ceilings covered with energy panels. As for the substitution; It was investigated in (the monument of the martyr - Baghdad), when the designer chose the Islamic dome as a local maintenance of an ideological heritage, which embodied the “martyrdom event” away from his previous religious function [9].
- **Spatial boundaries - space:** An innovative performance area that explores the boundaries between the application matrix, scientific, economic and political concepts, and the spatial presence, resulting in an interactive space [10]. It relies on hybridization in simulating architectural and non-architectural spatial references, provided that development issues and technical innovations are accommodated, resulting in an architectural product adapted from practical hypotheses [11]. Accordingly, places have been formed in harmony with human practices [12].

Spatial boundaries mean "the possibility of a thing's demise without removing its space". The prisoner is not in the body but in the absence of freedom, and therefore the spatial boundaries helped the designer to employ his imagination while dealing with the elements of the place after analyzing them into lines, elements, surfaces, blocks that are affected by the ideology of the place, which means that the spatial boundaries do not give a detailed art when producing space, but rather a process of formation Architectural output according to spatial criticism vocabulary, note the following Figure 5:

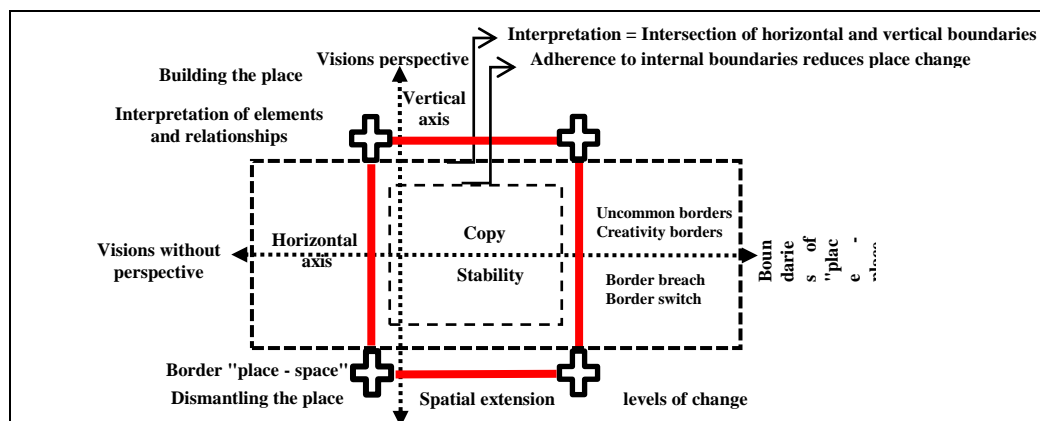


Figure 5. Architectural production scheme according to the vision of the intersection of "spatial and spatial" boundaries, (Source: researcher)

3.2 Space discourse

Space discourse retrieves scientific concepts, ideas and techniques to the spatial source, accordingly transforming the design from shapes, spaces and descriptive elements to a complex product formed by symbols and ideas [13]. Among the most important objectives of the space discourse are:

- **Secularization of space:** the representation of science in the place, where science contributed by its concepts, ideas and techniques to show the place in a new way, and accordingly the architectural production was distinguished by levels of spatial criticism with creative shapes and spatially identical plans[14].

- Cultural investment: Strengthening the cultural constants of architecture, and the change in spatial dimensions psychologically affects the occupants, thus the huge scale of forms can be adopted for the purpose of cultural emphasis, as well as historical and anthropological communication [15].
- The Dimensions of performance: The contemporary discourse can emphasize several dimensions that confirm the investment of space discourse, which are:

1- Usability: It means the designer's ability to invest the imagination of the material by revealing its history and innovative formative capabilities, such as internal flatness and adaptation, which changed the rules of composition and geometric equations of the spatial shape [16].

2- Operation: It indicates the transformation of the operating functions of the previous places after the use of contemporary technology in the places.

3- Procedural: It means the abstraction contrary to the ancient forms, which help to understand and comprehend the reality of the place, as the sculpture contributed to reflecting the designer's ideas and giving way to interpretation [17].

The space discourse has changed the place according to contemporary goals, for example, the caves were transformed from (a natural place) into a museum to commemorate the revolutionaries, and the "deep seas" turned into the city of dreams. Accordingly, the space discourse adopted the place as structures with identity and significance that the space invested in with new relationships to become part of protective structures.

3.3 Space Intimacy

It means exploring places based on intertextuality. For example, the Beijing Olympic Park project, where designers studied Chinese ceramics to design a porous building, as a metaphor for a mythological or symbolic event, which contributed to bridge the distance between "event - place" to create a harmonious spatial context that expands perceptions and ensures Meanings related to cognitive accumulation[18]. As for the methods of intimacy in the design of the place, through an external metaphor that is temporally and spatially compatible, as well as the harmony of that metaphor with the spatial function. Its patterns also varied according to spatial specificity, between singular (focal) where different metaphors are fused with a single design model, as in religious and capitalist places, or multiple (focals) that include different metaphors from inside and outside the field of architecture, as in commercial and entertainment places [18].

The response of architectural movements to intimate space varies. In local architecture, the response was weak, while the response of modern architecture was medium to exclude the concept of the privacy of place, while the response of postmodern architecture was good, and finally the response of deconstructive architecture was a contrast with the place.

3.4 Dedicate

The paradox of place can be integrated with another spatial context through concealment or distortion. For example, the Iraqi parliament building project, the cube was divided in addition to adjusting its positions, and accordingly it was distinguished by juxtaposition and spacing while preserving the transparency of the opposite surfaces and the "inside-out" relationship between the surfaces that penetrated each other. Also, the mixture between the concavity and convexity of the geometric surfaces entailed the architectural product with new meanings within the place [19].

Based on the above, it means creating spatial convergence, given that contemporary does not depend on tradition, but on scientific, social, anthropological, and philosophical knowledge, so it is not possible to design a place far from its spatial stations (a reference thing).

3.5 Space position

It determines the "discourse of place" that contains the project, and the explanation of positioning in modern architecture as a function of containing human activity, while postmodern architecture interpreted it as a function of observation and visual communication[16]. As for "spatial positioning"; the place was considered as an external space to translate the "discourse of place" with the building through the design process . Accordingly, the designer directed towards semantics, because of the meanings that the site contains, which gave the architectural product the feature of creativity, on the condition that it preserves "spatial positioning" [20].

Based on the above, the spatial position represents a new organizing mechanism when reading the architectural product in two ways: the first is the adoption of modern spatial criticism methods in designing an architectural product with the aim of compatibility with the place, and the second is the reliance on design concepts that establish an architecture that is partially proportional to the place.

3.6 In between space

The concept of “between” defines a place in two ways:

- The Solid place: direct, undersigned borders formed from the borders of neighboring sites.
- The Flexible place: designed indirect borders created from the design of the boundaries of the place and the relationship with its neighboring sites [11]. As for its fields:
- The Mixe space (in between): It includes the natural and industrial space. However, it does not belong to a specific spatial symbolic context [11].
- Contraste space (in between): It means historical and economic spaces, where the space has several objectives, including: "development, rehabilitation, renovation, etc." Accordingly, a harmonious and diverse spatial space is formed [15].
- Similar space (in between): It means the symbolic spaces, whether public or private, including: "the memorial plaza, the courtyards of the residential complexes". Accordingly, an iconic spatial space is formed that represents the strength of the community [15].

Based on the above, it means the middle space, which is surrounded by other spaces or different levels, making its borders designed directly or indirectly with the aim of forming architectural spaces to accommodate different human activities.

3.7 Distance

It is associated with spatial events depicting the product as a 'position' that leads to questioning the location of the true perspective model . Accordingly, the distance was classified architecturally through two aspects:

- The physical aspect: geometric design of the place, starting with the realization of the shape "mass" and its formations (the elements) down to the detail "point, line, plane" [15].
- Rhythm and gradation: this includes the levels of movement & stability, and the degree of their strength and nature "surface, scale, space". The distance shows how the meanings and organizing powers of ideas can be expressed and changed in a way that enhances spatial positioning [12].

Architecture is a flexible musical expression, as it adjusts the rhythm of the building through distance as a mechanism that determines its position, as well as its boundaries, which gives the place subjective and objective characteristics.

3.8 Space metaphor

There are many forms of space metaphor between trends that care about identity or security aspects, such as control, surveillance, or Situational (place - time), which achieve the social purpose [16]. The Space metaphor is classified into two kinds, namely:

- Traditional Spatial Concepts: The process of transferring models from one field to another, directly or indirectly (creative) to reformulate the symbolism of the place functionally.
- Unconventional spatial concepts: they indicate the process of associating the characteristics of the "source, whether from inside or outside the field of architecture" with the "design goal", which means the process of modeling the idea with multiple levels of formation (mass and void) within a specific place .

An Example for that is The Norwegian Opera and Ballet (which connects the building to the ground) near the port of Oslo, the building is designed as a large glacier flowing into the fjord in white granite materials with Italian marble to feel the illusion of shining ice. The corridors also helped to walk and watch together, and the mass is designed as frozen water in the winter, making it indistinguishable from its environment, making the building an integral part of Oslo. Finally, the relationship of place design with the site includes three concepts, which are:

- Exploring the theoretical meaning: Professional identification when creating and benefiting from the model after investigating the idea and its reflection on the place.
- The physical impact of spatial artifacts: a method for containing new cultural functions.
- Expressing innovative spatial concepts: new concepts that conflict with the spatial context .

The metaphor consists of two parts: “form and idea”. For example, a house is a shelter; But its essence expresses “life, patriotism, protection”, so the metaphor is a mechanism that helps the designer to express his ideas and forming them in the buildings.

3.9 Communicative efficiency

The communicative efficiency has been defined within three measures:

- Self-ability: Testing the number of objective messages of the architectural output "cultural, economic, etc", which requires thinking about context of the space and identifying the events that control the paths of the message through a process of affirmation or negation of context according to the levels of multiple places.
- The space paradox: the lack of proportion and rhythm between the elements of the space may cause the dispersal of the sent messages “temporarily or permanently”, and this happens at the level of space or mass, which requires defining the contradictions between space and place in order to activate the forces of integration or separation between them.
- Situational (place - time): It is located within the design objectives so that the sent symbols correspond to design goals and the discourse of space, and it is also affected by social relations and the effectiveness of the place that contributes to the development of the discourse between the product and the user, and therefore, the designer must use spatial symbols to achieve “communicative efficiency”.

Based on the above, the space of the place does not mean the place with its contents, but rather it contains history and design relations. The khan, for example, is not a storehouse of grain and goods, but rather an economic function of the relationship between the producer and the consumer. Thus, the place contains a set of economic, political, natural and cultural terms that govern the designer with ideas and forms resulting from the discourse of space, check the following Figure 6 :

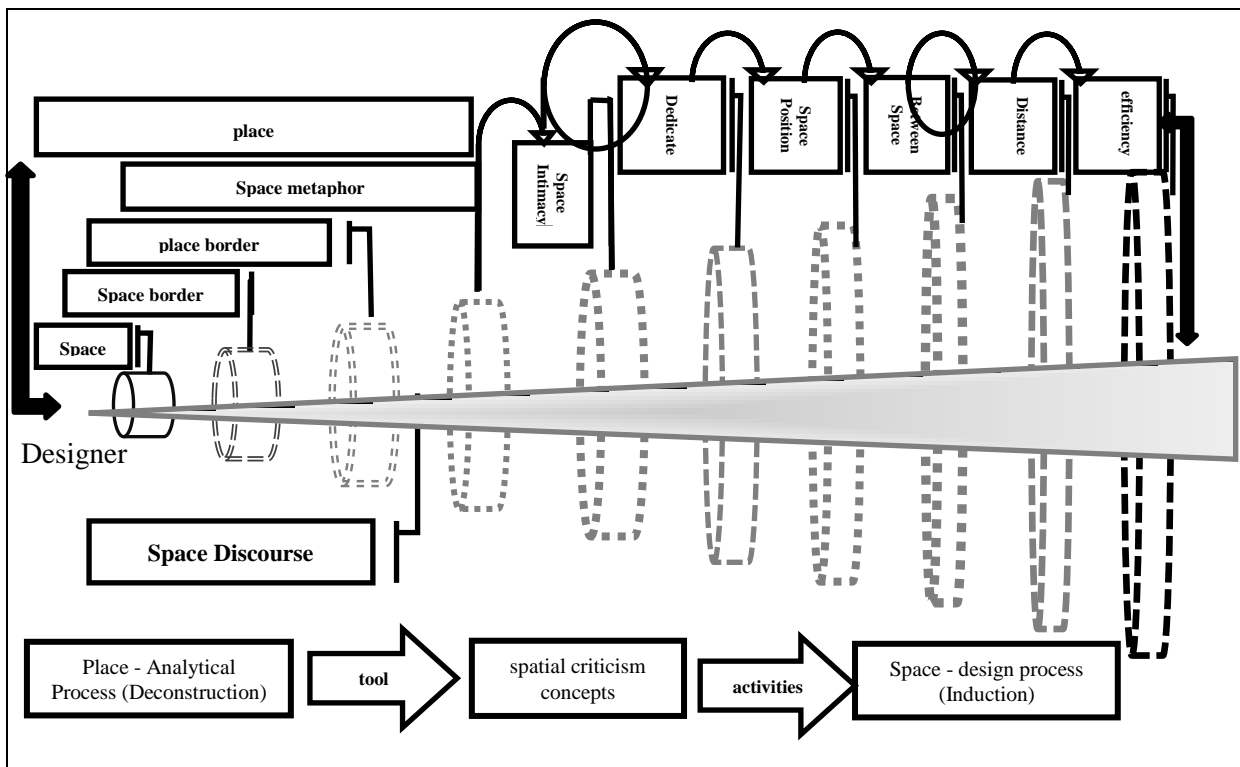


Figure 6. The intellectual model of contemporary spatial criticism vocabulary, (Source: researcher)

The vocabulary of the main and secondary theoretical framework and possible values can be organized as it was extracted from the knowledge framework and previous literature, as shown in Table 1.

Table 1. Explains the main and secondary vocabulary of the theoretical framework, (Source: researcher).

Spatial Situation	Space	Space Formulas	Isolated from the outside : (Solid building blocks, Gates).			
			Communicate with the inside : (Corridors, Inner courtyards).			
		Space Properties	Sensory Perception	proportionality	Materials, Colors, Shapes (organic, classic), Sizes.	
				Sequence	Public, Semi-public, Semi-private, Private.	
		Functional Side	Safety - Security	Entry and Exit control, Environmental Protection Treatments.		
				Attraction Point	Shape Elements, Specific activities.	
	Semantic Side	Aesthetic, Technological, Philosophical, Scientific and Artistic Approaches.				
	Space Type	Definite				
		Undefined (continuous)				
	Place	Place Properties	Sensory Perception	Realization of Shape Design by “Copy, Repeat process”.		
Realization of Volume Design by “Mass, Spaces, Axes”.						
Functional Side		Clear visual lines, Ease of access.				
Semantic Side		Social planning, urban planning.				
Place organization rules: Elements, structural relationships, place values.						
Critical Reading - Spatial	Space Discourse	Objectives	Scientific	Understanding the spatial environment (artificial, natural)		
			Cultural	Diversity of spaces: "Historical, Anthropological, Social".		
			Functional	Material uses: Improve material properties.		
		Construction Technology: Invisible spaces, Mobile structures.				
		Procedures	Huge Scale: Element, Details, Mass, Surface.			
			Twist Process: Multicentre, Intersections.			
	Sculpture: Monuments, Mass, Surfaces, Voids, Ground levels.					
	Spaces Management: (Inside - Outside, Top - Bottom).					
	Space Intimacy	Properties	Continuity: inside - outside, past – future.			
			Selectivity: Elements, parts, relationships.			
			Scientific: designer projects, other people's projects.			
			Participate : multi-use public space.			
		Procedures	Intertextuality	Integration: event, idea, style, symbol.		
				Negation : partial, complete.		
	Separation: material and symbolic.					
	Inclusion : Add an intellectual part, add a physical part.					
Space metaphor	Properties	Convergence – Spacing : Irregular distance.				
		Flexibility : Integration of engineering relations.				
		Continuity : Inside - outside, transparency of surfaces.				
	Reading Patterns	Dialectic : (apparent - content, place - time).				
Contextual: Traditional product, creative product.						
		Difference : different engineering systems, different shapes, different patterns.				

	Space Position	Properties	Detachment from a spatial context, spatial relationships, spatial forms. Intentionality : Refer to formation patterns, natural event, other.	
		Procedures	Dynamic Displacement : Shape displacement, Context displacement.	
			Intercalation : Intercalation of Shape, Intercalation of elements.	
			Westernization : Relationships, Contexts, Elements.	
			Contradiction : Color, surfaces, levels, other.	
	Fold : Shape folded, relationship folded, folded element.			
	In Between Space	Properties	Organizational paradox of space: Space Border, Occupant Behavior. Phenomenological Transformations of space.	
		Method	Probability Borders.	
			Probability Spaces.	
	Distance	levels	Place	Design principles : Repetition, Gradation, Other. Elements and Relationships : Replication, Similarity, Symmetry, Other.
Space			Physical Surface Structure of Space.	
		Symbolic Deep Structure of Space.		
Relationships		Sequence, Gradation, Symmetry, Rhythm, Repetition.		

4. Conclusion

This paragraph deals with the most prominent findings that have been reached through the theoretical and practical sides, which can be given as follows:

- Physical: the engineering design of the place should, start with the realization of the shape "mass" and its formations (the elements) down to the details "point, line, plane".
- Historical and Social Times: It means the psychological aspects of events, and its impact on the identity of the place, as events enrich the place with symbolic patterns that explain the events on the basis of the type of relations, which constitutes a spatial context through two paths: the vertical that reveals the events and the horizontal that reveals the details of the place.
- Rhythm and Gradient: It includes the levels of movement & stability, and the degree of their strength and nature "surface, scale, space", the distance showed how the meanings and organizing powers of ideas can be expressed and changed in a way that enhances spatial positioning.

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