Alienation in Contemporary Iraqi Architecture: The Questions of Space-Time Communication and Style

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Abstract

The phenomenon of alienation has clearly spread in Iraqi architecture. Contemporary Iraqi architecture is strange and has diverted from the Iraqi ecosystem in place or time, or both, through the intrusion or addition of bizarre elements. In the era of globalization and with the emergence and dominance of sweeping technological capabilities and whopping economic forces, alienation has become a significant phenomenon. The intrusions are strange in terms of logic or sense of formulation and design of architecture, which includes everything foreign to traditional constants. Thus, it may also cause a person to feel alienated or lose intimacy with urbanization.

This research examines this issue. It focuses on the lack of examination of the aspects, dimensions, and components of the phenomenon of alienation in contemporary Iraqi architecture. It focuses on the discontinuation of Iraqi architectural style, which has led to a loss of its identity and communication and thus has resulted in alienation. The primary objective of this study is to achieve a an objective method for evaluating the phenomenon of architectural alienation. The research hypothesized that the employment of architectural style in terms of types in Iraqi architecture produces authentic architecture that belongs to its local environment in time and space and does not suffer from alienation.

The research adopted a descriptive methodology for analysis based on an inductive approach. It does so in two parts: first, it constructs a theoretical framework in which the phenomenon of alienation in architecture is described. Second, it builds an applied model derived from the theoretical framework aimed at testing the hypothesis and the findings of the theoretical framework. The indicators derived from theory are applied to models of Iraqi architecture for the period between 1960-1980, during which Iraqi architecture was led by a school with roots in authentic architectural heritage. The indicators are tested on a group of projects implemented during that period and are applied to buildings for the period between 2003 and 2022.

The research concludes that neglecting the components of time value (heritage) contributes greatly to alienation in Iraqi architecture. Time value,

especially relating to events, heritage forms, presence of traditions, or everything that has a past time dimension must be highlighted in the design concepts articulated through the location and shapes of the buildings in order to communicate urban or cultural interactions with the community to achieve affiliation with place.

Keywords: Alienation, contemporary Iraqi architecture, architectural style, type, heritage.

Introduction

Humankind is connected to their urban environments, reflecting their civilization in all its intellectual and technical aspects in addition to its social, psychological and cultural characteristics. This attachment manifests as a sense belonging, and it represents a basic human need that provides a sense of safety, stability and protection.

Many architectural designs have originated from the environment and society to suit their characteristics and conditions. Therefore, they correspond to the conditions that surround them without causing deficiencies described as alienation. However, there is still a controversy among many thinkers and architects about the issues of modernization and rooting in contemporary architectural experiences, especially in the Arab countries. This includes Iraq. Tin fact, there is a definite manifestation of alienation in contemporary Arab urbanism. Debates continue to shed light in conferences on the impact of western culture on the civilizational, urban heritage, and Iraqi architecture as well as other arts subjected to successive western cultural invasions, which have clearly affected architecture.

Manifestation of the past in architecture is important because it includes the material framework that encompasses standards of social and cultural values. Architecture is one of the most prominent dimensions in which society's awareness and sense of heritage unfold, due to the size of its impact and connection to human life, as it represents a landmark that withstands distortion through time. It is a source of permanent induction and inspiration for architects and their creativity. They benefit from the accumulation of knowledge and experiences that summarizes the interactions between environmental and climatic factors and the intimacy of human experience.

This research aims to unravel the phenomenon of alienation in Iraqi architecture, which emerged after 2003. Its objective is to develop the most important indicators of alienation in architecture and apply them to examples of Iraqi architecture within the two periods. The first is from 1960-1980: the period of the pioneers of Iraqi architecture. The second is after the year 2003. The research proposes a road map that followed to avoid alienation in the buildings that will be designed in future.

Literature Review

The concept of alienation has been thoroughly studied. Many have focused on a specific aspect of the phenomenon. Among them, the writings of Sahan (2021), Idris (2017) Al-Bazzaz and Abona (2007) Kamouna (2000) and Gibbs (1971) stand out.

Sahan (2021) points out that alienation contains multiple forms, including, spatial, social and psychological alienation, all of which lead to the separation of the link between the individual as a social being and the place. He argues that these lead to the disintegration of the urban fabric and the formation of contradictory urban structures. In the chaos of the decaying urban spaces, social problems occur and the ensuing places fail to achieve social and psychological congruence. Thus, Sahan (2021) emphasizes the necessity of creating places where the people can achieve effective communications with others. As Sahan argues, such urban spaces provide human comfort and psychological, emotional and social stability (Sahan, 2021).

Sahan (2021) further elaborates on the concept of alienation, pointing out that essentially, it is a number of manifestations of discontinuities that occur in the urban environment. Nonetheless, at the heart of it lies the separation between the individual and the urban environment. According to him, there is physical alienation: discontinuity between an individual and the environment and social alienation between people themselves. However, he only focuses on the extent of the impact of these two types of alienation on the individual and the lack of civilized communication with the surroundings. There is no reference to the concept of alienation except implicitly, and there is no indication of the type of relationship between the different types of alienations.

Idris (2017) delves deeper into physical alienation. According to Idris (2017), the phenomenon of physical alienation in architecture and urbanism lies in one of the two approaches as follows. One of them is through westernization in using a strange vocabulary due to the architect's attempt to drift away from the urbanization crisis. The other is the result of urbanization imbalance when trying to follow models established to be compatible and appropriate in another place. As Idris (2017) says, imbalance is magnified and alienation occurs.

Idris (2017) also talks about a second kind of alienation that happens because of the tripartite system (Man- environment- urbanization). When urbanization takes place, it is not the result of human interaction with the environment with its natural, urban and societal components in the same place. Thus, in both types, alienation occurs (Idris, 2017). Interestingly, Idris (2017) says that alienation is a phenomenon that occurs because of multiple interruptions and the loss of harmony that has emerged between people and the social commitments and contemporary material commitments.

According to Idris (2017), the patterns of alienation are three-fold. There is environmental alienation, which arises when the individual is dislodged from the building or the fabric of the urban environment. Then there is the destruction of human roots and the loss of urban space for human and social values, and this in turn will create another type of alienation, which is social alienation due to the loss of communication between one individual and the others.

Al-Bazzaz and Abona (2007) suggest that the concept of alienation consists of three main forms: physical/spatial, social and psychological. The first can be defined as the rupture in the relationship between Man and his surrounding built environment caused by the urban tissue disintegration. The latter affects the physical built environment consistencies like the architectural symbols. Besides, it creates some contradictions where chaotic and anonymous urban spaces were the main reasons for the lack of social interaction and the spread of socially alienated people. The previous forms of alienation causes psychological disorder and conflict to men living within such a fragmented built environment (Al-Bazzaz and Abona, 2007).

Kamouna points out that the lack of connections between architecture and civilization leads to a loss of privacy and belonging to the place, and a sense of absence of the distinct spirit of place. This in turn has made local architecture exposed to many internal and external pressures, in forms of electing from western design principles that do not sympathize with the characteristics and identity of local architecture. This is reflected in the architecture of local environments that appear as an issue in the relationship between a local and an imported character. Architecture is alienated and its elements begin losing their attributes, in the midst of the conflict between the new clamorous and the eroding old, which has led to the phenomenon of alienation (Kamouna, 2000).

Karmouna (2000) proposes that the focus on Western architecture imported to Arab countries at the present time, as well as the neglect of the architectural heritage rich in local values and details, was the main cause of many problems in several respects, whether environmental, social, economic, or even human.

However, Gibbs deals with the concept of alienation through four main aspects:

1. Alienation of the thought of architectural movements and currents.
2. The architect's own alienation.
3. Alienation of the architectural product (form, meaning).
4. Alienation of the recipient.

Gibbs (1971) argues that alienation that the society suffers from appears in the architectural forms, and it is characterized by dissolution and disintegration. It is a direct result of dissolution and cultural fragmentation, focusing on two main periods of the history of architecture, which is the period of modernity and beyond: history and all traditional and cultural symbols (Gibbs 1971).

Gibbs (1971) further points out that alienation occurs because of rapid developments, changes, and mutations that occur in societies, in addition to the emergence of new values, which are the values of dissolution, cultural change, and discontinuity. These are adopted leading to sudden changes in the society. However, he deals with the concept from a purely theoretical point of view and ignores the rest of the aspects related to the main vocabulary of the concept in contemporary architecture.

What distinguishes these studies is that they were characterized mostly by the generality of the subtraction and the overlapping of concepts with each other as well as the focus clearly on the forms, aspects, and dimensions of the phenomenon of alienation in architecture. Most of them focused on the concept of alienation in the urban environment, and attempted to find the common ground through which it is possible to recreate linking the overlapping concepts and other aspects in a clear, causal logical sequence.

According to the research problem defined, there is a lack of knowledge in studying and measuring the aspects, dimensions, and components of the phenomenon of alienation in architecture in general and contemporary Iraqi architecture in particular. These have led to the loss of identity and its connection with the past and thus its alienation.

The Theoretical Framework

Alienation in Architecture

Architecture is a reflection of a society's culture and civilization, which reflects the distinction of a society's identity and features. It includes the symbolic features and significance that society has created for itself. In situations where these are neglected, it will lose a great deal of vitality and the possibility of civilized and cultural communication in society due to the temporal and spatial interruptions, creating alienation (Al-Bazzaz and Abona, 2007). There are two noteworthy concepts in Arabic and foreign dictionaries that indicate alienation. They are as follows:

First: the implicit concept - this refers to a philosophical dimension, which is the detachment from oneself and the transformation into the other. The self here is not confined to just the individual, but rather represents all the concepts and ideas that give someone a sense of belonging and stability in a place or society, such as shared standards, customs, traditions and cultural and civilizational heritage in its physical form (tangible) and non-physical (intangible).

Second: the direct concept - the main connotations refer to the disconnection from the society and the values it possesses, which is called social alienation. That is the opposite of communication, known as the process of interaction and participation between individuals and the emergence of continuous relationships between them.

Alienation includes three main forms: spatial alienation, social alienation, and self-alienation (psychological). Spatial alienation is the loss of connection between the individual and the place he resides. This kind of alienation arises in the architectural

environment that suffers from disintegration, dispersal, and scattering of its parts and lack of cohesion with the failure to meet the human requirements (Al-Jubouri, 2000).

Jenks suggests that the primary function of architecture is to formulate a place identity, and give it a form for a wide variety of ideas, expressions, approaches and technical means because it contains a set of ideas and meanings directly related to its historical context (Jencks, 1988). Similarly, Schulz points out that architecture is the action of creating a place with a goal, as a cultural form having a role in the formation of personal, social, and cultural identities. Therefore, he argues, relying on the circulating language, or in other words, re-creating literally familiar environments in exotic locations means preserving a part of identity, which is architecture (Schulz, 1965).

On the contrary, the pioneers of modernism, especially at the beginning, promoted the ideas related to rejecting and suppressing the past and history of traditional architectural heritage. They proceeded to separate time into a past that has then been excluded and a present that reflects rigid scientific facts considering previous styles as dead. They no longer believe in the continuity of the past, but in the necessity of forgetting and producing something completely new, in agreement with many theorists requesting to consider that each era has new representative values, with the necessity of excluding everything opposed to it. Modernism has always called out for repression and separation of history since its commencement (Al-Taleb, 1990).

Because architecture is a language of communication between successive generations within the climatic, social and cultural environment with certain norms and traditions, space-time communication in architecture impinges on alienation.

Space-time Communication in Architecture

The term space-time is a four-dimensional term constituted of space-time continuum, symbolized by four variables: length, width, depth, and time. These dimensions are necessary to define every natural phenomenon, because no phenomenon occurs in the place alone, but in the place and time together. Space-time communication defines the balance between modern requirements and the need to communicate with the past. It is the process of creating historical continuity between the old and the new. It is called the concept of civilizational communication. This is necessarily to achieve a distinct identity and privacy in architecture, in addition to the necessity of cultural communication with heritage (Salib, 1973).

It is the medium through which civilization is transmitted from generation to generation through time. The state of non-communication means the loss of direction and indications. Thus arises a loss of architectural identity and the occurrence of alienation in architecture. The architect who calls for the separation and detachment from the urban environment and the natural and cultural factors and influences will separate from society and all its orientations. The concept of temporal discontinuity is the relationship between the factors of time and the phenomenon of alienation in contemporary architecture. Many components and architectural formations are not associated with a specific time, while neglecting the components of time (heritage) which contributes greatly to the reinforcement of alienation (Al-Kenany, 2006).

The loss of space-time continuity in architecture with the occurrence of a vast difference and discontinuity will generate a negative change in the built environment. In addition, it leads to a continuous and monotonous communication resulting in a state of deliberative or modeling in a closed and negative manner. Therefore, it is preferable to connect various case studies that balance the parts and the whole to avoid distorting the built environment. Separation leads to a state of interruption and loss of communication between an individual and the society on the one hand, and the individual and the cultural urbanism wealth on the other hand. Consequently, the cultural alienation or value alienation occurs in the sense of losing the common standards and values that bind the

members of a society together. The sense of time is similar to a sense of place based on the power of remembrance (Al-Jabri, 1998).

These holistic propositions in the perspective of time assume the realization of situations and events as parts of the comprehensive communication process in all its dimensions, instead of perceiving them as separate points. This comes into being through the relationships of time because they achieve communication between events. According to Berdyaev (1986), the inclusive concept of time is specified into three cases that incorporate time (past, present and future). Past is the state that no longer exists. Future is yet to come. The present is the permanent disintegration of the past (in its present moment that is passing instantly); future (the immediate shortly moment) makes it ephemeral. Thus, time is a conjunction image of the present as being the reality that we hold now, so it is present of past things, present of present things, and the present of future things. (Berdyaev, 1986).

This way, people unite with the past and the future within the present moment. New concepts do not arise independently from the repercussions of the past. Instead, new ideas come into existence through a modern vision in the language of values (Abel, 1997). The following figure illustrates the comprehensive view of a relationship between the states of time: the past, the present and the future.

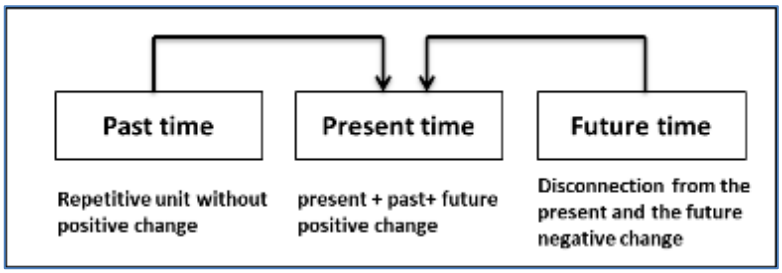

Fig. 1: A holistic view of a relationship between the cases of time
(The past, the present and the future)
Source: Abona, 2007)

It is noteworthy that the presence of the past in the present and the future have caught the attention of many artists, theorists and architects. The future refers to the past within the present framework and it represents a historical connection (continuum) that fixes its inhabitants in space and time, offering them an urban articulation that connects them with the past and the future. This connection is achieved through the historical continuity of the past in the present and an attempt to ensure its continuity in the future (Koutamanis, 2005). As for the level of communication in architecture, it is carried out through three levels (Abdul-Wahhab, 2002):

- Continuity style level
- Continuity in the spatial formation style level
- Continuity of the function style level

Continuity of the architectural style is important because it contains architectural characteristics. Its association with the external form represents the features of a certain stage that derives its characteristics from the connections and communication with the past. It affects the continuity of architecture and its non-interruption from the context of the past, to reach the indicators of research associated with style.

Architectural Style

Style is known as the design language that accompanies the transformation and shaping notions into elements of architecture that distinguish a building from other buildings (Hamid, 2011). Smithies defined architectural style as a set of architectural features that combine structure and expressive unity that clearly indicate a specific period of time or region, or attributed to a specific designer or an architectural school. Styles are categorized by shapes, techniques, materials, periods of time, or regions, (Smithies, 2012).

According to the Oxford dictionary, style is defined as a formula or type of expression that reflects a distinctive form of achievement, action, or a way of doing and it may represent certain characteristics belonging to a particular period, place, person or a movement. It is related to the shape and external appearance or behavior and is represented by a group of characteristics that combine together to be expressed in a distinctive and consistent way.

This interpretation is consistent with several propositions about the emergence of styles, which is a gradual process. It requires the presence of common cases, bearing in mind that the evolution of a new style cannot be judged by the presence of only one sample (Shinyar, 2004). The provenance of architectural style depends on the evolution of a series of buildings that retain common formal features and hold within solutions to intellectual, functional, religious and civilizational requirements. If the archetype, according to Argan (1985) is derived from a group of architectural models to extract common distinct roots and components of its internal formal structure, the archetype characteristics can be deduced by analyzing a group of repeated architectural models (Argan, 1985).

Within the same context, Vilder (1977) points out that the "type is an idea and style is an embodiment of this idea". As for the features, they are the features or characteristics that a model carries and distinguishes it from others. The style represents the sum of similar formal features of different models. Formal features represent a certain level of formal relationships that serve as attributes, which result in linking the parts to a certain relationship, making the form readable at first sight and granting it uniqueness (Vilder, 1977). The figure below clarifies the previous elucidation.

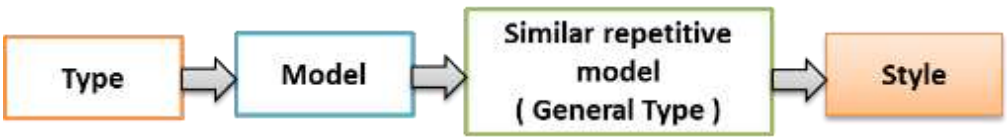

Fig. 2: The triangular system of style
Source: Author and Abdul-Wahhab, 2002

The purpose of diagnosing architectural style characteristics of a particular historical era has presented an analytical system for the characteristics of styles. The architectural output of a certain era can be analyzed (Abdul-Wahhab, 2002) as follows:

- Characteristics of the type: the study of cultural values and dimensions (historical background, intellectual structure, spiritual values, political and social values, etc.) and the reflected nature in the prevailing conceptual types.
- The elements of architectural formation and their role in transforming the conceptual types into embodied architectural models. These components are represented in the natural environment, the raw materials availability, production techniques and the construction systems.
- Studying the characteristics of the predominant architectural models in terms of relationships between forms: they are evident at both levels, the spatial organization of the plan and the formal articulation between masses.

- Processing the architectural formation: through studying visual architectural values, the detailed treatments, and the distinctive ornaments of the style.

The form consists of relationships linking elements together, regardless of its material. Thus, the essential element does not become the major focus, but rather the relationships that exist between a group of elements that remain in the same form even with the change of elements (Afandi, 2006).

Hence, the possibility of interpreting a style within the context of type theory is based on a single stereotypical system with common roots, which can be called the dominant type. Thus, the emergence and development of the style is achieved through the repetition of similar models with the same stereotyped basis, although there may be an infinite number of major and minor typologies Formal architectural styles can be grouped into three basic classifications (Curtis, 1996):

1. Types associated with the overall form of the building.
2. Types associated with the main structural elements.
3. Types associated with surface treatments (details).

Style has been elucidated by the concepts of types, models and common features or characteristics. Al-Omari (2000) defines type in architecture as "mental perceptions of the individual and society that represent a holistic response to religious, ideological and practical needs expressing society and shaped in a specific type of buildings and the method of assembly and space organization". They are general holistic perceptions that confer identity and privacy to community, including the formation that affect the materialized product of people, starting from the overall structure, then elements down to the details and decorative elements (Al-Omari, 2000).

If the style has its intellectual basis as a dominant type, then we can say that there is a style for a building's form and the articulation between the masses; a style for structural elements and construction systems (structure); and a style for surface treatments (details) and their connection to the material.

Based on the previous assumption of the trio-style organization, the research proposes the following scheme**:**

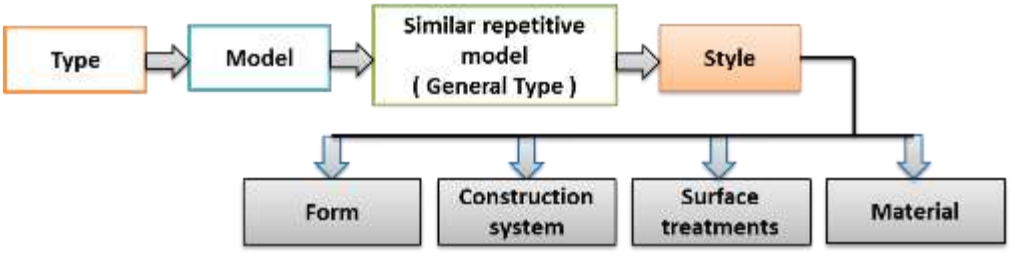

Fig. 3: The components of the style, which carry the semantic values of the type.
Source: Authors depending on Abdul-Wahhab (2002)

Style Characteristics of Iraqi Architecture through Time

Distinguished Iraqi architecture imposes on architect the adoption of various basic principles that differ from Western architecture. This is the prevailing reality of the environment, climate and the social and economic situation that Iraqi individuals live in. Traditions and the characteristics of ancient monuments manifesting our antecedent civilization along with the provisions of history form the basis of architectural Iraqi expression.

Style characteristics are defined as the set of distinctive features of shapes and configurations, to which most of our aesthetic estimations are due. These characteristics are classified at two levels (Chalabi,1998) as follows:

First: A group of organizational characteristics of forms at a holistic level affected by the nature of the formal characteristics of the part. These are proportionality, harmony, scale, and others.

Second: A group of characteristics at the level of the part focuses on the characteristics of the shapes (details) such as arches, columns, towers, color, texture, decoration, and inner courtyard etc. They include functional, aesthetic or structural values (Jajo, 1989).

Some characteristics that distinguish Iraqi architecture from other buildings are as follows (Al-Assadi, 2018):

Human scale features

- **A-** Consistency with the contents.
- **B-** Specificity of the structural materials.
- **C-** Emphasis on the principle of enclosed space (inner courtyard)

After reviewing the previous literature on alienation in Iraqi architecture, it was found that there is a lack of knowledge on the subject of alienation in Iraqi architecture. The subject of alienation has been studied at the urban level only, as in the study of Al-Bazzaz and Abuna, which referred to the loss of belonging to the urban environment. While, Al-Jubouri's study has dealt with the issue of visual pollution resulting from the architectural environment that suffers from disintegration, dispersion, loss of identity, and lack of coherence due to alienation.

There was no reference in the local studies to the indicators of alienation at the architectural level. Therefore, this study aims to fill the knowledge gap related to the subject, which the research found in the style, by finding the most prominent indicators of alienation in architecture, and then proposing to address them in future projects.

Research Methodology

The research aims to find out the reasons for the occurrence of alienation in contemporary Iraqi architecture and the loss of space-time communication. It examines the vocabulary of architectural style in Iraqi architecture to verify the hypothesis that alienation occurs in contemporary Iraqi architecture due to the disconnection of Iraqi architecture style through the ages, which leads it to not belong to its local environment.

The question is how was the application of identity indicators analyzed in Iraqi architecture through the ages? To answer that question, the research adopts a descriptive methodology based on an inductive approach, examining the effect of elements of style on the design of Iraqi architecture. As for the practical application of this study, the indicators derived in the theoretical part are applied to models of Iraqi architecture for the Babylonian, Assyrian and Islamic periods, and contemporary architecture. The models are tested for the period between 2003 and 2022. The following flowchart illustrates the indicators derived from the theoretical framework.

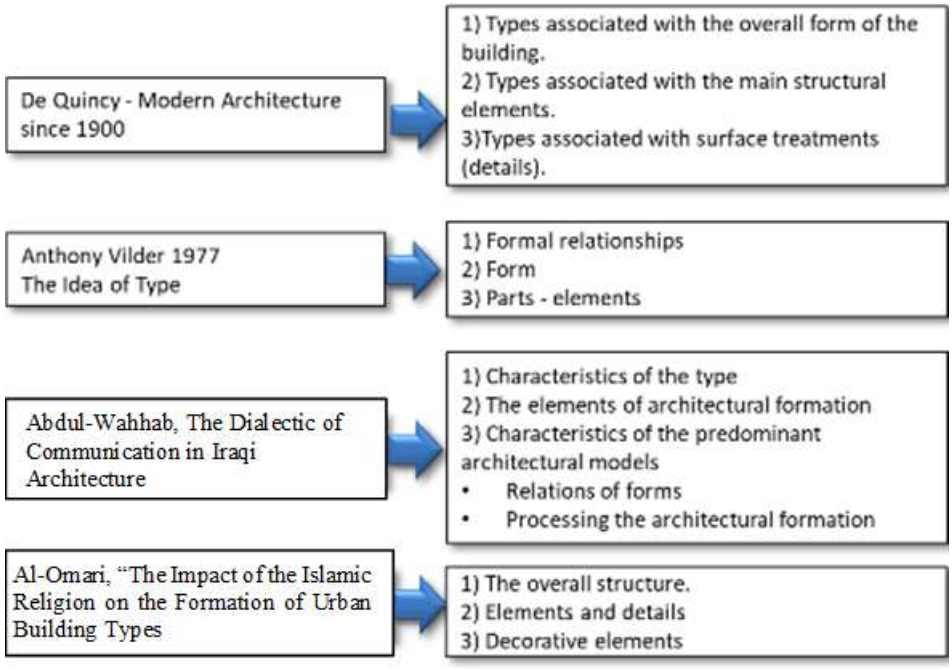

Fig.4: The methodology of the practical study.
Source: Authors.

Based on the indicators shown in the above graph Fig.1, the research reached the theoretical framework indicators. The research relied on the indicator X.1, X.2, X.3 for the main values. It also relied on X.1.2, X.1.2, X.1.3, for the sub-values and for the rest of the values. It also relied on the values X1.2.1 and X1.2.2 for the possible values applied to research samples as shown in Table 1.

Table 1: Theoretical framework indicators.
Source: Authors

Basic variables	Sub-variables	Possible values	Value symbol	Value verification in samples				
				A	B	C	D	E
Fit with the context X.1	Proportional form X.1.1	Realized by mass	X.1.1.1					
		Realized by elements	X.1.1.2					
		Unrealized	X.1.1.3					
Scale X.2	Scale type X.2.1	Human scale	X.2.1.1					
		Explicit scale	X.2.1.2					
Harmony with content X.3	Nature of harmony X.3.1	Harmony through heights	X.3.1.1					
		Harmony through details	X.3.1.2					
		Inconsistent	X.3.1.3					
Inner courtyard X.4	Courtyard form X.4.1	Geometric	X.4.1.1					
		Hybrid / Non-geometric	X.4.1.2					
		Do not exist	X.4.1.3					
Arches X.5	Arches function X.5.1	Aesthetic	X.5.1.1					
		Structure	X.5.1.2					

Arcades X.6	Arcades location X.6.1	Internal surrounding the courtyard	X.6.1.1					
		External defines the entrance	X.6.1.2					
		Do not exist	X.6.1.3					
Shanasheel X.7	Material of Shanasheel X.7.1	Local: brick/concrete/wood	X.7.1.1					
		Other	X.7.1.2					
		Do not exist	X.7.1.3					
Material X.8	Material type X.8.1	Local: brick/concrete	X.8.1.1					
		Alien: steel/ glass/ other	X.8.1.2					
Color X.9	Color nature X.9.1	Unified	X.9.1.1					
		Diverse	X.9.1.2					
	Color compatibility X.9.2	Warm	X.9.2.1					
		Cold	X.9.2.2					

Practical Application

Contemporary Iraqi Architecture

This research verifies the hypothesis, that 'the appearance of alienation in Iraqi architecture is a result of heritage severance through various formal insertions and the disappearance of physical formation that reflects the community's distinctive identity'. It employed the indicators derived from the theoretical framework. Then it tested them through a group of Iraqi architecture projects implemented in the period between 1960 to 1980. These were led by an Iraqi architecture school that derived its approaches through connections to the authentic architectural heritage.

Contemporary Iraqi architecture dates back to the beginning of the twentieth century with the end of the Ottoman rule and the beginning of the British occupation along with the coronation of King Faisal I as the King of Iraq in 1921 (the establishment of the Iraqi state). Iraqi architecture has gone through many phases and different political, economic and social events. With the presence of these variables and events, new architectural styles have emerged locally, accompanied by the emergence of clear architectural trends or styles that were categorized according to them. Therefore, Iraqi architecture is classified during the twentieth and the twenty-first century into phases according to their timeline, which are represented as follows (Hussein and Al-silk, 2019):

- First phase: Represents the period between 1917- 1940
- Second phase: Represents the period between 1946- 1958
- Third phase: Represents the period between 1960- 1980
- Forth phase: Represents the period between 1990 till now.

These phases relate to the visible transition of the production of Iraqi architecture with a change in the type of influences and in what is called the design institution. The third stage is considered as one of the most remarkable and prominent architectural stages, as it is the founding stage of an authentic Iraqi architectural school, where the inspiration comes clearly from the origins. These were the historical roots of Mesopotamian architecture depicted through plans, facades and many other details. They are distinguished from other architectural schools. Iraqi architecture in this period

synchronized with the postmodern architecture that emphasized the principles of returning to history and borrowing from its vocabulary (Al-Assadi, 2022). The indicators are applied to the buildings in the period between 2003/2022. This is the period that followed the American occupation of Iraq, during which the government laws, legislation, and building laws were absent These have led to the emergence of strange buildings in Iraq in terms of designs and materials.

Measurement Method

The research relied on a comparative analysis, because of the multiplicity of values associated with the styles and what relates to them, like the form, elements and materials. For this purpose, the indicators were divided into basis variables, sub-variables, and possible values. Each of these variables was encoded with a specified symbol to facilitate the application process by giving a value of (1) for the existent variable and value (0) for the non-existent variable. It then adopted a numerical scale by calculating the percentage of each indicator. The research has set the following rules in order to consider the building as alien or belonging to the local environment. The total of the existing variables are calculated so that the research will generate the final percentages for each achieved variable as shown in Tables 5 and 3. The researcher carried out this task.

The rules are:

1. The indicators that attain a percentage under 50% suffer from alienation
2. Indicators that reach a percentage of 50%-100%, do not suffer from alienation, but rather belong to the local environment

Practical Application

The application was carried out in two stages:

The First stage: A group of buildings designed by the Iraqi architects between the years 1960-1980 was selected for testing the indicators derived from the theoretical framework.

The second stage: A group of buildings designed after 2003 were selected in order to find out whether the buildings after this period suffer from alienation or if there is a temporal and spatial continuity in them. The buildings selected for the first part of the practical study are the Real Estate Bank A, Baghdad Water Liability B, Mayoralty of Baghdad C, College of Education/ Ibn Rushd D, and Al-Sinak Exchange Building E. All of these buildings are designed by Iraqi architects.

Table 2: of the selected research samples for the first part of the practical study.
Source: Authors

A	B	C	D	E
Real Estate Bank. Designer: Fadel Ajina. Established in 1975, Located in Baghdad, Karada Maryam	Baghdad Water Liability. Designer: Mahmoud Al-Ali. Established in 1978. Located in Baghdad, Al-Khilani Square	Mayoralty of Baghdad Designer: Nasser Al-Assadi. Established in 1978. Located in Baghdad, Al-Khilani Square	College of Education/ Ibn Rushd. Designer: Muhammad Makiya. Established in 1964. Located in Baghdad, Bab Al-Moadham	Al-Sinak Exchange Building. Designer: Rifa'a Chadirji, Established in 1971. Located in Baghdad, Al-Sinak

Table 3: Indicators applied to the selected research samples, Stage 1
Source: Authors

Basic variables	Sub-variables	Possible values	Value symb	Value verification in samples				
				A	B	C	D	E
Fit with context 1.X	Proportional form 1.2.X	Realized by mass	1.1.1.X	1	1	1	1	1
		Realized by elements	2.1.2.X	1	1	1	1	1
		Unrealized	3.1.2.X					
Application basics 1.X	All buildings featured a proportional achievement through masses and elements together.							
Scale 2.X	Scale type 1.2.X	Human scale	1.1.2.X	1	1	1	1	1
		Explicit scale	2.1.2.X					
Application basics 2.X	Despite the multiple stories of the E sample, it was distinguished by a human scale through the use of bricks and arches							
Harmony with content 3.X	Nature of harmony 1.3X	Harmony through heigh	1.1.3.X	1	1	1	1	
		Harmony through detail	3.1.3.X	1	1	1	1	1
		Inconsistent	3.1.3.X					
Application basics 3.X	The progression of the low mass in the E sample over the high mass, grants it the possibility of visual consistency with the street.							
Inner courtyard 4.X	Courtyard form 1.4.X	Geometric	1.1.4.X		1	1	1	
		Hybrid / Non- geometri	2.1.4.X					
		Do not exist	3.1.4.X	1				1
Application basics 4X	Designers of B and C samples used the inner courtyard despite the building being 10 stories high							
Arches 5.X	Arches function 1.5.X	Aesthetic	1.1.5.X	1	1	1	1	1
		Structure	2.1.5.X	1	1	1	1	0
Application basics 5.X	Arches in most models were characterized by structural and aesthetic functions at the same time							
Arcades 6.X	Arcades location 1.6.X	Internal surrounding the courtyard	1.1.6.X			1		
		External defines the entrance	2.1.6.X	1	1	1	1	

		Does not exist	3.1.6.X					0
Application basics 6.X	Although building E is devoid of the arcade, the tower's regression from the first floors of the building made it consistent with the Al-Rasheed Street arcade.							
Shanasheel 7.X	Material of shanasheel 1.7.X	Local: brick/concrete/wo	1.1.7.X	1	1	1	1	
		Other	2.1.7.X					
		Do not exist	3.1.7.X					
Application basics 7.X	The shanasheel were used explicitly in building B, but in A, C, D samples the shanshol was stripped using bricks and concrete							
Material 8.X	Material type 1.8.X	Local: brick/concrete	1.1.8.X	1	1	1	1	1
		Alien: steel/ glass/ othe	1.2.8.X					
Application basics 8.X	Brick granted all samples the human scale and belonging to the place.							
Color 9.X	Color nature 1.9.X	Unified	1.1.9.X	1	1	1	1	1
		Diverse	2.1.9.X					
	Color compatibility 2.9X	Warm	1.2.9.X	1	1	1	1	1
		Cold	2.2.9.X					
Application basics 9X	Despite the use of turquoise color in building B, borrowed from the ancient Iraqi civilization, the pale yellow brick color was dominant throughout the building.							

Discussion and Analysis of the Results

The significant results indicated in the first practical application table of the selected samples from 1960 to 1980 were reached by adopting the following equation:

$(X = V\ x100)/N$ where,
X= The percentage of indicator achievement
V= Achieved Values
N= Number of tested projects are as follows.

1. **Results related to fit with the context variable X.1:** It has a sub-variable X.1.1. that scored 100%, which was divided into three Possible values. X.1.1.1 achieved a percentage of 100%, X.1.1.2 achieved a percentage of 100% and X.1.1.3 did not achieve any percentage because all five projects achieved proportionality within the first two indicators. Accordingly, by adding the percentages for both indicators and dividing them by two, the proportionality index for the five projects achieved 100%.
2. **Results related to scale variable X.2**: It has a sub-variable X.2.1, which in return was divided into Possible values. X.2.1.1 achieved 100%. As for the X.2.1.2 indicator, it did not achieve any value because all projects have human scales.
3. **Results related to harmony with content variable X.3**: This category has a sub-variable X.3.1 that was divided into three Possible values, which are X.3.1.1 that achieved 80%, while the indicator X.3.1.2 achieved 100%, and the indicator X.3.1.3 did not achieve any percentage because all projects are consistent with the content within the first two indicators. Therefore, the final percentage of achievement of this variable is 80%.
4. **Results related to the inner courtyard variable X.4:** It has a sub-variable X.4.1, which in turn was divided into three Possible values. X.4.1.1 achieved 60%, X.4.1.2 did not achieve any percentage, and X.4.1.3 achieved 40%.
5. **Results related to the arches variable X.5:** It has a sub-variable X.5.1, which was divided into two Possible values. X.5.1.1 achieved 100%, while the X.5.1.2 achieved 80%.

6. **Results related to the arcades X.6:** It has a sub-variable X.6.1, which in turn was divided into three Possible values: X.6.1.1 that achieved 20%, while X.6.1.2 achieved 80%, and X.6.1.3 did not achieve any percentage.
7. **Results related to shanasheel variable X.7:** It has a sub-variable X.7.1, which was divided into three Possible values: X.7.1.1 which achieved 80%, while the two indicators X.7.1.1 and X.7.2.1 did not achieve any percentage.
8. **Results related to the material variable X.8:** It has a sub-variable X.8.1, which in turn was divided into two Possible values: X.8.1.1 which achieved 100%, while indicator X.8.2.1 did not achieve any significant percentage.
9. **Results related to the color variable X.9:** It was divided into two X.9.1 and X.9.2. The X.9.1 sub-variable was divided into two Possible values: X.9.1.1 that reached 100%, but X.9.1.2 did not achieve any percentage. As for the other sub-variable X.9.2, which was divided into two Possible values as well, X.9.2.1 which achieved a percentage of 100%, while X.9.2.2 did not achieve any significant percentage.
10. Accordingly, and by looking at the results obtained from the Table 3 of the practical application of the elected buildings, the research finds the following.

All indicators ranged between 60-100% related to the Possible values, except for the inner courtyard variable, which attained 40% in the three projects. This did not exist in the other two projects. Therefore, the percentages extracted from the table illustrate clearly that all the buildings constructed during this period do not suffer from alienation, but rather belong to their environment, in time and space.

The Second Practical Part

In this part, five projects were selected, designed in Baghdad after 2003, which is the period that followed the Gulf war (It is the fourth phase of Iraqi architecture), and were designed by different architects. In this second practical part, the same theoretical framework table was used as in the first application part. It was intended to make a comparison between the results of the two tables and identify the buildings alienated or related to authentic Iraqi architecture. The selected buildings are Baghdad Governorate F, the New Central Bank G, Baghdad Mall H, the Supreme Judicial Council I, and the Ministry of Construction and Housing J. The details of these are shown in the Table 4.

Table 4: The selected samples for the second part of the practical study.
Source: Authors

F	G	H	I	J
Baghdad Governorate Designer: Fadel Ajina. Established in 2005, Located in Baghdad, Al-Alawi	New Central Bank Designer: Zaha Hadid. Under construction. Located in Baghdad, Al-Jadriya/ Abu Nawas street	Baghdad Mall Designer: Turkish company Maviperimi marlik Establishd in 2018. Located in Baghdad, l-Harithiya	Supreme Judicial Council Located in Baghd ad	Ministry of Construction and Housing Designed by the Engineering Department of the Ministry of Construction and Housing. Located in Baghdad, Al-Alawi

Table 5: Application of indicators to the selected research samples for the second part
Source: Authors

Basic variables	Sub-variables	Possible values	Value symbol	Value verification in samples				
				F	G	H	I	J
Fit with context X.1	Proportional form X.1.1	Realized by mass	X.1.1.1				1	
		Realized by element	X.1.1.2	1				
		Unrealized	X.1.1.3		1	1		1
Application basics 1X	Building G featured a proportional achievement with itself as a discrete mass, but it is not proportional with the surroundings.							
Scale X.2	Scale type X.2.1	Human scale	X.2.1.1	1			1	
		Explicit scale	X.2.1.2		1	1		1
Application basics 2X	Models J, H, G have a monumental character due to their elevated height.							
Harmony with content X.3	Nature of harmony X.3.1	Harmony through heig	X.3.1.1				1	
		Harmony through deta	X.3.1.2	1				
		Inconsistent	X.3.1.3		1	1		1
Application basics 3X	The height of the mass in Model I and its harmony with the surrounding buildings' altitude within the urban fabric, while building F achieved harmony through details of cladding facades with local brick and arches.							
Inner courtyard X.4	Courtyard form X.4.1	Geometric	X.4.1.1					
		Hybrid / Non- geomet	X.4.1.2					
		Do not exist	X.4.1.3	1	1	1	1	1
Application basics 4X	Inner courtyard was not present in all samples.							
Arches X.5	Arches function X.5.1	Aesthetic	X.5.1.1	1				
		Structure	X.5.1.2	1				
Application basics 5X	Abbasi arches in all facades were present in building F.							
Arcades X.6	Arcades location X.6.1	Internal surrounding the courtyard	X.6.1.1					

		External defines the entrance	X.6.1.2	1				
		Does not exist	X.6.1.3		1	1	1	1
Application basics 6X	Building F has an arcade that determined the exterior entrances.							
Shanasheel X.7	Material of shanashee X.7.1	Local: brick/concrete/w	X.7.1.1	1				
		Other	X.7.1.2					1
		Do not exist	X.7.1.3		1	1	1	
Application basics 7X	The shanasheel was clearly used in building F, but in Model I, the shanshol was stripped using glass so it did not give the impression of an element.							
Material X.8	Material type X.8.1	Local: brick/concrete	X.8.1.1	1				
		Alien: steel/ glass/ oth	X.8.1.2		1	1	1	1
Application basics 8X	Brick gave building F the human scale and a sense of belonging to the place, while the use of alien materials in models J, I, H, and G was far from belonging to the nature of the place and the urban context of the city of Baghdad.							
Color X.9	Color nature X.9.1	Unified	X.9.1.1		1	1	1	1
		Diverse	X.9.1.2	1				
	Color compatibility X.9.2	Warm	X.9.2.1	1				
		Cold	X.9.2.2		1	1	1	1
Application basics 9X	Despite the use of brick in Model F, the multi-colored facades excluded the building from belonging to the spatial context.							

Analysis of the Results

The significant results indicated in the second practical application table of the selected samples for the period after 2003 are presented below.

- **Results related to fit with the context variable X.1:** It has a sub-variable X.1.1, which was divided into three Possible values. X.1.1.1 achieved a percentage of 20%, X.1.1.2 achieved a percentage of 20% and X.1.1.3 achieved a percentage of 60%. Thus, the last indicator of not achieving proportionality got the highest percentage.
- **Results related to the scale variable X.2**: It has a sub-variable X.2.1, which in turn was divided into Possible values. X.2.1.1 achieved 40%, while X.2.1.2 achieved a percentage of 60%. Thus, the explicit scale has the highest percentage.
- **Results related to harmony with the content variable X.3**: This category has a sub-variable X.3.1 that was divided into three Possible values, which are X.3.1.1 that achieved 20%, while the indicator X.3.1.2 achieved 20%, and the indicator X.3.1.3 achieved 60%, because all projects are inconsistent with the context. Therefore, the highest percentage is the inconsistency.
- **Results related to the inner courtyard variable X.4:** It has a sub-variable X.4.1, which in return was divided into three Possible values. X.4.1.1 and X.4.1.2 did not achieve any percentage but X.4.1.3 reached 100%.
- **Results related to the arches variable X.5:** It has a sub-variable X.5.1, which was divided into two Possible values: X.5.1.1 achieved 20%, while X.5.1.2 achieved 20% within the same building.
- **Results related to the arcades X.6:** It has a sub-variable X.6.1, which in turn was divided into three Possible values: X.6.1.1 that did not achieve any percentage, while X.6.1.2 achieved 20%, and X.6.1.3 achieved 80%.

- **Results related to the shanasheel variable X.7:** It has a sub-variable X.7.1, which was divided into three Possible values: X.7.1.1 which achieved 20%, X.7.1.2 achieved 20%, and X.7.1.3 achieved 60%.
- **Results related to the material variable X.8:** It has a sub-variable X.8.1, which in turn was divided into two Possible values: X.8.1.1 achieved 20%, while the indicator X.8.1.2 achieved 80%.
- **Results related to the color variable X.9:** It was divided into two: X.9.1 and X.9.2. The X.9.1 sub-variable was divided into two Possible values: X.9.1.1 achieved 80% and X.9.1.2 achieved 20%. As for the other sub-variable X.9.2, which was divided into two Possible values as well, X.9.2.1 achieved 20% and X.9.2.2 achieved 80%.
- Therefore, by examining the results obtained from the table of the practical application of the selected buildings, the research finds the following. All indicators related to the possible variables, which were divided into more than one value, ranged between 20-40%, while the percentage of non-existent/ unrealized indicators reached between 60-100%. Thus based on the proportions extracted from the table, it is clear that all buildings suffer from alienation and are considered unrelated to their environment in time and space.

Conclusions

- The results obtained from the first table for the practical part varied with the second table, as the results of the first table showed that most of the obtained results ranged between 60% - 100%, achieving the Possible values. Most of the buildings for the period between 1960-1980 obtained high rates of belonging to the Iraqi architectural context. Within the terms of proportionality with context and consistency with content and scale, all the elected models achieved a percentage of 100%, in addition to the terms of local material and color, which achieved a percentage of 100% as well.
- The percentages of the rest of the indicators for the first table varied between 60% - 80%, which are high indicating that the buildings belong to their local environment.
- The lowest percentage achieved within the indicators is the inner courtyard. It was found to be 60% (which is a relatively high percentage) and did not exist in 40% of them. This is due to the progress of technology and the decline in dependence on the inner courtyard as an air regulator between the indoor and outdoor environment as it was previously used in local historic buildings.
- The use of the inner courtyard element in the three models is a metaphor in order for the building to achieve belonging to Iraqi architecture as well as to provide natural lighting for the overlooking spaces.
- The development of building techniques and technologies significantly affected social concepts, environmental treatments, and the shape of buildings. The employment of modern materials such as heat-reflecting glass and shaded glass contributed to reducing the use of shanasheel, which was an effective environmental and social solution. Thus, the decline of this element is notable as in the Ministry of Construction and Housing where the shanshol was made of glass and there are other reasons that limited the use of the traditional elements such as shanasheel and internal courtyards due mainly to the reliance on air conditioning systems.
- The use of advanced building elements and techniques has greatly contributed to shaping the building. Thus, most of the buildings after 2003 have a monumental appearance, losing the concept of human scale, and relying mainly on blue-shaded glass, which changed the character of Mesopotamian architecture. It has greatly affected Iraqi architecture through the use of warm color (the color of bricks) and converting most buildings into cold colors derived from the color of glass, such as the Baghdad Mall, the Federal Court and the Ministry of Housing, or the use of white carbon panels as in the Central Bank.

- Neglecting components with time value (heritage) greatly strengthened the phenomenon of alienation in Iraqi architecture. It is thus concluded that time value, especially relating to events, heritage forms, presence of traditions, or everything that has a past time dimension must be highlighted in the design concept in the location and shape of the buildings or the elements. This is because of their impact on achieving communication and urban or cultural interaction of the community, thus achieving the affiliation to place.
- All the selected buildings belong to their designed environment in varying proportions and do not suffer from alienation. As for the second table, the percentages did not reach 60% to 100%. Regarding fit with the context variable, the unrealized indicator reached 60%, as well as the explicit scale, which indicates the incompatibility of most models with the context. As for the elements, their rates ranged between 80% - 100%, and this indicates that these models do not belong to their architectural context and therefore suffer from alienation. Based on that, the following table ascertains which buildings are affiliated and which are expatriate, according to the obtained indicators and percentages.
- The total indicators reached by the research are 25. The sum of the values that belong to the Iraqi architecture and taken from it equals to 15 indicators, which appear in the table in gray color. The sum of the values representing the strange indicators that appeared after 2003 and which do not belong to Iraqi architecture are 10, which appear in the table in red and are shown in the Table 6. This shows that the buildings belong to the Iraqi architectural environment or are alien to the Iraqi architectural environment.

Table 6: The final comparison for all the selected research samples.
Source: Authors

Models	Possible values																								Final values	Value analysis	
	X.9.2	X.9.2	X.9.1	X.9.1	X.8.1	X.8.1	X.7.1	X.7.1	X.7.1	X.6.1	X.6.1	X.6.1	X.5.1	X.5.1	X.4.1	X.4.1	X.4.1	X.3.1	X.3.1	X.3.1	X.2.1	X.2.1	X.1.1	X.2.1	X.1.1		Belong	Alien
A																										79.9	*	
B																										86.5	*	
C																										92.4	*	
D																										86.5	*	
E																										53.2	*	
F																										59.9	*	
G																										6.6		*
H																										6.6		*
I																										26.6		*
J																										13.3		*

Verification of the Hypothesis

Based on what the research reached in the practical application of it, we note that the buildings designed according to the Iraqi architectural style, which achieved the highest percentages, belong to the Iraqi architectural environment. They have been designed in the period between 1960-1980, in addition to one building, which is Building F, which has been designed a year later: 2003. The research hypothesized that the employment of architectural style in terms of types in Iraqi architecture produces authentic architecture that belongs to its local environment in time and space and does not suffer from alienation.

This has been verified as being true.

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