



Visual Sustainability in Urban Renewal Projects Traditional kut City Center as a Case Study

Rabee Jameel Al-Shammari¹, Abbas Na'im Mohsin²

Affiliations

¹ Department of Architectural Engineering
University of Wasit
Wasit, Iraq.
rabee.jameel@uowasit.edu.iq

² Department of Architectural Engineering
University of Mustansiriyah
Baghdad, Iraq.

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Abstract

This research addresses the importance of visual sustainability as an essential element in city centre renewal projects, and its role in enhancing the visual quality of urban centres, as most traditional cities suffer from increasing challenges in facing urban renewal processes due to various interventions, which may lead to the loss of the city's cultural and visual identity. The research aims to understand how to achieve visual sustainability in the centre of the heritage Kut city as a case study and impact of this on the quality of life and community interaction.

The study area was analyzed using the SWAT analysis method, in addition to a literature review on the topic, observation, interviews with key stakeholders involved, and analysis of existing data and documents. The research concluded that focusing on visual quality indicators can enhance identity, heritage, aesthetics, and quality of life in cities, as the results showed a positive relationship between visual quality indicators and the clarity of the urban environment. Therefore, enhancing visual sustainability in the traditional Kut city center requires focusing on three main indicators that can be achieved by using sustainable local materials, preserving cultural and heritage landmarks, and integrating the urban design process with community participation in planning, design, implementation, and implementation. Evaluations.

Keywords: Urban Renewal, Visual Sustainability, Vitality, Urban Identity, Al-Kut Traditional City, Iraq.

الخلاصة:

يتناول هذا البحث أهمية الاستدامة البصرية كعنصر أساسي في مشاريع تجديد مراكز المدن، ودورها في تعزيز الجودة البصرية للمراكز الحضرية حيث تعاني اغلب المدن التقليدية من التحديات المتزايدة في مواجهة عمليات التجديد الحضري بسبب التدخلات المختلفة، والتي قد تؤدي إلى فقدان الهوية الثقافية والبصرية للمدينة. ومنها يهدف البحث إلى فهم كيفية تحقيق الاستدامة البصرية في مركز مدينة الكوت التقليدية كحالة دراسية وتأثير ذلك على جودة الحياة والتفاعل المجتمعي.

تم تحليل المنطقة الدراسية باستخدام طريقة تحليل (SWAT)، إضافة الى مراجعة الأدبيات حول الموضوع، والملاحظة، والمقابلات مع أصحاب المصلحة الرئيسيين المعنيين، وتحليل البيانات والوثائق الموجودة. وقد وجد البحث أن التركيز على مؤشرات الجودة البصرية يمكن أن يعزز من هوية المدن وتراثها وجمالياتها وجودة الحياة فيها، حيث أظهرت النتائج وجود علاقة إيجابية بين مؤشرات الجودة البصرية ووضوح البيئة الحضرية. وبالتالي فإن تعزيز الاستدامة البصرية في مركز مدينة الكوت التقليدي يتطلب التركيز على ثلاثة مؤشرات رئيسية يمكن تحقيقها باستخدام مواد محلية مستدامة، الحفاظ على المعالم الثقافية والتراثية، تكامل عملية التصميم الحضري مع المشاركة المجتمعية في عمليات التخطيط، والتصميم، والتنفيذ، والتقييم.

1. INTRODUCTION

The ancient cities are part of the city's culture and heritage legacy, and they reveal the architectural value, planning and creations of the architects that are based on standards stemming from the essence of the region and its historical characteristics. A plan must be drawn up for the maintenance and rehabilitation of the old buildings and the preservation of their local identity as part of the city's cultural heritage.[1]

Also, the rebuilding of the old neighbourhoods must be commensurate with the social, economic and technical developments and re-planning them according to the originality of the bright Arab architectural heritage and the heritage that absorbed the climatic and social characteristics and came out with a technology that was in line with those characteristics.[2] the concept of "sustainability" appeared, which comes from the tradition of thinking that criticizes economic development and ignores the natural environment and thus leads to an end devoid of resources.[3] Therefore, those interested in this perspective "sustainable development" participated in achieving economic and urban development that respects nature and integrates with it according to environmental aspects. Which works to improve the human presence in the city.

2. METHODOLOGY

To gain a thorough understanding of the significance of visual sustainability in urban renewal, a mixed-method research approach was utilized. The methods used in the research were based on interviews with professional urban planners, architects, and urban designers. Several methods were used in the research, where the most important features of urban design in traditional areas were extracted with a focus on sustainability measures, including ease of pedestrian access, the importance of energy efficiency, and the presence of green areas. Information on sustainable urban design practices was collected from previous literature on traditional city centres.

3. LITERATURE REVIEW

Most studies of visual sustainability in urban renewal projects are related to the nature of the methods and selection of design techniques used to improve and enhance visual cohesion, considering that they achieve balance in the urban environment of the city. Objectives related to visual sustainability may include Preserving the city's important heritage, along with the principles of harmony and integration between everything new to meet the requirements of the local community. [4] Sustainable urban design mechanisms may include choosing multiple methods to revitalize urban areas in general, and old ones, while preserving the cultural character of the city and focusing on its heritage. These methods include restoration, maintenance, and reuse of buildings as well as new buildings. [5] In addition to enhancing and improving the design of public places, roads, and corridors, with a focus on aesthetic standards in the design and construction of public areas. [6] All in the name of creating beautiful objects linked to visual sustainability. [7] Everything that can improve the urban environment is beneficial for sustainability activities, as all measures improve the quality of life for both city residents and visitors. Research in this field has highlighted the importance of urban renewal initiatives in sustaining life in traditional cities in most cities in the world. [8] Camilo Vergara uses the tool of city photography to show the power of city structures as an integral part of the urban regeneration process. The visual aspect and working to sustain it are the most important in the continuity of cities with a spatial dimension and ancient chronological history. [9] Hence, the importance of visual design elements in most urban renewal project initiatives is extremely important because it provides them with the spatial continuity necessary for human activities, and this is what was stated in the book "Urban Design for an Urban Century, Designing Places for an Urban Century." Urban Century." "People", the authors also emphasize that the need to understand placemaking and placemaking priorities are essential to creating a fun, attractive and useful city as critical elements in achieving a sustainable approach to traditional city centres. [10] The book Urban Design, Chaos, and Colonial Power also focuses on the importance of visual design in focusing on city features in a dynamic manner. Bissell asserts that colonial powers used visual design to impose their control over urban spaces and shape the social and cultural fabric of the city. Therefore, the following can shed light on the issue of visual sustainability, which is potentially an important element of city life:

3.1. VISUAL SUSTAINABILITY

Visual sustainability refers to the preservation and enhancement of the visual aspects of the built environment, including architectural character, historic landmarks, public spaces, and natural features. It involves incorporating design and planning strategies that promote sustainable and visually appealing urban environments, such as the use of renewable materials, green infrastructure, and pedestrian-friendly streetscapes. The goal of visual sustainability is to create urban environments that are aesthetically pleasing, culturally appropriate, socially inclusive, and environmentally sustainable. as for the concept of visual, it is everything that is visual, perspective, visual, which results in the clarity of the visual appearance of urban space because of the integration of many factors, including "Building density, scale, building proportion, the relationship between mass and space, proportionality, and the relationship to neighbourhoods" [11].

According to what was previously proposed, visual sustainability can be defined as "the continuation of the visual clarity of the set of relationships in a way that secures sensory pleasure within the objective capabilities of the visual surroundings and access to it at the urban level is closely related to urban spaces and the possibilities of urban renewal, so the mechanisms of urban renewal will be studied.

3.2. URBAN RENEWAL

The term urban renewal was put for the first time by the American economist (Miles Colea) in 1950 [12]. Urban renewal is defined as "the process of restoring buildings and adapting them according to the requirements of contemporary life" [11]. It involves a tangible change in the level of exploitation and construction of structures to attract economic and social activity in urban areas. Urban renewal is the process of modifying a city's infrastructure to meet contemporary needs using the resources now available. [13]. There are three trends that called for the adoption of urban renewal mechanisms represented by social, economic, and urban trends. As for the renewal mechanisms, they are: -

- Preservation: It is the first policy of urban renewal, and it is often linked to the culture of society, civilization, the environment, and history in terms of its relationship to identity, and it is often at the level of individual buildings that have tourism importance and have historical value to preserve their identity, This approach is used due to the need for structures and areas that preserve the nation's history and urban fabric in light of the increasing factors that threaten the survival of the fabric, the necessity of modifying it to meet modern needs, and the scarcity of social facilities. Services. And infrastructure. Reuse and conservation go hand in hand; In the first case, structures and societies are adapted so that they can be used for purposes other than their original purposes; Finally, some leeway to adapt was given. [14]
- Rehabilitation: is the second program in urban renewal, focusing on specific areas or sectors with distinct features. This program is governed by trends, laws, and determinants related to the nature of the area. Its goal is to preserve the physical structure of buildings while improving the urban fabric of the region.[10] The program involves intense development patterns to modify partially worn-out buildings or those lacking internal spaces, green areas, organization, and services. This may require removing some poor buildings, compensating for shortages in infrastructure and services through partial demolitions, and constructing new buildings in their place. [15]
- Redevelopment: involves demolishing dilapidated neighbourhoods and rebuilding them for investment purposes. However, there are obstacles to this method, such as the fact that it isolates people from their communities, that it is expensive in terms of people, money, and technology, and that low-income people cannot afford newly built homes. It may also lead to an increase in the housing deficit, a lack of sympathy for design concepts, and a sharp separation of historical development.[11] Sustainability is closely related to historical cities and their evaluation criteria, including environmental, social, and economic factors. Visual sustainability in urban space is defined as the communication of urban formation with an intended cultural impact that enshrines the integrative value of space performance. Sustainable urban renewal goes beyond architecture and landscape architecture, with perceptual qualities like adaptability, continuity, clarity, integration, diversity, complexity, meaning, openness, sensuality, unity, vitality, visual quality, human scale, and transparency. In 2010 his study on urban renewal, Al-Haidari indicated that the renovation processes that were carried out for certain communities are still suffering from negative effects at all levels due to the lack of an appropriate atmosphere for their success because they were not observant of the plans and objectives of sustainable urban renewal [12]. (Figure 1)

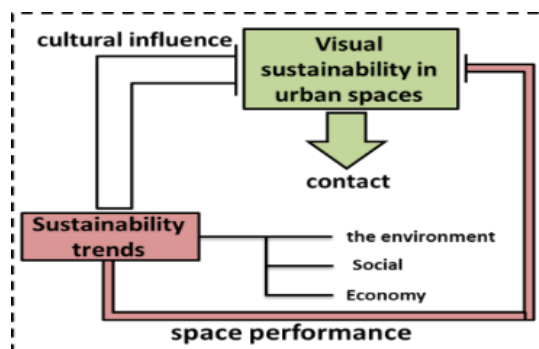


Figure 1 Visual sustainability in urban spaces. Source: researcher.

The study (Reid Ewing & others) took the characteristics of the urban design of a specific urban environment based on its visual efficiency that encourages walking and staying in it as a measure of visual evaluation, which were as follows (visual continuity, human scale, clarity, pattern, complexity, organization). The characteristic of the close human scale is the availability of aspects of visual continuity, coordination of shapes and organization of elements within the design of urban spaces, through the achievement of visual characteristics in each scene [16]. In 2014, Alani conducted a study on the concept of creative projects, specifically examining ways to achieve harmonious integration between old and new projects in historic city centres. The study also examined the possibility of using the urban dictation innovation strategy to revitalize the city. The aim was to create a framework for implementing the strategy by conducting a comprehensive assessment of projects in the historical cultural area of famous cities such as Budapest, Prague, and Vienna. These cities act as a catalyst for creating a liveable, safe, and attractive environment, making them important destinations for both locals and tourists.[17] In 2009, Verschoor presented his research on the visualization of new architectural constructions, reuse of existing structures, urban formations, and architectural schemes for outdoor environments. Urban designs play a crucial role in contemporary design strategies, especially in the 21st century. They are essential components of urban renewal initiatives or plans, and their implementation goes beyond mere planning and design. Not only should the filler be analysed, but the surrounding environment or context must also be considered to ensure that the creation of the filler is consistently dependent on its context. [18]

After presenting a theoretical framework on the concepts and policies of urban renewal, the concept of visual sustainability, and some studies that dealt with the subject, a set of vocabulary representing variables of visual sustainability in urban renewal policies was extracted, as shown below:

3.3. EXTRACTED INDICATORS

Good renewal policies require research into the sustainability of the visual aspects in addressing the urban landscape and since the urban renewal of cities according to visual sustainability is an artistic skill in addition to the scientific and technical concepts it contains. As mentioned in the previous paragraph, a set of vocabulary is extracted through which projects are analysed and conclusions drawn, as it is necessary to identify these concepts as follows.[14]

- **Adaptation:** Adaptation focuses on the re-employment of historical and heritage buildings in new uses with the least change in the internal distribution of spaces and no change occurs in the external facades with the continuity of maintenance of buildings [19].
- **Continuity:** The continuous and homogeneous extension is achieved in the townscape because of the harmony in the relations between the visual components, which achieves the preservation of the unity of the composition and avoids the contradiction between the components of the old and modern urban fabric [12].
- **The regularity and continuity of the urban landscape is achieved through formal relationships and aesthetic complements that achieve aesthetic satisfaction and visual pleasure.**
- **Clarity:** Urban clarity includes visual organization through spatial communication, the relationship between neighbourhoods, harmony between urban scenes, and formal cohesion that takes place through the relationship between mass and space [12].
- **Human scale:** There is a scale for each urban environment, which is achieved through uniting buildings in proportion to each other and to their surroundings and the voids that permeate them. This scale is determined by height, width and depth. And the homogeneity of the scale must achieve the standards in the urban space at the level of one use at least, that is, that one measure applies, for example, in residential buildings or adjacent public buildings.
- **Integration:** It means the integration between the physical components of the urban structure to reach a unified whole, and these elements are realized through their structural characteristics on the large scale and their formal visual characteristics on the small scale, and the visual integration of the urban landscape in the urban structure depends on the nature of the relationships between these characteristics and the urban components [20].
- **Integration:** It means the integration between the physical components of the urban structure to reach a unified whole, and these elements are realized through their structural characteristics on the large scale and their formal visual characteristics on the small scale, and the visual integration of the urban landscape in the urban structure depends on the nature of the relationships between these characteristics and the urban components [21]. (Figure 2)

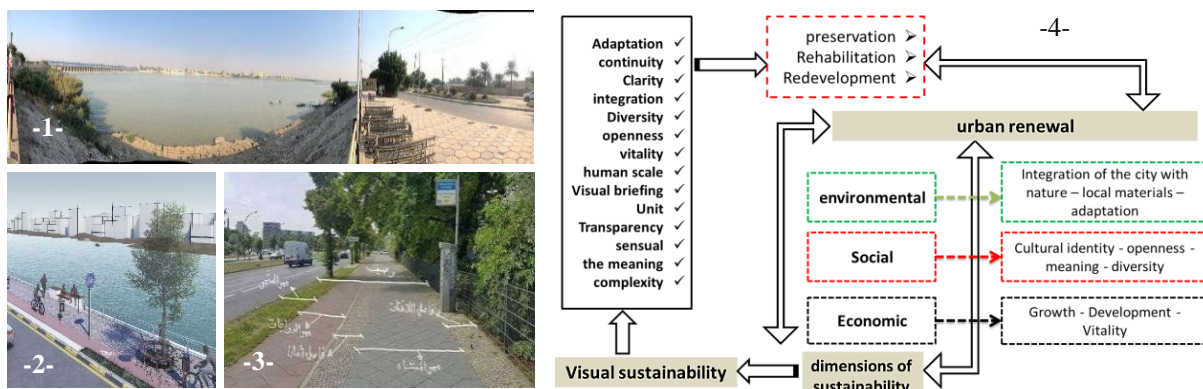


Figure 2 (1- Panorama of the river, 2- Riverfront movement zone design, 3- Organizing events to reach the developer, 4-Visual sustainability according to the mechanisms of urban renewal Source: researcher)

Exploring visual sustainability in urban regeneration policies: Adapting historic structures, ensuring continuity, enhancing legibility, preserving human scale, and promoting integration are essential elements of visually sustainable cities. The success of urban renewal depends on a balance of artistic and technical considerations. By integrating these considerations according to basic principles, planners can create harmonious and culturally rich urban landscapes.

4. Traditional kut City Center

Cities have expanded and grown, leading to the need to develop their old centers. This requires patterns and treatments focused on maintenance, given their important and influential value. Kut, a city on the Tigris River, arose in 1800-1812 through the joining of villages and economic factors such as its location as a commercial port on the river road between Baghdad and Basra. The city's establishment stimulated its role as an important land transportation node, contributing to the development of the urban and surrounding areas. The residential function in the old shops of the city of Kut, such as the eastern Saray, Sayed Hussein, the association, the Daoudia, and the Eastern, was characterized by a set of characteristics such as the discrepancy and small area of the dwelling and the irregularity of its area. It was also characterized by narrow and crooked streets and alleys, some of which are closed. Due to climatic, security and social factors that prevailed in the city, the courtyard (yard) is the main element in the design of the housing unit, in addition to the small windows overlooking the streets. (Figure 3)

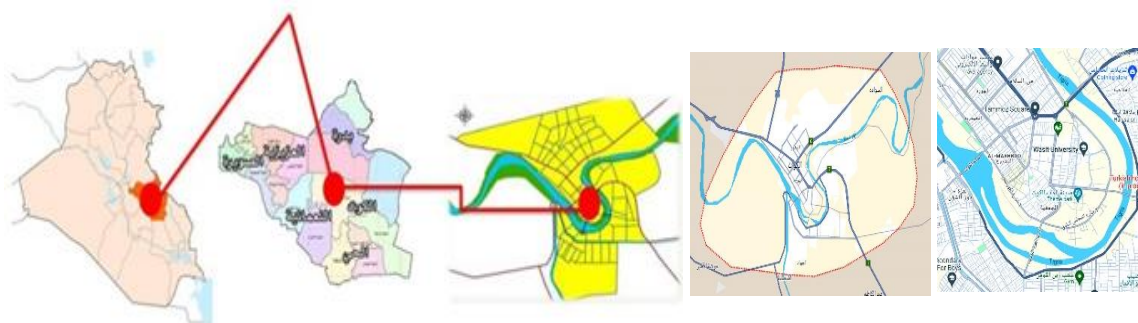


Figure 3 location, Kut city, Iraq. Source: Google map.

The organic streets spread in the old city, which are narrow, crooked streets and alleys with a width ranging between (1.5-3) m. They represent the streets of the first phase, which is a pattern that characterized traditional Arab cities in terms of the convergence of housing units on both sides of the streets and in harmony with the prevailing means of transportation represented by vehicles at the time. Which are in the neighborhoods of the Eastern Serial and Sayed Hussein [22]. As for the roads, they were narrow and tortuous to reduce the effect of the scorching sun in the long summer through the shade formed by the houses inside the alley, so this is considered one of the climatic treatments [23].

4.1. The problems that the old city of Kut afflicting

Many cities today face the consequences of inadequate and inaccurate urban engineering planning, as well as ignoring environmental factors. Natural and human factors have disrupted urban renewal processes, leaving cities currently facing urgent problems that require rapid responses. As Many of the old neighborhoods in the city of Kut suffer from the phenomenon of deterioration, and this phenomenon is concentrated in the neighborhoods of the old city, as the age of construction affected the building materials that were used in that period, in addition to the influence of the climate and the high level of groundwater, which led to an increase in the level of humidity in Building walls, erosion and deterioration. The problems that the old city of Kut suffers from are summarized as follows:

- The spread of the phenomenon of concentration and dispersal: Concentration means the agglomeration of similar urban activities or the interdependence between social or economic phenomena that belong to the same type. As for dispersion, it is the process of changing the locations of certain land uses to other locations. This situation appears in the central area of the city of Kut. After the neighborhoods of Saray, Sharqiya, Al-Azza, Al-Jamiya, Al-Daudiyyah and Sayed Hussain were occupied by residential use, however, with the development and expansion of the city, the use of the land changed, as commercial use invaded parts of it. wide ones.
- Many of the old buildings in Kut suffer from an unhealthy and unsuitable environment for use in line with the new requirements of urban development.
- As a result of the change in land uses and its transformation from residential to commercial use, problems related to the movement system emerged, as the movement paths are narrow and do not meet the commercial purpose and its requirements of pedestrian and car axes. (The change in land uses affected the visual sustainability of the urban facade).
- The city's traffic noise is pervasive, reaching residences due to narrow, outdated streets lacking proper pedestrian and vehicle pathways and integration with modern urban structures.
- The city suffers from mass accumulation in terms of the ratio between mass and space, which makes it a single, compact block that is not permeated by any open spaces that help in environmental sustainability processes, as it lacks the presence of green areas that help open air movement paths and reduce the heat within these areas (lack of Clarity in the spatial organization through the relationship between mass and space). (Figure 4)

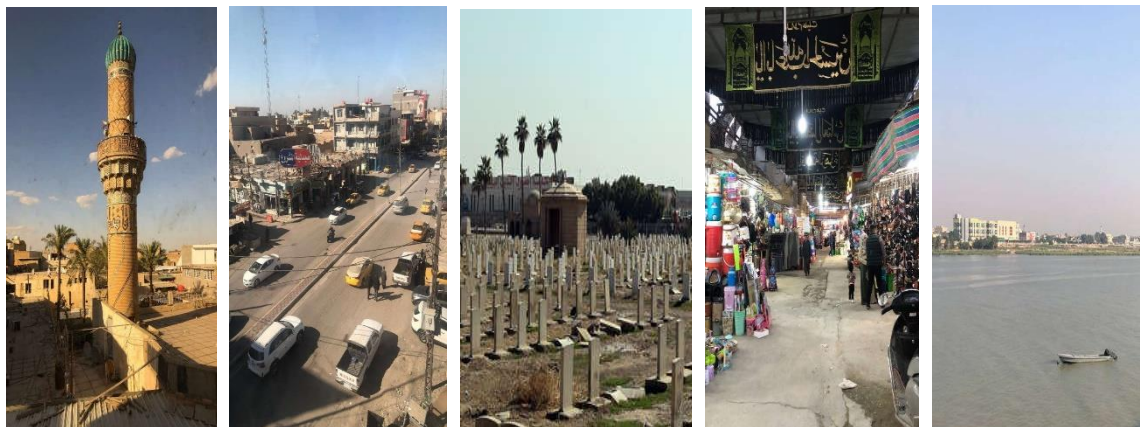


Figure 4 From left to right: The main city centre mosque, Governorate Street, English Cemetery in Kut, market, The riverbank overlooking the city centre. Source: Photography by the researcher

4.2. Proposed solutions for visual sustainability according to the mechanisms of urban renewal:

To identifying the proposed solutions to the problems presented in accordance with the policies of urban renewal to achieve visual sustainability, the process needs to present and analyze the reality of the city's condition according to the indicators extracted from the theoretical framework, as shown in Table 1:

Visual sustainability levels according to urban renewal policies in the old city of Kut.

Key Vocabulary	Extracted Indicators	
	Secondary Vocabulary	The Description
space adaptation	Repurpose historic buildings	Change in the external facades of buildings with lack of maintenance, which leads to a change in the internal distribution of spaces
	Continuity of building maintenance	
visual continuity	Regularity and continuity of the urban landscape	Discontinuity and lack of continuity of relationships proportional to the dimensions of the buildings with each other, in addition to the elements and details, which affects the harmonious relations between the visual components of the urban landscape.
	Harmony in the relationships between the visual components	
urban clarity	satellite communication	The use of elements that are not compatible with the heritage buildings of the old traditional neighbourhoods. There is no clear continuity of the blocks in the urban landscape and thus no communication relationship between the buildings.
	The relationship between mass and space	
	The relationship between neighbors	
human scale	Proportional relationships between building height and street width	The diversity in the sizes of the building blocks and their heights, in a way that is not consistent with the surroundings. In addition to the change in scale ratios between masses and space. The narrow spaces that appear between the buildings are transformed into open spaces.
	Volumetric dealing with neighbors	
visual integration	Building merger	The reason for the discontinuity of the urban landscape and the change in the relationship of blocks to streets is the height of commercial
	Orientation of the urban environment	



Key Vocabulary	Extracted Indicators	
	Secondary Vocabulary	The Description
		buildings, and thus the urban skyline has a major impact.
		

Table 1 Visual sustainability in the old city of Kut and its relationship to urban renewal policies.
Source: researcher

5. RESULTS AND DISCUSSION

5.1. Results

- The arrangement and layout of buildings, roads and open spaces can improve visual sustainability. It includes a strategy to restore and preserve historical buildings while preserving their original external appearance. The importance of the concept of preservation is highlighted as it determines the method of dealing with the urban heritage, and here the historical importance of the area can be preserved while meeting modern needs.
- The need to preserve the historical and cultural identity of the traditional Kut city center is crucial to the visual sustainability process and its impact on the future of the developed areas. Here, some balanced strategies can be achieved that combine modernity and preservation of authenticity as an integral part of urban visual sustainability. Therefore, preserving the important cultural identity of the traditional Kut city center is crucial to the long-term sustainability of the visual district and the future of the city.
- Highlighting the implementation of integrated and comprehensive strategies in urban rehabilitation and heritage preservation projects for dilapidated areas is essential. Therefore, development plans must specify strategies for preserving and maintaining heritage buildings, which is essential in addressing the dilapidated infrastructure of the traditional area. Therefore, preserving historical places plays an important role in developing a balanced and harmonious approach between modernity and heritage preservation.
- As an important result, the application of visual sustainability in reviving traditional and historical cities requires careful and comprehensive study of all parties concerned with these cities, to achieve the requirements and needs of contemporary cities. The above means the need to develop a new and consistent perspective that is compatible with the requirements of cities, including expansion and growth in the historical or traditional area, to ensure the activation of urban revitalization in the broad and long term. Accordingly, this strategy recognizes the balance between preserving the spirit of the historical place and meeting the new requirements for the continuity of life in these cities.
- Visual sustainability is linked to the process of preserving the urban characteristics of cities, and it can be considered that the necessary connection between them is what reflects positively on city life. Therefore, supporting the development process, implementing a set of multiple and balanced urban steps to maintain and provide the financial support that is at the heart of developing the city and improving its condition. The primary beneficiaries of the development processes are the city's residents, to enhance the residents' quality of life by increasing development opportunities for the local economy and enhancing the city's urban cultural identity. We do not forget the administrative and technical staff as part of the continuous development of the city's facilities, because they are responsible for all the details related to daily life in the city. This method can meet the modern requirements of traditional towns while focusing on the reputation and historical importance of the area. Therefore, achieving balance in urban intervention projects in historical and traditional areas is essential to achieve visual sustainability in the traditional center of Kut. Integrating visual sustainability into historic city urban redevelopment processes calls for a new way of thinking that can better balance conservation and development goals. Hence, focusing on the physical structure of cities is extremely important.

5.2. DISCUSSION

- 1- Many cities have begun to revitalize their urban environments, including the historic heart of Kut. However, the task of preserving the historical essence while accommodating contemporary needs is hampered by attention to the urban aspect and the absence of visual coherence, correct alignment of buildings, proportional and harmonious design, seamless integration of old and new constructions, irregularity of activities, and lack of clarity in design. Urban environment. We will explore potential solutions for achieving visual sustainability in Traditional Kut City Centre's renewal project.
- 2- Most of the urban landscapes of the ancient city of Kut have lost their visual continuity due to factors such as the intersection of pedestrian paths and road design, the building not being oriented in one direction, and the lack of proportion and formal harmony between the elements and elements. details.
- 3- The modern building style is far from the local style in terms of the method of construction and the materials used, and thus there is no clear integration between the old buildings of the city of Kut and what has been built recently. Rather, the old buildings have become distorted and not authentic because of reuse and change in the general pattern of the urban landscape.
- 4- Irregularity of activities around intermediate spaces within gradual levels that help in the clarity of the urban landscape, which takes place if the mass gradient of those buildings and their relationship to the void is achieved.

6. CONCLUSIONS

The lack of building direction, proportion, and formal harmony in design within the urban landscape, along with the design of pedestrian walkways and roads, led to a loss of visual continuity in most of the old city of Kut. The modern building style in Kut does not integrate well with the local style, leading to a lack of authenticity and distortion of old buildings due to reuse and changes in the urban landscape. The old city of Alkut suffers from a lack of visual clarity and authentic cohesion, and this can be attributed to it the buildings lack proper orientation and lack of attention to proportion and harmony with the urban surroundings, in addition to lack of attention to formal compatibility. As is the case The lack of homogeneity between modern construction methods and traditional methods may be the cause of the problem. Thus, the size of buildings and their relationship to public spaces played an essential role in the clarity of the urban landscape.

7. RECOMMENDATIONS

1. Paying attention to the quality of the architectural design of buildings and the use of local materials, especially at intersections and roads with strong visual axes, to provide visual continuity between the traditional components of the city.
2. Emphasizing the comprehensive hierarchy of buildings and their relationship with urban space, as the clarity of the urban landscape in the old Kut city is linked to prioritizing this approach in future urban renewal projects.
3. Preserving old buildings of spatial and societal value, with a focus on integrating modern building styles with the local style of the region, in addition to encouraging innovation, especially if it is linked to the traditional style.

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