

# Integration of Latent Ideas & Apparent forms to Create Sustainable Architecture: A Theoretical Exploration

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## Abstract

Sustainability is a concept that addresses the growing environmental problems on the planet. From an architectural point of view, it is affected by the thoughts of architecture that comes from the community which faces environmental problems. A community can have a different understanding of it, leading to architectural formations that will affect the culture of the society and sense of its identity. In architecture, the images represent the meanings and the materials that produce them. A building expresses identity and the ideas change the potentials of architecture. With the emergence of global architectural trends, societies are subject to the concepts of 'one architecture' and 'one culture' by means of ideas and technologies. Such a new universal identity makes alternative memories and unique places to lose their identity. By losing their essence, the products could become far from being sustainable. Architecture / the sensory circle, and the potential of architecture / psychological circle lead to sustainable architecture. It is subject to sensory and cognitive perceptions, and the use of the senses for extrapolation to extract and generate concepts and transfer them to achieve the goals of architecture. This integration is dependent of the mind being an examiner and a mastermind. This research reveals the nature of the relationship between the latent and the apparent aspects in sustainable architecture.

The research employs the descriptive-analytical study and a case study method as a means of testing. Data for the case study were collected from published studies on the project or from the self-description of the project designer himself. One of the most important conclusions is that environmentally sustainable architecture is the result of the union of two forces, the power of thought and the power of matter, and the creative interaction between them.

**Keywords:** Apparent and latent aspects, Appearance of architecture, Latent architecture, Sustainable architecture

## 1.0 Introduction

There is a Quranic verse which says “He is the First and the Last, and the Manifest and the Hidden, and He knows everything”<sup>1</sup>. There is something for Man from these two aspects, i.e., the outer and the inner, where he says: If you want to know yourself, know that He who created you has created you from two things. That is the inner meaning (Amedwari, 2020).

Where architectural productions combine ideas and perceptions, architecture becomes meaningful in thoughts and forms in an image so that the thought is carried. Essence is embodied in the form of the external reality / the apparent material structure that gives the idea of the changes and concepts derived from those changes. The materials of the forms represent these concepts. The meanings inherent in the mental images are associated with the system of causes. To make architecture express the thoughts or ideas through the integration between the perceptual/apparent and perceptual/latent aspects, one has to search for the belief that represents the supreme authority controlling them, with which architecture supports the meaning embodied in it.

Thus, architecture as a production occurs when an idea being in mind becomes the matter that appears in reality. The human being involved, brings out the latent idea or an apparent issue and transform them to concepts in the systems that drive changes and their causes. The knowledge and the intellectual roots that move the actors, along with understanding of the phenomena in architecture relate to the nature of the thought behind them. This makes Man move in his potential to go from his belief to creativity, knowledge, work, and the production of architecture.

In this context, this paper examines the issue of sustainable architecture due to the interaction between it and the environment in which it is found, on the one hand, and between it and the culture of the society that produced it as the achievement of sustainability comes through the stability of the sustainable essence on the one hand and the existence of change according to the requirements of the times on the other hand. The constants imposed by the Islamic faith are integrated with the spirit of the times to achieve the environmental, social, and cultural requirements. It focuses on not importing ready-made ideas without considering the privacy and conditions of the surroundings.

Its aim is to support sustainable architecture's concepts and achieve its dimensions through a well-established architectural thought that stems from an Islamic intellectual base fixed in its content and variable in its form.

Its objectives are:

1. To reveal the nature of the relationship between the latent and the apparent in sustainable architecture.
2. To integrate the latent and apparent systems to achieve a sustainable architecture compatible with its local environment.

## 2.0 Review of Literature

Ahmed and Fakush (2012) argue that the applications of the sustainable environment is one of the components of the high-tech architecture that saves energy, increases the life of the building, and makes it suitable for future generations with its advanced technological means. Therefore, Ahmed and Fakush show the most important methods and treatments used and clarify the most important techniques and systems used in them, which contribute to the ability of buildings to save energy and benefit from the environmental data around them to benefit from them, making buildings self-sufficient in power and even productive for it sometimes.

Hilal et al (2014) are concerned with revealing the role of sustainable architectural design in reducing the impacts on the built environment through integrating green design techniques and innovative technologies in the building. Modern Technologies, encouraging sustainable architecture and rationalizing building methods and energy consumption is one of the pillars on which the success of sustainable development in any society depends. The great challenge facing architects and planners now is choosing and modifying advanced technology

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<sup>1</sup> Surat Al-Hadid, Verse: (3)

in a way that does not negatively affect the environment. Thus, Hilal et al. show that performance and comfort requirements are developed in an environmentally compatible building using specialized technology appropriate to the functional need.

Khaito (2018) emphasizes the importance of local architects finding a local formula for applying the concept of adaptive architecture in a manner consistent with the specificity of the local worker, the current laws in force, and the criteria for classifying efficiency under a general system that the researcher called the Adaptability System, this system had to be equipped with methods that raise The efficiency of buildings through comprehensive rehabilitation processes expressed in an iconic system that can be developed and added over time.

The adaptation system has been derived from local laws and international examples and experiences, in addition to the criteria for environmentally evaluating buildings. Where the application of the system confirmed that the external architectural envelope with its characteristics is an essential element for the ability of the building to adapt to its surrounding environment, it provides the ability to self-adapt through purposeful design to reduce the use of energy in heating, cooling, and lighting and improve the internal quality, thus achieving the primary goal of raising environmental efficiency.

Mohamed (2019) is also interested in reaching the appropriate strategy toward ecological balance. The design of any building is inspired by the response to climate - technology - culture, and the surrounding environment, with the possibility of compatibility between constants and variables to reach environmental balance within contemporary architecture. In this case, building systems, construction methods, and materials must be adapted to the environmental context in which they are located and where the need to adjust to the climate and the environment, as well as adaptation in social aspects and compatibility with the construction technology of the current millennium.

It considers appropriate environmental technology and natural sciences as essential tools and sources of innovation and re-evaluates design and construction methods that reflect an interest in green architecture. And its impact on the final shape of the architectural mass and spaces, as it not only reflects the changing social requirements and specifications for the appropriate materials and elements but also helps us achieve contemporary environmental architecture according to building systems, construction methods, materials, and appropriate technology.

Balush (2019) defines sustainable architecture as a design process in which the designer minimizes the negative impact of the materials included in the design so that it does not affect or disturb the environmental system and can respond, adapt and improve the environment. He shows that one of the essential advantages of sustainable architecture is the sensitive and rapid response in keeping with the scientific progress in technology, informatics, and communications, and achieving intelligence by introducing control and control systems and linking them with other information systems. He also confirmed that the development of green or sustainable environmental design would not be feasible if it is isolated from the culture and lifestyle of society—design with the fundamental values that prevail in many cultures worldwide.

In the same context, Al-Awamrah (2022) points out a struggle between borrowed Western beliefs and traditional values, and local cultures. Significant architectural changes are based on modernization, bringing and importing western architectural ideas and scientific progress. These result in a scenario where the social theory about a society's culture must be reconsidered. Al-Awamreh also refers to creativity directed by technological inventions, where possible forms due to the advanced innovations of materials and building techniques, and relying mainly on the sensory side and not on images, as the twenty-first century adopted new changes through the introduction of intelligent technologies for materials and more sustainable features. He emphasizes that it is essential to understand that architectural images provide only visual consumption and cannot be used to formulate long-term solutions.

In contrast, Zhong et al. (2022) focus on Nature-based solutions through an interest in nature and biophilic design to achieve architecture's response to environmental challenges and to answer the question (How can biophilic design contribute to sustainable architecture?)

According to Zhang et al. biophilic design is more complex and affluent than just applying vegetation in buildings. It expands diversity by including different types of nature, from physical, sensual, symbolic, morphological, and material to spiritual. Thus, Nature has been incorporated into architecture to pursue sustainability by investigating issues such as form, tectonics, and technology.

Kanaani (2023) is concerned with how to re-correct what has been deviated from manufacturing and consumption and to achieve balance in our use of nature, not to exhaust it, but to develop it in the future, and describes the environmental design as forming the basis of all ethical value systems for how we interact with the environment. He concludes with an approach to design grounded in well-being and ethical impact on industry and society and that technology can and should complement the genius of the human mind rather than merely a substitute for design thinking. Kanaani also investigates the use of low-tech, high-tech, environmental design concepts and the constantly evolving technological approach. These all illustrate opportunities to expand the scope of design thinking and introduce new ecological ideas and practices in design thinking. Livable and fully integrated with their contexts.

Wasilah (2023) agrees with Kanaani and points out creating balance and harmony between the built environments and their natural contexts. Through the response of built environments to the natural environment, its respect for its environment, and its reliance on sustainable energy. Wasilah discusses the development of sustainable architecture by learning from local wisdom and benefiting from traditional architecture. They are designed for a variety of environmental conditions. However, all classic architectural styles have the same approach: responding to and respecting nature. In its form and perception, the traditional structures of Indonesia are adapted to its specific social locations and systems. Thus, sustainable architecture can be understood as a feature of local wisdom. In fact, Wasilah seeks to explore the concepts of shape and form by focusing on the traditional form of Indonesian architecture, thus providing a theoretical distinction based on architectural elements. It turns out that shape and form stimulate human imagination, emotions, and experiences.

Genkin and McArthur (2023) on the other hand, write about transforming existing human dwellings into intelligent buildings and creating new smart ones. It aims to mitigate climate change by reducing energy consumption and associated carbon emissions. They leverage artificial intelligence, big data, and machine learning algorithms to learn and improve system performance to achieve this.

They introduce B-SMART which is the first reference architecture for autonomous intelligent buildings. It facilitates the application of AI technologies to smart buildings by separating the layers of conceptually distinct functions and organizing them into a self-sustaining loop. Genkin and McArthur (2023) further demonstrate the possibility of using the Building Systems Management Reference Model (B-SMART) to accelerate the design of information systems, reduce the energy impact of the building, and facilitate the application of artificial intelligence (AI) in intelligent buildings.

From the discussion and analysis of previous studies, it is clear that there is a lack of a clear and potent understanding about the relationship of technology to progress. As a result, the excessive consumption and manufacturing that occur cause the environmental problems and climate change. In this context, knowing how to correct this is essential.

This is where the importance of the integration between the latent and apparent systems of architecture come to light to enable a sustainable architectural product. However, no studies have directly addressed this issue: the relationship between the latent and apparent systems and the phenomena that govern them. Thus, the research problem is the lack of clarity on the relationship between the latent and the apparent in sustainable architecture as shown in the Table 1.

**Table 1:** Ideas expressed in previous studies.

Source: Authors

	Previous studies	The most important issues dealt with by previous studies to achieve sustainable architecture.
1	Ahmed and Fakush, 2012	Proposes the use of high-tech architecture in providing solutions to environmental constraints, saving energy, and improving the performance of a building.
2	(Hilal et al, 2014)	The study showed that achieving sustainable architecture depends on the appropriateness of the design to the environmental system, the local context and the use of specialized technology appropriate to the functional need.
3	(Khaito, 2018)	Introduces the concept of environmental efficiency as a term used in the construction sector to measure building quality environmentally, based on the fact that ecological performance requirements are one of the environmental design features.
4	(Balush, 2019)	Deals with the importance of scientific progress in technology, informatics, communication, intelligence, and the spiritual values of sustainability in development and the achievement of sustainable architecture.
5	(Mohamed, 2019)	Addresses the importance of environmental design, preserving Nature, supporting scientific inventions, newly manufactured materials and building technologies, which provide a modern environmental language for architecture and urbanism with its own standards. That is, it offers a new approach to environmentally adaptive architecture with creative thinking in structural systems.
6	(Al-Awamreh, 2022)	Deals with technological development, its impact on architecture, and the conflict between borrowed Western ideas, traditional values, and local cultures.
7	(Zhong et al, 2022)	It addressed various challenges in achieving environmental sustainability. It emphasized nature-based solutions with a series of actions inspired by nature and an interest in enhancing the effects of contact with nature while reducing the impact of humans on the natural environment.
8	(Kanaani, 2023)	Refers to future works and ideas that focus on creating environmentally ideal places, situations, or communities based on design principles that reduce negative impacts on the environment intertwining this goal with technology to allow humanity to achieve higher intellectual and physical capabilities.
9	(Wasilah, 2023 )	Addresses the response of the built environments to the natural environment by learning from local wisdom and using traditional architecture.
10	(Genkin and McArthur , 2023)	Deals with new intelligent buildings, which leverage artificial intelligence, big data, and machine learning algorithms to learn and improve system performance and aim to mitigate climate change.

### 3.0 Research Methodology

The research employs the descriptive-analytical study method as a means of testing due to its compatibility with the research objective and the nature of the variables subject to the application. And the possibility of defining it clearly through it.

- Choosing an intentional sample from contemporary projects, taking into account that the sample has employed heritage vocabulary and expressed its social identity
- The research employs a case study method within which data was gathered by means of a number of research techniques.
- Data on the case study were collected from published studies on the project that could be accessed through multiple sources or from the self-description of the project designer himself.

### 4.0 The Concept of Sustainability and Sustainable Architecture

Due to the inventions of technology, the new millennium has produced formulas for the expression of sustainable architecture. These formulas have come in different forms in

which sustainable architecture reflects new dimensions. They include conceptualizing new creative ideas that express continuity of human thought, its communication and renewal without borders, and making buildings remain and communicate to represent the values of the past. They respond to the requirements of the present that respect the era and its technological repercussions without transgressing the constants that express the characteristics of places, environment, society, identity and context etc. (Kharofa, 2018). It is assumed that they produce buildings that support current humanity without damaging the environment and culture. They focus on not importing ready-made ideas without considering the specificity and requirements of the environment (Al-Obeidi, 2019).

Sustainable architecture can thus be interpreted as the renewal of ideas and the creation of a new generation of environmentally and socially peaceful buildings.

## 5.0 Technology in the Latent and Apparent Systems

According to Francin et al. (2020), technology has two dimensions: instrumentality and productivity. Instrumentation covers the totality of human endeavors to control their environments by intervening in the world in an automated manner using machines purposefully and intelligently. This is the apparent system. As for productivity, it covers all human endeavors to find new tools that can perform certain functions in a disciplined and intelligent manner. This is the latent system.

### 5.1 The Latent System in Technology

According to Ali (2017), the system is defined by two pillars that represent the starting point, which are:

1. Cognitive focus: This is a set of cognitive methods used to obtain information and skills and the methods of building and developing them.
2. Conceptual anchor: This is a set of values and concepts that govern technological activities and their application so that the technical entity emerges in response to the need through a specific intellectual framework and nothing else.

### 5.2 The Apparent System in Technology

The system recognizes two other pillars that complement the cognitive and conceptual pillars. According to Ali (2017), they are as follows

1. The technical focus: It is a set of design, implementation, and production actions and practices in dealing with materials and tools, the energy efficiency used, and the organizational style of the approved efforts. The material foundation is the movable group of products, goods, and services the community owns and can use.

## 6. The Material Power in Technology

Chadirji shows that architecture theory is based on the fact that the visual form of architecture is the result of a prior interaction between the social demand for architecture on the one hand and the technology it introduced on the other hand. That architecture consists of an appearance and an essence. Within the actual existence of a building, the nature of the further existence complements the cognitive reality of architecture (Chadirji, 2006), as the impact of technology on architecture has led mainly to the creation of different architectural styles with the development of methods, materials, and material properties that worked on changing building forms from prehistoric architecture to the present day (Ali, 2014).

Ali (2017) points out that architecture is a social phenomenon with multiple purposes and responds to social needs. On the one hand, and the changes in the techniques used in the manufacture of raw materials, on the other hand. Indeed, technology is the tool for manufacturing this phenomenon and bringing it into existence. (Ali, 2017)

From the foregoing, it is clear that the role of technology as a force in the architecture system is limited to transforming the latent into the visible by working on the essence of the visible matter, which is represented by the system from which the architecture is formed, i.e., the system (thought, material, and form).

## 7. Thoughts: Power in Architecture

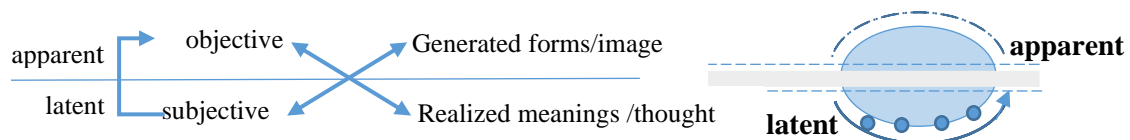
Al-Abdali points out that architecture represents one of the phenomena known in its entirety and self-development by the thought that moves from mental existence to external existence, thus representing a state of interaction between the self and the object that takes place within a specific time and place. Mental existence can be defined in the temporality of movement in the self through realized meanings versus external presence in the objectivity of site through generated forms (Al-Abdali, 2015).

While Al-Youssef shows that architecture consists of an object and a subject, and architecture controls them; therefore, the relationship between the subject and the object is a relationship of thought with its image. Thus, the appearance of this latent, embodied system will reflect the outcome of the system's purpose and thought (Al Youssef, 2017).

The image does not have spirituality and continuity, but rather the meaning that gives it the continuity of existence. The temporal depth extends its instantaneous presence to the past and future, giving it its historical depth in the individual and collective imagination, and can establish architectural identity (Kassem, 2013).

In the absence of authority of thought, spontaneity, and absolute spontaneity dominate the methods of dealing with reality. Thus, Arab architecture, through the image, has adopted the approach of modernity as the natural expression of the architectural intellectual development of modern societies. At its best, it is marginal or artificial; that is, it fabricates the meaning that fits the image instead of the image being a spontaneous reflection of the essence. (Kassem, 2013)

From here, the importance of the architect's latent role and position in creating the impact of his architecture and the Muslim architect's point of view and view towards his architecture is seen as a message to his community. The mind that looks at the social and moral outcomes of its products and the necessity of preserving the performance of its message as a social and moral goal, and the interest in modifying the present to build a future that helps to understand and change the present. There are two aspects related to the potential of architecture: one of them is obligatory and related to the future, and the other is realistic or real due to present and past.



**Fig. 1:** The movement of the latent system with its four causes/ the intellectual organization toward the apparent system.

Source: Authors.

## 8. Architecture between Matter and Image

Architecture between matter and image is governed by the fact that architecture is not architecture in its constituent material as much as it is its image resulting from it. Thus, the return of the image to the mind is not in its material (the material of production) that is subject to deterioration. Hence, the justification for remaining in a stuck image without matter in Man's mind and from that is the product. The architect is in his image, not in his material. The outcomes (buildings), whatever they are, are achieved by an idea, just as a person is affected by it due to its image, which represents the meanings accompanying it and the participation of his material in it. The production is in one of the two images, so one becomes a definition for the other, as it reflects the goal of the one who produced and presented it (Al-Youssef, 2019). For each era, there remains a mental image that expresses the spirit of this era, and it is often a lingering effect that carries within it the thought of this period (Abbas, 2014).

Architectural identity is linked to the image and its material obstacles, while the general manifestations of identity represent ideas abstracted mainly from the sensory images they embody. Our perception of language, culture, and history as identity components are independent of visions and sensory manifestations. With her physical and visual presence, she

has become the owner of the most significant role in influencing the perceptions of individuals and the way they perceive and formulate their identities (Kassem, 2013).

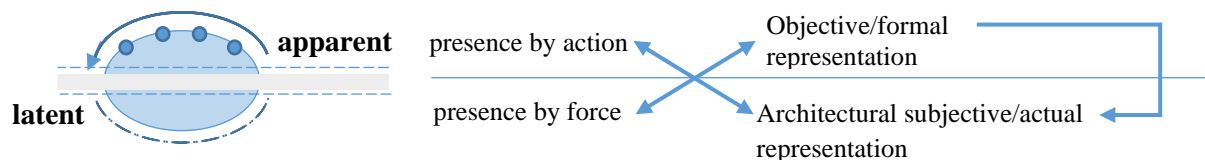
Indeed, when we get to know the architectural forms, they represent the apparent indications and then reveal the hints inherent in the idea of production (Al-Youssef, 2019), whereas Wasilah indicates that architecture takes different forms to clarify the philosophies and concepts of its designers. As such, architecture can be seen as a form of non-verbal communication intertwined with the cognitive principles of its creators (Wasilah, 2023).

While Al-Youssef shows that any product is the speaker of the spirit of his era to which he is affiliated, and this means that the material components achieved in the technologically available materials and the spiritual, which are different from the general spirit of the era in terms of form, and thus the formal difference is a real, actual difference responds to the contrast of the images generated in it (Al Youssef, 2015).

It is realized in assets as architectural products, concepts that include the following (Al-Youssef, 2019)

- The state of self-possibility in its convergence with the thought of steadfastness.
- The state of readiness in its confluence with the idea of movement.

In other words, it represents the essential characteristics and monitors them with their steadfastness, which is the actual existence of architecture. As for what appears in terms of the power to change these characteristics due to the power of architecture, it is the presence of architecture by force.



**Fig. 2:** The movement of the apparent system/ the meaning perceived from all external attributes towards the latent system.

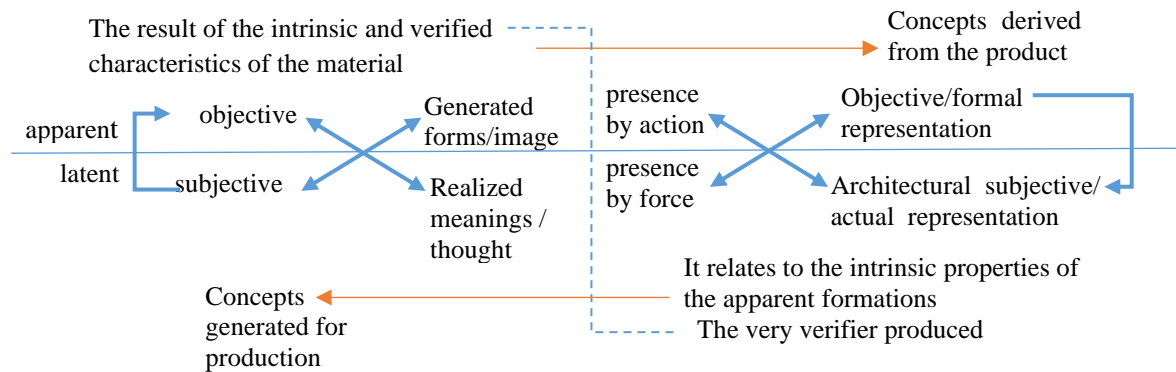
Source: Authors.

From here, it is clear that the products in their formations and their external reality are a formal semantic structure that takes its character from the latent architecture that embodies it. Hence, architecture, moving from the apparent to the latent, is an explicit message that affects the other. Its meaningful action in time and place considering the reality of architecture by strengthening its connection with its reality and the mental images it produces is a distinguished and unique society.

Architecture must achieve convergence between the apparent and the latent systems. Between the levels of image, meaning, and the different aspects of transforming each of them towards the other, that is, towards the better.

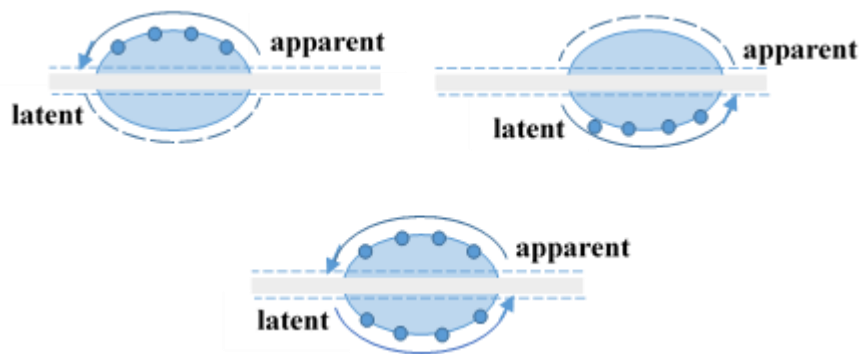
Perhaps architecture, in the process of creating the impact of architecture, faces two steps: exposure and manifestation. Traditional architecture, in the first place, seeks to know the laws and regulations in force in existence and to unveil their hidden face. In the next stage, he should show the discovered rules and systems and highlight them in his architecture: the creation of the effect of architecture. The researchers that studied the influences in the steps of creating architectural archeology concluded that the efforts of the architects in a series of these steps are not manifested in the subject of production and creativity. Still, rather his work can be considered displayed in the category of disclosure or exposure. It is estimated through its association with the world of existence. In deciphering its symbols and gases, these bilateral interactions aim to transform the architectural monument into a trace of identity characterized by authenticity and stability in its natural environment (Amedwari, 2020).





**Fig. 3:** illustrates the movement from the apparent to the latent and from the latent to the apparent in architecture  
Source: Authors.

Fig. (3) illustrates the movement from the apparent to the latent and from the latent to the apparent in architecture. It does so by using external sensors-the tools and source of the mind-to extract meanings and concepts from the production in the external reality and transfer them to the mind. They are there to reformulate the original to produce a new architectural image that has its local specificity.



**Fig. 4:** The movement of the architectural potential and apparent architecture: it is a mutual movement that refers each to the other.  
Source: Authors.

Thus, realism is not summed up only in appearance, because appearance is an image of something and a manifestation of the essence or meaning. If we remain in the image and do not see the meaning, we will never fully comprehend anything. Imam Ali, peace be upon him, says, "The vision is not with the eyesight. The eyes may lie to its people, and the mind does not deceive those who seek its advice."

### 9. Qualitative and Physical Image

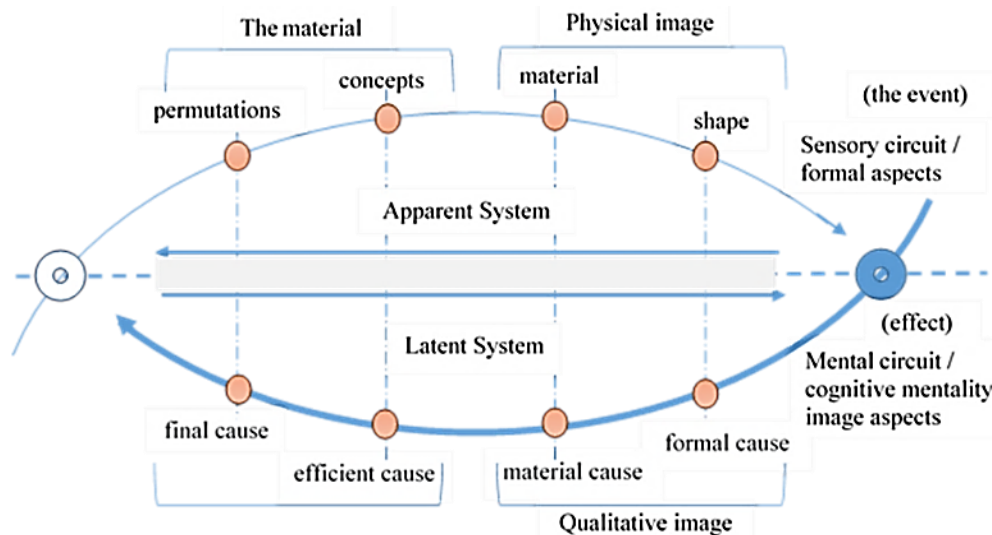
Aristotle saw the fixed existence as it is a truth that is not related to things but rather to the mind, as it is due to logic. It is a fixed essence in the item, but the accidental existence is subject to change and disappearance and does not explain the reality of the presence of the thing (Rizig and Rizqi, 2018).

Ibn Sina believes that the body is a body, as it is composed of a hula and a bodily form. There is no doubt that the bodies are different in reality. Still, they are united in the physical, as it is what happens to the thing in terms of the modalities that change its conditions and conditions without changing its nature. Thus, their difference is only in matters beyond the

physical, which are the qualitative forms, and they are the principles of the different effects specific to a kind of a kind (Ibn Sina, 2014).

The qualitative image corresponds to the effects of the types of material assets, including the bodily image that accompanies the original with a different qualitative image, as there must be an image that takes possession of it and realizes its occurrence in the external reality so it is in the physical image. Due to the lack of a single physical image that shows the original, the appearance of it is those different images of the products with the survival. The original is fixed and does not change in it, and the variable remains, and the altered are the successive qualitative forms on the original, as in the different physical conditions of things.

From the foregoing, it is clear that the architectural product consists of the apparent and the latent: the appearance in it is the beams, which are accidental forces, and the possibility of my preparation, which gives the idea of changes and forms up to the acceptable forms in the external reality - the actual / built environment, which is governed by the place and their appearance is achieved by the essence of architecture and research in it. The bodily images perceived by the senses, and the latent of the production, is an essential power - the eye of the power and a subjective possibility, and exposure in it to the qualitative images specific to the essence of the thing, which evaluate its actual existence and the truth. These are expressed in the common fact between several products.



**Fig. 5:** The relationship between latent/ the mental circuit and the apparent/ the sensory circuit.

Source: Authors.

Al-Abdali divided the causes into two parts. The first he called the internal cause, which is the material and formal causes, and it is called the causes of continuity. The second, he reaches the external cause, which is the practical and final cause and is called the cause of existence because it is responsible for the presence and is the one that gives the thing its reality. It is the power from which the action or event is issued (Al-Abdali, 2015).

Philosophers believe that thought has matter and image, as its material is the human mind. Its purpose (the active cause and the final cause) is the causes of existence, as Abdali called them. As for its image is the qualitative image (the material cause and the formal cause), the causes of continuity.

Architecture is that if it appears in multiple forms, the possibility of it may be subjective because it is based on the same architecture, not on what occurred in which it was presented. Still, it is essential that this possibility cannot be removed from the nature that embraces it. The matter in it is that which gives images and symptoms resulting from the essence of the issue of architecture (Al-Youssef, 2019).

## 10. The Apparent and Latent in Islamic Architecture and the Philosophy of Identity

Philosophy of identity is a term that generally means every theory that does not differentiate between matter and spirit, nor between the object and the subject, and looks at them as inseparable units (Kassem, 2013). The product is environmental, but architecture, as an ecological product, necessarily secretes what is inside that environment with its realities. As for architecture in Islamic societies, it was emotionally linked to the surrounding environment and the culture they carried from their countries, which mixed to varying degrees with the new territories, producing architecture that has found its environmental solutions from within (Abbas, 2014).

In the global architectural trends that work to subject societies to the concept of the product of one architecture and one culture according to mechanisms that facilitate access to that product through technological means in a new identity. and the rapprochement of the living patterns of different societies that do not give room for the stability of their identity. It is an orientation capable of changing places and their people, obliterating their features, banning the language of their architecture, imposing new and specific symptoms to invent alternative memory and accept it, rearranging the context of the actions of its narrators, transcending the memories of its results as they are when bringing them closer to stability, thus topping history and replacing it with a new history instead of the collective memory (Al-Youssef, 2019).

In his idea of change, when a change affects human life, including architecture, it affects the structure and identity of society; its importance has been manifested in the combination of the style of architecture and what it provides with what change produces in terms of changing and displacing society's vision of social, environmental and economic structures towards incompatible patterns that affect the values, customs, and traditions of life. The human being is in it, and what accompanies this is the change of the influential actor in human production whose vision changes like the change in architecture and its social, economic, and environmental consequences until the architectural orientation becomes associated with how change occurs and how it affects the identity and architecture of society (Al-Youssef, 2019).

And the process of changing the multiple images of any architectural product requires its adherence to contexts associated with the presence of a formal and another semantic modern means the survival of its fact, stability, and continuity of its existence, to be part of the privacy of society as it is not represented in architectural formations. However, what it produces are community customs that are achieved in a local environment and thus be creative in meeting human requirements to adapt them to the reality of society or the environment.

The utmost importance in the philosophy of domestic architecture is to avoid harming Nature. It presents an ecological approach that requires adaptation to natural contexts. It offers architecture as an expression of humanity's interactions with Nature—achieving the required balance between the three elements: architecture, soul, and society (Wasilah, 2023).

The feasibility of architectural thought and practice and its importance in contemporary Arab societies depend on its ability to absorb the continuous developments in architecture at the global level and, simultaneously, to focus on the specificity of local belonging (Kassem, 2013).

Thus, achieving sustainability comes through acceptance of the stability of the substance – sustainable – on the one hand and the existence of change according to the requirements of the times as the constants imposed by Islamic law in the urban structure, are integrated with development and the spirit of the times to achieve the social and cultural requirements in the urban environment (Neama and Al- Ahabbi, 2011).

Sustainability of Islamic thought pushes to adjust the principles of Islamic law to be a constant reference for everyone involved in the field of urbanization and modernity to reformulate the original to produce a new architectural image that has its local specificity through the product of fixed belief and meaning and a variable formation that changes with the change of time and the culture of its society. In contrast, the meaning of architecture remains constant. It remains original and does not change in it (Al-Youssef, 2019).

The strong emergence of the products is achieved through those formations in which the latent and apparent movements are integrated and the degree of their impact on their environment and societies.

## 11. The Case Study

### 11.1 Criteria for the selection of the sample

Several criteria are taken into consideration in selecting the sample of the applied study: The selection of a contemporary local model that adopts advanced technologies. It is classified under sustainable architecture. It seeks to revive the essential local, historical, and heritage goals representing society's culture.

### 11.2 Introduction to the Case Study

- Name of the project: The Central Bank of Iraq building project, Baghdad / Al-Jadriya area on the bank of the Tigris River, 2012
- The project consists of a base with an area of 90,000 square meters and a tower with a height of 170 meters, consisting of 38 floors, with three floors below ground level and 35 floors above ground level.
- The name of the designer: Zaha Hadid

**Table 2:** Description of the project and analysis of variables

Source: Ayeed and Al-Tameemi, 2021

#### Definition of the case of the description

- The building represents a breakthrough displaced from its context in terms of form and thought, as it adopts the shape of the blades that achieve sustainability for the installation by using them as air intakes and natural ventilation and the benefits of sound insulation that they provide. This refers to the formal dealing with the building, which reflects the alternating pattern of open and closed elements that visually simulate. Conceptually, the light reflected from the waves in the river enhances the dynamism of the design.
- The mass of the building is hybridized between solid, open, solid, and transparent, with parametric patterns, which are compatible with the environment, such as wind, its impact, loads, and the seismic activity of the tower, depending on a method for developing the structure and the shell.
- What makes the building unique is its non-traditional architectural orientation in its designs; there will be gardens at the top and in the terraces, bringing it closer to the image of hanging gardens.
- The use of double skin facades and double glazing to achieve the isolation of external conditions from the internal spaces. It uses smart materials such as smart glass and pollution-resistant cement in an attempt to obtain materials with a minimal impact on the environment, as well as the use of glass fiber reinforced concrete (GRC) panels. In the tower, it uses Ultra-High-Performance Concrete (UHPC) in the entire building structure due to the high strength and durability of these panels as the building needs to support security defenses and external penetrations.
- Using intelligent systems in building and energy management (BMS) such as fire detection systems, security protection systems, maintenance, self-cleaning, and facade cleaning systems, and using innovative technology to feed and drain the green roofs above the base of the building with extra water and rainwater according to the needs of the top in an intelligent way.
- There is an intelligent system in the design process that gives flexibility in designing the shape and achieving different forms due to the use of parametric design technology (BIM). This design technology creates blades in the facades to provide the most prominent view of the Tigris River, using digital design using Revit and Rhino programs to obtain 3D modeling using the parametric design method. It is a contemporary design using light tradition, elegant construction methods, and intelligent materials cost-effectively.

- The project's main feature considers the intellectual and philosophical aspects. It is one of the buildings classified within sustainable architecture.



**Fig. 6:** The Central Bank of Iraq building

Source: <https://www.zaha-hadid.com/architecture/central-bank-of-iraq/>



**Fig. 7:** Sustainable features of the Central Bank of Iraq building,  
Source : <https://www.zaha-hadid.com/architecture/central-bank-of-iraq/>



**Fig. 8:** Use of sustainable materials and technologies and the way to deal with natural lighting,  
Source: <https://www.zaha-hadid.com/architecture/central-bank-of-iraq/>

**Table 4:** Description of the project and analysis of variables

variables	Application and analysis of variables
The apparent system	<ul style="list-style-type: none"> <li>– Producing complex geometric shapes and achieving a practical feature linked to the concept of sustainability in terms of their suitability with the environment, such as wind, its impact, loads, and seismic activity of the tower, depending on a method for developing the structure and shell.</li> <li>– Using the double skin facade to isolate the external conditions from the internal spaces.</li> <li>– Use innovative materials such as smart glass, anti-pollution cement, glass fiber reinforced concrete (GRC), and ultra-high performance concrete (UHPC).</li> <li>– Approval of intelligent systems in building and energy management (BMS)</li> <li>– Dealing with natural lighting in the heart of the building</li> <li>– Spreading green spaces on the upper deck to add a comfortable and healthy environment</li> <li>– Coupling the complexity of shapes with Parametric Design Technology (BIM), Digital Design using Revit and Rhino software to get 3D modeling to create blades in the interfaces to achieve the sustainable model</li> </ul>
latent system/ latent architecture	<ul style="list-style-type: none"> <li>– The act of thinking for the architectural designer is mastering the appearance and the exit of his idea to reality by activating the form and material in the existence of the architectural production. And the use of elements from the heritage represented by the windlass in the form of blades as concepts that generate production and are derived from the local reality in a way that takes advantage of the ideas of achieving a sustainable building and emphasizing the idea of returning to heritage in achieving environmental sustainability in contemporary forms.</li> </ul>
Integration between the apparent system and the latent system/ technological method associated with intellectual, spiritual creativity	<ul style="list-style-type: none"> <li>– The building as a system reflects its environment through a specific principle, including forms not defined in a context and multiple images controlled by blades. Within a verified product of sustainability and environmental compatibility.</li> </ul>

## 12. Conclusions

- Environmentally sustainable architecture is the result of the union of two forces, the power of thought and the power of matter, and the creative interaction between them.
- Architecture consists of two levels: The level of sense, which goes towards the external reality and is related to production and technology. It is closely linked to humanity's scientific and technical advancement. It represents the accidental existence subject to change and demise and does not explain the reality of the existence of architecture. The level of the mind is the aspect associated with human thought. It is represented by all the intangible cultural features of ideas and beliefs, which are more stable than the physical level of architecture.

There is a mutual and affected relationship between latent and apparent systems. There are two inseparable movements, one of which complements the other and refers one to the other, and they are:

- Move from the latent to the apparent: concepts are generating production.
- Movement from the apparent to the latent: concepts derived from the output.
- The transition from the concepts generating the product to the results generated by it in explaining the effects of its appearance.
- Integration between the departments of sense and reason achieves sustainable architecture compatible with its local environment.
- Integration between the two circles of sense and reason to achieve a unified architectural product in its origin for a specific time and place. It is subject to properties and features that give diverse architectural images so that each community has its architecture.

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