

Effectiveness of Sustainable Urban Projects in the city of Baghdad A comparative study of sustainable development projects in Adhamiya and Kadhimiya District*

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Abstract:

This research comes in an attempt to evaluate and compare between the efficiency of a selected sustainable urban projects from Baghdad city (Al Adhamiya and Al Kadhimiya areas) through applying the criteria of urban sustainability and compared using SWOT analyses model (represents one strong word: S = strengths, W = weaknesses, O = opportunities, T = threats.), this done by examine the most important strategies which targeted to extrapolate the urban form as a vital sustainable structure, and has become a standard which could measure and evaluate the impact of the application for sustainable criteria. These strategies know as Smart Growth Strategies which include, Development, Design, Transportation, Open & Natural Space Protection, Open Space Creation, Sense of Place, and Urban Community Strategies. Here this search tries to extract the most local standards that consistent with the nature and environment of sustainable urban Iraqi projects in general and Baghdad in particular by reviewing the Smart Growth principles and strategies. However, the aim is to determine the effectiveness and the successfulness of the adopted urban projects in Baghdad in applying the urban sustainability criteria in the one hand, and to extract the most important positive points which serve the local environment and utilize them to establish the foundations for possible urban standards adopted in the evaluation of sustainable urban future projects on the others. Therefore, the most important findings in this research is the possibility of evaluate the performance of sustainable urban projects using SWOT analyses model through examining the internal environment which represented by the Strengths and Weaknesses of each project and external environment which represented by the Opportunities and Threatens of the economic situation, social life and environmental conditions. In conclusion, the search developed a local, comprehensive checklist which adopts the urban sustainability standards in the one hand, and at the same time, it can be used and developed to evaluate the performance of future urban sustainable development projects.

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فاعلية المشاريع الحضرية المستدامة في مدينة بغداد

دراسة مقارنة لمشاريع التطوير المستدام في منطقتي الاعظمية والكاظمية

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يأتي هذا البحث كمحاولة للتقييم والمقارنة بين جودة الاداء المستدام لمشاريع حضرية مستدامة مختارة من مدينة بغداد (منطقتي الاعظمية والكاظمية) عن طريق تطبيق معايير الاستدامة الحضرية ومقارنتها بأستخدام مصفوفة التحليل الرباعي SWOT (والتي تمثل الاحرف الاولى للكلمات S: strengths وتعني نقاط القوى, W : weaknesses وتعني نقاط الضعف, O : opportunities وتعني الفرص في المشروع, T: threats وتعني التهديدات) ويتم ذلك عن طريق الاطلاع على اهم الاستراتيجيات التي استهدفت استقراء الشكل الحضري كبنية حيوية مستدامة وأصبحت معيارا يقاس على أثرها ويقوم عن طريقها مدى تطبيق معايير الاستدامة، والتي عرفت باستراتيجيات النمو الذكي التي تضم وتجمع الاستراتيجيات التطويرية والتصميمية والنقل وحماية المناطق الطبيعية والمفتوحة والتفاعل مع الطبيعة والاحساس بالمكان واحترام الموقع والتفاعل معه واستراتيجيات المجتمع الحضري، وهنا يحاول هذا البحث عن طريق استعراض استراتيجيات النمو الذكي ومبادئه استخلاص اهم المعايير المحلية التي تتلائم مع طبيعة وبيئة المشاريع الحضرية المستدامة في المدينة العراقية عموما وبغداد بشكل خاص، الهدف من ذلك هو معرفة مدى فاعلية ونجاح المشاريع الحضرية المتبنية في بغداد في تطبيق معايير الاستدامة الحضرية المطلوبة من ناحية ومحاولة استخلاص اهم النقاط الايجابية التي تخدم البيئة المحلية والاستفادة منها لترسيخ اسس لمعايير حضرية ممكن اعتمادها في تقييم المشاريع الحضرية المستدامة المستقبلية. ومن اهم ما توصل اليه في هذا البحث هو امكانية تقييم جودة الاداء المستدام لمشاريع حضرية مستدامة بأستخدام مصفوفة التحليل الرباعي SWOT وذلك عند دراسة البيئة الداخلية والتمثلة بنقاط القوة والضعف الخاصة بكل مشروع ومعرفة الظروف الخارجية من فرص ومعوقات تتمثل بالواقع الاقتصادي والاجتماعي والبيئي المحيطة به. وكنتيجة، تم في البحث تطوير مصفوفة مقارنة محلية شمولية تتبنى معايير الاستدامة الحضرية من ناحية، وفي الوقت ذاته بالامكان استخدامها وتطويرها لتقييم جودة الاداء المستدام للمشاريع الحضرية المستدامة المستقبلية.

1-Introduction:

This research sheds the light on urban sustainability and its applied mechanisms in developing countries after becoming the fundamental rule for urban developers' work in developed countries. It depends on applying Smart Growth Strategies as one of the Urban Sustainability criteria on two of selected areas of the city of Baghdad (Adhamiya and Kadhimiya Districts) which have a great attention by the developers and professionals and have experienced serious steps of urban development.

1. Contemporary urban Sustainability and the application of Smart Growth strategies:

Since the emergence of sustainability and sustainable development terms in 1972 and until 1997, scientists seek in various specializations to put sustainability into implementation by emphasizing on the practices that protect nature, biodiversity, air quality, water, land and landscape [10]. Since that, the applications of sustainability have spread very quickly in the developed world that applied to the minor housing projects, and re-development programs, especially in accessing into the energy efficiency, improving infrastructure, and providing vital open spaces. However, it exceeded the level of urban planning and improving environmental aspects to the level of increasing social solidarity and women's participation and supporting partnerships between institutions and society [7]. Moreover, urban planners and designers have addressed those applications within their theories and became the norm for the contemporary urban sustainability. While these application has used to measure the level of sustainable criteria's application in the urban area. Hence, those applications evolved very quickly to take clearly defined directions, principles, and policies named Smart Growth Strategies followed by the finest urban designers of the world and has become an

effective and concrete goal in their urban plans and strategies.

2. What is Urban sustainability and Smart Growth :

According to the European Commission (2006), urban sustainability is defined as the challenge to “solve both the problems experienced within cities and the problems caused by cities”, recognizing that cities themselves provide many potential solutions. However, urban sustainability is used as a desirable state of urban conditions that persists. The concept is often characterized by issues such as the proper use of resources to guarantee a generational equity, protection of the natural environment, minimal use of non-renewable resources, economic vitality and diversity, community self-reliance, individual wellbeing, and satisfaction of basic human needs [10]. Many of these policies applied at Smart Growth and became a direction followed by the planners and urban designer.

Kelsey, 2004 defined Smart Growth as: “a philosophy based on a set of principles designed to guide local communities in their efforts to promote and ensure development activities that yield improved quality of life, environmental sensitivity, economic revitalization, and sense of community. Smart Growth is an effort to avoid future growth patterns that operate independent of a total community vision and result in inconsistent and incompatible neighborhoods, business and industrial corridors, transportation options, and quality of life resources” [8].

While Nelson argued that Smart Growth is an urban strategies use high efficiency urban patterns and managed the natural resources with a lowest budget. It's adopted new criteria that evaluate urban form by the sustainable development dimensions [12].

From these definitions we can say that Smart Growth Strategies adopted from the improving of quality of social life and insuring the sustainable urban development at the residential, commercial or industrial uses its basic goals [2] within some strategies that agreed to unify the general frameworks of them with five strategies which included [16]:

- **Development Strategies:** It is based on smart location and spatial configuration strategies and there connections, with an emphasis on the compactness, high densities, affordable housing, mixed land uses, and the closeness of work and school site from housing. Moreover, its include everything related to the city planning from conservation to re habilitation and land uses zoning as well as the effectiveness of development costs. It's also implicitly included Transit oriented development (TOD)*[6].
- **Design Strategies:** Its include everything related to the design principles like the verity of buildings designs, smart designs, renewable energy investment, sustainable urban design, economic development, create housing opportunities, offered open spaces designs and urban landscape, and implicitly include roads and parking designs [1].
- **Transportation Strategies:** It's Include everything related to the transportation and networks management and demand like Transit-Oriented Development (TOD), road networks and parking designs, motors and pedestrians movements and roads designs. However, its provide designs that ensure transit facilities, and access to remote areas, with an emphasis on the

quality of paving materials and there sustainability [1].

- **Open & Natural Space Protection:** This strategy include open spaces and urban landscape designs, and interference include ensuring biodiversity and forests and the exploitation of public places and re-use of pre-built places as open places and Parks (Brownfields) in an effort to reduce the depletion of natural ground. Moreover, its include implicitly on smart location strategies of water sources proximity and local food production in order to ensure self-sufficiency in whole or in part.[13]
- **Open Space Creation, and Sense of Place:** Its include everything related to on-site interaction from nature conservation at the development to the community participation in the environmental protection [8].
- **Urban Community Strategies:** Its Include ensuring of society rights from the conventions to the laws of what related to previous strategies, as well as the contribution of the community in the development process and the engagement in the group work[6].

3. Smart Growth principles:

Smart Growth strategies derived ten principles which became the bases for action in the developed countries[8], these principles included:

- **Principle 1:** *Mixed Land Uses:* which adopting the strategies of Implementing land use and zoning regulations to encourage mixed uses, create more pedestrian-friendly areas, and reduce reliance on automobiles, from this each neighborhood has a mixture of homes, retail, business, and recreational opportunities [19].
- **Principle 2:** *Compact Building Design:* which encourage growth in existing communities, investments in infrastructure (such as roads and schools) are used efficiently, and developments do not take up new land. Moreover, compact

*Transit-Oriented Development (TOD): is a tool of development that promote smart growth and sustainable economic development, at the same time it feed the demand on the market covering the requirements of social life. the concept was based on the idea of oriented mixed land uses and growing near a major and minor transport nodes connected with high oriented environment to walk, reduce reliance on vehicles, concern of the environment, and community health by using the public transport methods. It has been applied in the USA in more than 100 projects begin by creating a contract of corridors connected with each other with an integrated network weave and weaving around urban fabric housing[3].

development is integrated into existing commercial areas, new town centers, and/or near existing or planned transportation facilities.

- **Principle 3: Range of Housing Opportunities:** These types of development should encourage a mix of housing types (apartments, town homes, single-family) to allow people to remain in the neighborhood as their lifestyle changes. At this kind of development people in different family types, life stages and income levels can afford a home in the neighborhood of their choice [4].
- **Principle 4: Walkable Neighborhoods:** this kind of development provides pedestrian and bicycle amenities that make it easier and more pleasant for people to walk or bike rather than drive. These amenities and design changes can alleviate traffic congestion, and reduce the demand for parking. Furthermore, some of which can be implemented at no additional cost changes. Instead of locating parking between the street and the buildings, requiring pedestrians and bicyclists to navigate through parking lots, parking should be set back behind buildings.[4]
- **Principle 5: Sense of Place:** this development insures foster distinctive attractive communities with a strong sense of place. Smart Growth seeks to the types of physical environments that create a sense of civic pride, and therefore support a more cohesive community fabric. As a result, economic benefits accrue as well; high-quality communities with architectural and natural elements that reflect the interests of all residents are more likely to retain their economic vitality and value over time, create a state tax credit to encourage adaptive reuse of historic or architecturally significant buildings, plant trees throughout communities and preserve existing trees during new construction, create active and secure open spaces, create opportunities for community interaction, and enact clear design

guidelines so that streets, buildings, and public spaces work together to create a sense of place.[6]

- **Principle 6: Preserve Open Space and Natural Beauty:** Smart Growth development respects natural landscape features and has higher aesthetic, environmental, and financial value. Moreover, this kind of growth protects and enhances agricultural lands which provide food security, and employment.[17].
- **Principle 7: Community Involvement:** Seek technical assistance to develop a public participation process. Conduct community visioning exercises to determine how and where the neighborhood will grow. Engage children through education and outreach. Cultivate relationships with schools, universities, and colleges [4].
- **Principle 8: Direction of Development:** Smart Growth directs development towards communities already served by infrastructure, seeking to utilize the resources that existing neighborhoods offer and to maintain the value of public and private investment. By encouraging development in existing areas, communities benefit from a stronger tax base, closer proximity of jobs and services, increase efficiency of already developed land and infrastructure, reduced development pressure in fringe areas, and preserve farmland and open spaces.
- **Principle 9: Multiple Transportation Options:** Smart Growth takes into account the modes of transportation available to employees, visitors, and residents. Proximity of public transportation to a particular development, This kind of growth will reduce parking demand, walkable neighborhoods and bicycle amenities [6].



- **Principle 10: Cost Effectiveness:** Economic developers can improve a city or region's tax base using Smart Growth practices in many ways, like targeting development on idle or underutilized infill sites, and encouraging positive environmental outcomes. For instance, when economic development practices encourage the re-use of previously developed land, more pristine lands can be conserved, and contaminated sites are restored. Similarly, practices like transit-oriented development can help improve air quality by giving people the option to walk, bike, or take transit to destinations [5] Provide financial incentives to aid the development of Smart Growth projects. Engage political support for improved coordination on approval of Smart Growth projects. Display zoning regulations and design goals in pictorial fashion to better illustrate development goals.[6]

4. overview on Adhamiya and Kadhimiya District:

5-1 Kadhimiya District: Kadhimiya district is one of the important holy shrines cities in Iraq. It has a huge historical and religious feature represented by the shrines of Imams Musa al-Kadhim and Muhammad al-Jawad (peace be upon them) which were built in 1515 AD. Kadhimiya District had become a center for tourism not only on the local scale but also on the Arabic and international Muslim world scale. With the Imams shrine, the city has a high traditional residential heritage value, as well as the correlation within the markets' allies, the housing and the shrine arranged the traditional urban fabric as a model of an compact urban Islamic style, see figure (1) [11]

Figure (1) Kadhimiyashrine and the traditional urban fabric of the city

The state has dealt with the task of maintaining the holy city and developed it through several studies. Perhaps the most important development studies of the Kadhimiyais the Mayoralty of Baghdad study 2008-2009 within a contest won by the Diwan Bureau for Architecture. This study came in a competition prepared for the development of Kadhimiyawithin several Scenarios: The first one is the demolition of traditional area and concentrate on the idea of comprehensive development excises toward the shrine as a center. The second Scenario gave the priority to the traditional urban fabric and the historical buildings in the city, while the third consist on combining and balancing between the traditional urban fabric and the importance of the shrine with a comprehensive development. That's why the Mayoralty of Baghdad adopted the third Scenario as shown in figure (2), and for the same reason we will evaluate it within Smart Growth principles.



Figure (2) the winner project of Kadhimiyadevelopment by the Diwan Bureau for Architecture [11]

side of the Tigris River. When Imam Abu Hanifa buried in 150 BC, the district was the large orchard area full of markets, and was located outside Al Mansour retained city. After a while, it started the urbanization and population distribution and Arab tribes began

to build their housing around the shrine of Abu Hanifa cemetery [14] The district has a lot of famous places like: Imam Azm Mosque, Adhamiya Hour, Royal Cemetery, Antar Ibn Shaddad square, royal court, Adhamiya Cornish, and Imams Bridge which established in 1957 instead of the old bridge. The district pretended its name in Abbasid era "Mahallet Abu Hanifa". However, the heritage of Abu Hanifa's shrine is still exists until this day. Moreover, this shrine's has its impact of historic culture of Adhamiyain and their orientations, religious, intellectual, and cultural. This makes the supernovae position civilized and humane prestigious. Moreover, In Adhamiya many scientific schools, universities, houses of literature has spread boards and forums dealing with literature, thought, sociology, politics, history and economy [15]

This district has a recent attention from the Mayoralty of Baghdad and had many competitions to develop the area and sustain it. The last one finished in 2012 and the winner was the Spanish AV62 bureau with a unique development planning which represent by figure (3)



5. Comparison between Kadhimiya and Adhamiya projects to gain sustainability:

6-1 First: evaluate using SWOT analyses model:

Here, we extracted the most important strengths, weaknesses, opportunities, and threats points in both Kadhimiya and

Adhamiya projects to make a comparison between them using SWOT analyses, as it shown in table (1) & (2). Hence, we will shed the light on SWOT analyses model and why using it.

6-1-1 SWOT analyses model:

Using SWOT analyses as an urban management tool comes from the idea of rating the effectiveness of Smart Growth principles in achieving sustainability and successfulness of urban projects. SWOT analysis is a method, or a model or a way to analyze competitive position of the company or the project. It uses to assess both internal and external aspects of doing business, so the SWOT framework is a tool for auditing an organization and its environment.

SWOT is the first stage of planning and helps decision makers to focus on key issues.

SWOT method is a key tool for company or project top officials to formulate strategic plans. Each letter in the word SWOT represents one strong word: **S = strengths**, **W = weaknesses**, **O = opportunities**, **T = threats**.

SWOT model analyzes factors that are internal to business or project environment and also factors that affect the company or the project from outside. **Strengths and weaknesses** in the SWOT matrix represent the **internal environment factors**.

While Opportunities and threats are the **external environment factors**. [18]

6-1-2 Discussion of tables (1) & (2):

- The Investigation of the most important positive factors in Kadhimiya project showed that the project has five positive factors represented by four strengths and one positive opportunity, while the project got seven negative factors represented by two weaknesses points and five threats points, as can be seen in the table (1).

- The percentage of positive factors to the negative once in Kadhimiyaproject attained five to seven. Six of them are internal factors and six other are external.
- Adhamiya project has achieved eight positive factors represented by four strengths and four opportunities for the project, while it found that the project has four negative factors represented by two weakness points and two threat points. As can be seen in the table (2).
- The percentage of positive factors to the negative once in Adhamiyaproject attained eight to four. Six of them are internal factors and the other six are external.
- From the above, we find that SWOT analyses gives us a strong indication of the integrity and quality of Adhamiya development project as it gives a great importance to the investment of its strengths and opportunities points as a positive factors and this will strengthens the project and gives it many opportunities to develop. Furthermore, this integration shows the sustained dimension of its lifetime and its durability.
- Although both of Kadhimiya and Adhamiyaprojects gave a great importance to the balance between environmental (internal and external) factors and gave many opportunities for development, the threat of external factors in the Kadhimiya project reached the highest value, which means there is some weakness in the project which prevents its abilities from avoiding such threats.

6-2 Second: Checklist rating system depending on Smart Growth principles:

Through investigation of how closely and integrity are strengths, weaknesses, opportunities and threats points represented by

SWOT analyses model with the Smart Growth principles, we found that those points are part of Smart Growth Principles and represented them indirectly. Therefore we prepared a Smart Growth Checklist and use it as a measure and rate system to the urban sustainability. At the same time it will test the validity of SWOT analysis model in determining the strength and sustainability of the project. This can be seen in tables (3) & (4) which represent the Smart Growth Checklist Rating Kadhimiya and Adhamiya. Where green dot represents the effectiveness of sustainable design and green dimension while the yellow dot represents a reference to the principle without implementation and red dot indicates represents the negligence of the principle and not taking into consideration.

6-2-1 Discussion of tables (3) & (4)

In Table (3) which represented the Smart Growth Checklist ofKadhimiya project, we find that the positive points to the negative represent 5 to 4 and one neglected for the lack of explicit action of this indicator. While Adhamiya project has achieved rate 8 to 2,without any neglectedpoints. This is shows the successfulness of the Adhamiyaproject in achieving the Smart Growth Principles (comparatively and indirectly) more than the project Kadhimiyaas seen in table (5).

6. Conclusions:

Firstly,from the above, we conclude that both evaluations (SWOT analyses and Smart GrowthChecklist) demonstrate the integrity of the work environment in Adhamiya project to the Kadhimiyaproject. This comes from the few negative points in Adhamiya projectbecause of the clarity of design and its effectiveness. However, this indicates the validityof the Smart Growth checklistin evaluating the effectiveness project and its sustainable dimensions. Moreover this checklist can use as a standard and criteria to

evaluate the performance of future urban sustainable development projects.

Secondly, it's clear that the methodology followed by the research can be applied to all planning and designing levels through some tools suit to the urbanization size. As an example, the strategies of mixed land-uses, which is considered a cost-saving tool, and providing a socioeconomic dimension, appear at the urban level in different ways and styles. As we can see, Kadhimiya planning sought to achieve integration between the religious and social activities while planning Adhamiya planning sought to achieve integration with the activities surrounding the study area. However, if we moved to another level of urbanization like the local level we can see that the concentration on the walkable, pedestrian areas has become one of the principles of evaluation. While moving to another level as the neighborhood design level, the establishment of the community center near the basic services, the hierarchical network of transportation system, and the open spaces creation and more, encourages the walkability, contributes reducing dependence on the car, and leads to energy saving.

Thirdly, the evaluation processes (SWOT and Smart Growth) for the elected projects showed that increasing the attention to apply the concept of sustainability is a proof that cities planning and urban designing are no longer isolated from the environmental issues, these sectors are the most important exploiters of natural resources such as land, materials, water and energy, as well as the construction operations which result in large amounts of pollution and solid waste.

Finally, looking at the environmental situation of Baghdad city and the increasing

demand to urban projects, leads to the urgent need to apply the urban sustainability planning concepts and indicators. Moreover, the city of Baghdad is facing major challenges with the urban sprawl for the high population and lack of land. All of these require a re-examination not only in current models of urban growth, but in the strategies, policies, methods practices, and responsibilities especially by academics.

7. Recommendation:

From all the Foregoing data and Conclusions we recommend:

- Create an urban development management system. This device shall establish procedures for the implementation and receives proposals for evaluation. It will also sets benchmarks and indicators through which the evaluation and measurement to the performance of the sustainable projects will be achieved.
- Take advantage of the Iraqi experiences and the available researches in this field, and approached the relevant departments to follow the right environmental and sustainable ways in the planning, design and construction processes, such as the Municipality of Baghdad and the Ministry of Construction and Housing and Building Research Center. Furthermore, contracting with companies that executing environmentally friendly projects and adopting the standard of Smart Growth checklist to evaluate construction projects and buildings will support the green developers and protect environment.
- Encourage private sector in the investment of urban development projects through the provision of land and utility services and the issuance of standards and indicators to evaluate and monitor the efficiency, quality, safety, and public health.
- Develop a structural plan to regulate the relationship between the mayoralty of Baghdad and municipalities to guide the

Smart Growth and development trends in the city.

- Support the community participation in the debate and negotiations process of local plans to take an active role in the transparency of performance.
- The most important recommendations for the establishment of the sustainable environment concept is the Conservation ways for to construction and housing, taking into account sustainable development, which requires the use of existing resources without compromising the necessary resources for future generations.
- From the perspective of professional and institutional education, and to create environmental and economic solutions to the problems which faced by the construction sector, we urgently need to change the traditional patterns used in the planning and design and implementation of our buildings to make them more sustainable. However the ways to make this change comes from the educational process planning and architecture departments, and continue in practicing through continuing, training and vocational training.

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Table (1) Kadhimiya SWOTanalyses Resource: the researchers			
	Positive factors	Negative factors	Environmental results
	Strengths	Weaknesses	→
Internal Environment	1. Mixed land uses were prepared in the project's plans. 2. The plan sought for the development of residential areas and services. 3. Attention was taken to pedestrian movement areas. 4. Achieve completions of the urban fabric of the project.	1 The project has adopted the economic factor and neglected the social factor. 2 Lack of development of the riverbank	6
External Environment	Opportunities	Threats	
	5 The study area was linked with the public transportation network of the city.	3 The study area wasn't linked with neighborhoods 4 Lack of access to the Tigris River. 5 The design maintained only 4.4% of the housing old fabric. 6 There is no mechanism to connect with city services network. 7 lack of implementation with the cost allocations of investment	6
Factors results ↓	5	7	







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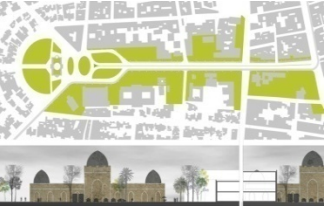
Table (2) Adhamiya SWOT analyses Resource: the researchers			Environmental results →
	Positive factors	Negative factors	
Internal Environment	Strengths	Weaknesses	6
	1. The project adopted economic factor and social factor. 2. Attention was taken to pedestrian movement and walkable areas. 3. Development of riverbank. 4. Rehabilitation of public areas.	1. The general plan wasn't prepared for mixed land uses. 2. The project wasn't sought for the development of services areas.	
External Environment	Opportunities	Threats	6
	5. The study area was linked with the road network for the city 6. Exploitation of the Tigris River and linking with neighborhoods. 7. Cost of implementation acceptable for the investment. 8. Redevelopment and improving residential quality.	3. There is no mechanism to connect with city services network. 4. There wasn't multiple choices for transportation and direction of development	
Factors results ↓	8	4	


Table (3) Smart Growth Checklist
Rating Kadhimiya
Resource: the researchers





















	Smart Growth Principles	Dealing with Principle	Didn't taken in consideration	Mentioned but didn't taken in consideration	Well design	Figure
1	Mixed Land Uses	The Scenario study aimstoexpandthespaces urroundingtheShrinein a coherentwiththe surrounding areas,with the integration ofreligiouseventsandfunction swithinacomprehensiveandho listicsystemwiththeurbanstud y area			●	
2	Compact Building Design	Proposed plan was developed to rehabilitate urban areas			●	
3	Range of Housing Opportunities	thedesignmaintainedonly4.4 % oftheold residential fabric		●		
4	Walkable Neighborhoods	pedestrians movement Treatment areas include : - The development of the corridors and urban areas with traditional interfaces. - The introduction of specialized processes for green areas. - The Provisionofshaded corridors by umbrellas with a mechanical folding - The development of palm trees in the movement axes.			●	

	Principle	Dealing with Principle	Didn't taken in consideration	Mentioned but didn't taken in consideration	Well design	Figure
5	Sense of Place	All land was invested	●			
6	Preserve Open Space and Natural Beauty	Lack of development of the riverbank	●			
7	Community Involvement	social factor has been Neglected	●			
8	Direction of Development	Free and Empty space has been exploited in finding service buildings, in order to achieve completions of the urban fabric of the project			●	
9	Multiple Transportation Options	The study dealt with transportation systems (metro transport, river transport and rail) in order to achieve efficient and effective system of transfer to the Kadhimiya			●	
10	Cost Effectiveness	Neglected	●			

Result		4	1	5		
Table (4) Smart Growth Checklist Rating Adhamiya Resource: the researchers						
	Principle	Dealing with Principle	Didn't taken in considerat	Mentioned but didn't taken in considerati	Well design	Figure
1	Mixed Land Uses	The projects focused on the internal relations of Adhamiya raise the rehabilitation of public spaces and improving residential quality from possibility and participatory policies that encompass the various social and economic processes linked to.				
2	Compact Building Design	Neglected				
3	Range of Housing Opportunities	Neglected				
4	Walkable Neighborhoods	The Reformation of pedestrian movement corridors with different kinds and speeds will achieve comfort for citizens, and will design as a landmark to achieve clear communication and understanding between communities.				

Rating Adhamiya	Principle	Dealing with Principle	Didn't taken in consideration	Mentioned but didn't taken in consideration	Well design	Figure
5	Sense of Place	the study is propose the revaluation of the most important buildings through rehabilitation and redevelopment by surrounding urban space, as long as this axis give the image of dignity and status that allows read it as central to the articulation and growth of Adhamiya .			●	
6	Preserve Open Space and Natural Beauty	<p>Allow citizens to descend the Tigris Adhamiya through a gentle slope of vegetation and water to the river walk.</p> <p>In between these tours are the cultural and leisure facilities. Buildings that are coupled to the front slope and give both the river and the neighbourhood of Adhamiyaa</p>			●	
7	Community Involvement	<p>One of the most important areas that deal with culture is civil axis. This axis talks about of strengthening, articulation and coordination of civil and cultural power in Adhamiya.</p> <p>The project also focuses on the rehabilitation of public areas and improve residential area, Which contribute to openness and partnership between the social and economic events brightest</p>			●	

Rating Adhamiya	Principle	Dealing with Principle	Didn't taken in consideration	Mentioned but didn't taken in consideration	Well design	Figure
8	Direction of Development	The Adopted plan approach to identify, arrange, and organize the movement in Adhamiya, by providing many points allow the accessing to various neighborhoods of Adhamiya, It will also work on developing a system to regulate the flow of pedestrians' movement and vehicles flow. As part of a large scale, the plan sought to the strengthening between Kadhimiya shrine and Adhamiya mosque.			●	
9	Multiple Transportation Options	The study focused on the development of pedestrian lanes and streets for cars with different kinds of paths' design.			●	
10	Cost Effectiveness	The project proposes the adoption of open style of working project management, through the establishment of the Project Management Office which operates according to the experienced methods, which is a guarantee the implementation of the project. In addition this is will allow the best solutions to address the significant shortage of infrastructure to the Adhamiya district.			●	
Result			2	0	8	

Rating Adhamiya			Table (5) Smart Growth Checklist Resource: the researchers	Rating Kadhimiya		
*1	*2	*3		*1	*2	*3
			<i>1. Mixed Land Uses</i>			
			<i>2. Compact Building Design.</i>			
			<i>3. Range of Housing Opportunities.</i>			
			<i>4. Walk able Neighborhoods.</i>			
			<i>5. Sense of Place.</i>			
			<i>6. Preserve Open Space and Natural Beauty.</i>			
			<i>7. Community Involvement.</i>			
			<i>8. Direction of Development.</i>			
			<i>9. Multiple Transportation Options.</i>			
			<i>10. Cost Effectiveness.</i>			
2	0	8	Results	4	1	5