



Aswan Faculty of Engineering  
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School of Art, Design and Architecture  
Department of Architecture and 3D Design

**“The Incorporation of Over-Head Imaging-Based  
Approach in the Process of Improving the Visual  
Image of the City Centre”  
(Assiut City Centre as a Case Study)**

**Ph.D. Thesis**

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*A dissertation submitted for the degree of*

## **Doctor of Philosophy**

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*To the soul of my parents who  
taught me how to appreciate work,  
knowledge and life.*

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# Thesis Summary

The development of aerial and satellite photography and the spread of high observation locations have increased the potential of observing the city from overhead. The spread of tall buildings, over bridges, elevated and aerial means of transportation and the use of roofs for different purposes has become a common feature of modern city life. Consequently, more people now have the opportunity to observe the city from above.

What we observe in the contemporary hyper-visual cities is a greatly intensified form of urban development and vertical growth. The problem which is addressed by this research is that, as the view angle becomes wider and wider, some unpleasant and unexpected visual aspects related to horizontal surfaces such as roofs and floors become more visible. Therefore it is crucial that, the incorporation of the concept of over-head imaging as a method of city perception and not just as a physical tool in the urban analysis and master planning should be considered. The deteriorated over-head image of most contemporary cities is a result of ignoring the concept of over-head imaging as a significant factor and focusing on improving the visual image from the street level. So this research aims to find how the quality of the image of the city centre can be achieved depending on a list of applicable criteria and design guidelines which consider both the image of the city from street level (the human eye perspective) and from higher levels of vision (over-head perspective). The contemporary city with its great diversity of functions, life styles and values can be imaged by various methods. The integration between the different observation points and the adaptation with the changes in the methods of city perception should be taken in account.

Although the area of city centre should have the most interesting and attractive urban objects and scenes compared to other areas in the city, most contemporary city centres face problems related to legibility and visibility. Various regeneration projects have been implemented to develop the central areas of cities but most projects concentrated on the economical, functional and environmental factors rather

than the visual and perceptual issues so these projects lack the comprehensive view of improvement.

Insufficient research has been carried out concerning the methods of city perception; their changes, variables, requirements and how they can influence the city design. How the visual profile of the city can be read or experienced depending on the changes in the locations of observers, the height of vision or the view angle is an important question which has not been answered in the adopted investigations. In spite of the abundance of literature about using aerial photographs as visual references which can provide city designers with large amounts of essential information about the urban areas, little research has been written about how such image can be utilized effectively as a perceptual and conceptual tool. This thesis introduces a proposed approach for improving the visual appearance of the city centre taking into account incorporating the concept of over-head imaging as a way of city perception rather than as physical photos. This concept should be considered in all the stages of visual urban design starting from urban analysis and ends by the improvement action plan.

The most efficient methodologies to carry out this research are the descriptive, analytical and practical methodologies. The research may contribute to knowledge by achieving its aim to engage the concept of over-head imaging in the processes of analysing, assessing and improving the visual image of the city centre with a focus on Assiut City Centre as a case study.

The main contributions of the present research can be concluded as following:

- ***The research introduces a detailed definition of the concept of over-head imaging that covers many theoretical issues which help in understanding the investigated concept and its importance in the field of visual urban design and improvement.***
- ***The research develops a link of knowledge by analysing the already applied approach for improving the image of the city centre in UK in terms of concepts and methodologies and improvement options. This link can be beneficial in order to improve the rigid urban improvement system of Egyptian cities and to make use of the positive impacts of globalization***

- ***The suggestion of a proposed approach*** which considers improving the visual image of the city centre from different perspectives by embodying the concept of over-head imaging in the three stages of the process of visual improvement of the city centre image.
- ***The use of the case study*** to apply the proposed approach practically in order to improve the visual profile of Assiut City Centre.

In the process of attaining the research aims, many issues are raised and several aspects are investigated utilizing figures, tables and charts that enable other researchers to gain a better understanding of the discussed issues. Google Earth, Visio and Endnote are the software applications which are used in this thesis.

***This thesis consists of the following seven chapters (See Figure 1.4):***

**Chapter 1 (Research plan):**

The first chapter includes the research plan in terms of research questions, hypothesis, objectives and aims.

**Chapter 2 (Introduction about the concept of over-head imaging of the city):**

This chapter introduces the concept of over-head imaging of the city and clarifies the importance of over-head images as a conceptual, perceptual and physical tool in the process of visual improvement of the city. This chapter helps to understand the definition and properties of the over-head images. Furthermore this chapter includes the literature review of the related studies.

**Chapter 3 (The image of the city centre: physical components and visual attributes):**

The third chapter investigates the area of city centre in terms of the urban components

of its image, the visual attributes of the observed objects and their meanings when they are observed from overhead.

**Chapter 4 (The British experience of improving the visual image of the city centre):**

Chapter four clarifies the trends and policies of city centres improvement programs in UK in order to identify the lessons which can be learnt from the applied approaches

for improving the British central areas. By analysing examples of British City Centres (London, Sheffield and Leeds), the methodologies, concepts and improvement options are clarified.

**Chapter 5** (*Embodying the concept of over-head imaging in the process of improving of the visual image: A proposed approach*):

This chapter introduces a proposed approach which incorporates the concept of over-head imaging in the urban analysis, assessment and improvement of the city centre image. The aim of the proposed approach is to achieve a qualitative image of the contemporary city centre from different observation points and to use the over-head photos as a helpful in the different stages of the proposed approach. The already adopted approaches for analysing and assessing the visual image are investigated to demonstrate to what extent these approaches consider the concept of over-head imaging as a factor which can affect the proposed improvement interventions. This approach identifies certain criteria which affect the quality of the visual image and introduces guidelines for improving the visual appearance of the city from different perspectives.

**Chapter 6** (*A practical example: Improving the visual image of Assiut City Centre*):

This chapter tries to apply the proposed approach for improving the image of the city centre to the area of Assiut City Centre. This practical part of research introduces information about Assiut City and the reasons for selecting the centre of this particular city as a case study. The research suggests new boundaries for the central area of Assiut. The proposed approach of urban analysis has been applied to analyse the image of Assiut City Centre. This analysis includes 2D and 3D analysis, permeability analysis, legibility analysis and the analysis of high observation points. Through applying the proposed approach of analysis, the visual and urban problems of Assiut City Centre are identified and the streets network, built objects and public spaces are assessed here using the proposed approach of assessment which is clarified in chapter five.

Chapter six clarifies the improvement objectives, vision and the proposed interventions taking into account the over-head perspective as a major criterion. The



improved area demonstrates a qualitative image from the street level and from the over-head.

**Chapter 7** (*Conclusion: Contributions, results and recommendations*):

This chapter concludes the research outcomes and the recommendations regarding the importance of incorporating the concept of over-head imaging in the process of urban improvement of the city centre.

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# ***Chapter 1***

## **Research plan**

# Chapter 1

## Research plan

### ***Introduction:***

The central area of any city is more than a collection of buildings, a network of streets or a place for ceremonial and prestigious events. It has a unique spiritual characteristic which comes from the meanings of places and the impressions which are created in the mind of users. It can be noticed in our contemporary cities that the technical and architectural revolution produced new aspects of the city image and the ways of perceiving it as shown in figure 1.1. The great development of building materials and the advanced ways of construction have produced a huge number of high-rise buildings in most of the modern cities. The elevated and the aerial means of transport such as aeroplanes, telefrics and balloons have introduced comprehensive and panoramic views from above which can be considered as a new method to observe and read the composition of the contemporary hyper-visual city. The over-head image of the city has certain attributes and aspects and has a great role in the field of visual urban design of the city.

The over-head images are now available through different means of media and can be observed in different occasions as shown in Figure 1.1. The development in the techniques of urban analysis by using aerial survey and virtual models - which can be seen from different observation points - instead of using traditional methods of surveying and photographing from street level has made the over-head images stand as an effective tool in the fields of urban design and urban planning. At the high visual planes, the observer can perceive the parts of the city through a very wide view angle.

The city centre can be considered as the most important district of any city for many reasons: Firstly, the variety of land uses, facilities, human activities and public services. Secondly, the numerous circulation lines which include pedestrian paths and the

centres of public transport. Thirdly, the city centre can be viewed from several observation points because of the central location of this district in most cities and the concentration of high-rise buildings and flyovers in this district particularly which increase the opportunity to observe the over-head image of this area. Fourthly, the area of city centre has usually the most interesting urban objects and scenes which attract a large number of observers to view the image of this district and to recognize the character of the city and its identity through the image of its centre.

The integration between the diverse observation points from the street level and from higher levels supports both qualities of visibility and imageability. The concept of over-head imaging can improve the spatial knowledge of the observers so such image should be incorporated into the processes of urban design and visual improvement of the declining central area.



*Figure 1.1: The revolution of aerial transport means and the ways of construction increases the possibility of observing the city from high levels of vision.*

### **1.1 Research problem:**

The area of the city centre is a part of the national and civic heritage and provides a sustainable focus for a wide range of community activities including shopping, business, recreation and entertainment, cultural pursuits and transport. The area of the city centre



can also be an important expression of civic pride and local identity. Therefore the central areas should be promoted as attractive places in which people can live and work.

Because we use cities, most of us already possess a good groundwork for understanding and appreciating their urban forms. Some of the difficulties of comprehending the image of the contemporary cities come from; the shortage of enough visual reinforcements which emphasize a clear spatial order and, worse still, from unnecessary visual contradictions which mostly have unpleasant chaotic visual effects and fight to attract the observer's attention (URBED, 1997).

As the viewer observe the centre of the city, where there are spatial and visual relationships between the architectural elements (buildings - spaces - elements of furniture - movement axes....), the viewer should be able to understand the physical components of the city centre image, the function of the city, the visual attributes and other characteristics that give the central district its unique identity. As the complexity of the images of the contemporary cities increases, the images tend to be poorly experienced and the observers usually lose the sense of orientation.

Modern cities display many ambiguities, confusions, discontinuities, significant activities are hidden from sight, historical and natural setting are obscured and the city is very rigid and lacks openness (Banerjee and Southworth, 1990: p.101). As the view angle becomes wider and wider, some unpleasant and unexpected visual aspects of the city related to horizontal surfaces such as roofs and floors would be more clear and visible. Based on the idea of Banerjee that, perceivable and organized visual form of city objects is required for efficient function (Banerjee and Southworth, 1990: p.101), considering the over-head image as a method of city perception not as just a physical tool in the urban analysis, assessment and visual improvement processes is very crucial.

The general problems which face the city centres and affect their over-head images can be classified into problems related to the observed objects, problems related to the improvement policies or problems related to the environmental conditions which affect

the clarity of the image as shown in Figure 1.2. Assuit is seen to have widespread problems, most notably in the perpetuation of conflicting spatial patterns in various parts of the city (Refaat and Brown, 2009:p.077.10). Planning, architectural and traffic problems and the performance of the city from the functional perspective are the focus of many studies (Abd-El Whab, 1994). Some investigations focus on the visual pollution in the Egyptian cities and suggest various theoretical recommendations to achieve qualitative image but it did not include any practical reflections or specific mechanisms for the implementation of the proposals (Al Zeidy, 1996).



*Figure 1.2: The problems of the over-head image of the Egyptian city centres related to the observed objects, environmental conditions and the already implemented improvement projects (<http://www.t2.ftcdn.net>)*

Based on reviewing the related literature, this research addresses the problem that, the concept of city imaging from above as a way of city perception is ignored or not enough considered in the applied approaches of city designing, image analysis, assessment and improvement. Most of the applied improvement approaches for the visual image of the city centre focus on the image from the street level (Mahrous and Abd-El Magied, 2006) (Mahmoud and Yousef, 2007) and do not pay enough attention to the image of the proposed area when it is observed from higher levels of vision (Ahmed, 2004). It is found that there is gap in knowledge regarding this perceptual perspective which adds new criteria and requirements to the currently used approaches of city centre design and improvement. To fill this gap, the methods of urban design should adapt to the recent changes in the techniques of city imaging and perception. Based on this principle, the approaches of improving the city centre image should be developed to consider the integration between different methods of the city perception.

### **1.2 Research questions:**

The main question of this research is:

***How the visual appearance of the city centre can be improved by incorporating the concept of over-head imaging in the improvement process?***

To form the answer of the main research question, it is important to answer the following secondary questions:

- What are the different types of over-head images, what are the factors which affect the quality of over-head images and what is the importance of such images in the field of urban design?
- What are the physical components which can be observed through the over-head image of the city centre and what are the main visual attributes attached to these components?
- To what extent the current methods and trends of city centre improvement consider improving its visual appearance from over-head?
- What are the lessons to be learned from the British experience of improving the visual image of the city centre?
- What are the already used approaches for analysing, assessing and improving the area of the city centre?
- How the concept of over-head imaging can be incorporated in the urban analysis, assessment and improvement of the city centre's image through a proposed approach that can help to achieve a qualitative visual image?
- How the proposed approach can be applied to the study area (Assiut City Centre) in order to solve its current visual problems and improve its image from the street level and from higher levels of vision?

### **1.3 Research hypothesis:**

Regarding the evolution of city imaging, Fattahi and Kobayashi have mentioned that,

“We as designers should take into account the continuous evolution of the world and learn to accept it, so as not to be left behind”. They stated that “each new era offers its special infrastructures that can be used to improve our cities appropriately if they are comprehended properly” (Fattahi and Kobayashi, 2009: p.69).

Observing the image of the city from high levels of vision is now available through many different static observation points and through moving by different means of aerial transport. The over-head images of the city centre indicate that the present visual appearance of the city centre needs to be improved to support the sense of identity and to meet the criteria of qualitative urban image. Aerial photographs have been used to paint a vivid picture of how developing patterns and differing land use regulations lead to significantly different manifestation of the built environment with various implications for cultural and natural landscape (Campoli, 2002). Fitzgerald in 2004 studied the aerial photos as a physical tool which has many advantages and applications and he concluded that, aerial photos are useful for illustrating land uses patterns, connections between natural and built features and the overall context.

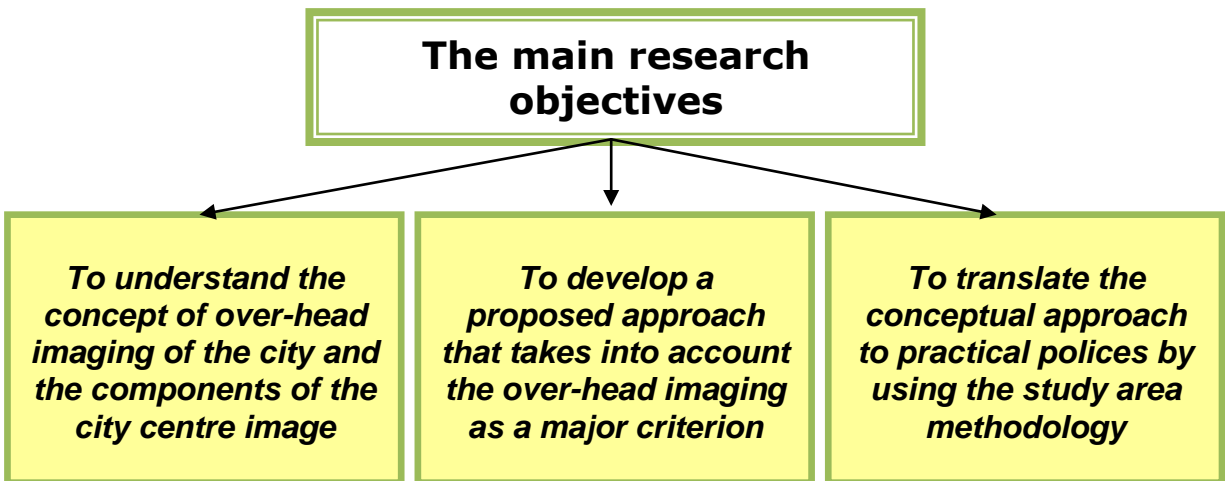
This research is based on two ideas; the first is that if the over-head imaging as a way of perceiving the city is incorporated in the field of urban design, a comprehensive approach which takes into account the integration between viewing the contemporary city from different levels of vision would be achieved. The second idea is that the over-head photo -as a physical tool- has an effective role in the field of urban design and improvement of urban areas.

#### **1.4 Research objectives:**

This research aims to answer the main research question about the role of the over-head imaging as a perceptual method in the process of improving the visual appearance of the area of the city centre (See Figure 1.3). The research objectives are as follows:

- To investigate the term “Over-head image” and the issues surrounding it by identifying the physical components of the over-head image of the city centre.

- To demonstrate the importance of over-head images and how they can be used as physical, perceptual and conceptual tool to develop a meaningful and comprehensive image of the city centre.
- To study the adopted approaches which are used to analyse, assess and improve the city centre's image.
- To discuss the recent approaches which have been applied in UK to improve the visual image of the city centre district.
- To develop a proposed approach based on incorporating the concept of over-head imaging in the three stages of urban design (analysis, assessment and improvement).
- Use the outcome of the urban analysis of the current study area to set the improvement policies and prepare an actions plan for the proposed Assiut City Centre.



*Figure 1.3: The main research objectives*

### **1.5 The structure of thesis:**

***This thesis consists of the following seven chapters*** (See Figure 1.4):

**Chapter 1** (*Research plan*):

The first chapter includes the research plan in terms of research questions, hypothesis, objectives and aims.

**Chapter 2** (*Introduction about the concept of over-head imaging of the city*):

This chapter introduces the concept of over-head imaging of the city and clarifies the importance of over-head images as a conceptual, perceptual and physical tool in the process of visual improvement of the city. This chapter helps to understand the definition and properties of the over-head images. Furthermore this chapter includes the literature review of the related studies.

**Chapter 3** (*The image of the city centre: physical components and visual attributes*):

The third chapter investigates the area of city centre in terms of the urban components of its image, the visual attributes of the observed objects and their meanings when they are observed from overhead.

**Chapter 4** (*The British experience of improving the visual image of the city centre*):

Chapter four clarifies the trends and policies of city centres improvement programs in UK in order to identify the lessons which can be learnt from the applied approaches for improving the British central areas. By analysing examples of British City Centres (London, Sheffield and Leeds), the methodologies, concepts and improvement options are clarified.

**Chapter 5** (*Embodying the concept of over-head imaging in the process of improving of the visual image: A proposed approach*):

This chapter introduces a proposed approach which incorporates the concept of over-head imaging in the urban analysis, assessment and improvement of the city centre image. The aim of the proposed approach is to achieve a qualitative image of the contemporary city centre from different observation points and to use the over-head photos as a helpful in the different stages of the proposed approach. The already adopted approaches for analysing and assessing the visual image are investigated to demonstrate to what extent these approaches consider the concept of over-head

imaging as a factor which can affect the proposed improvement interventions. This approach identifies certain criteria which affect the quality of the visual image and introduces guidelines for improving the visual appearance of the city from different perspectives.

**Chapter 6** (*A practical example: Improving the visual image of Assiut City Centre*):

This chapter tries to apply the proposed approach for improving the image of the city centre to the area of Assiut City Centre. This practical part of research introduces information about Assiut City and the reasons for selecting the centre of this particular city as a case study. The research suggests new boundaries for the central area of Assiut. The proposed approach of urban analysis has been applied to analyse the image of Assiut City Centre. This analysis includes 2D and 3D analysis, permeability analysis, legibility analysis and the analysis of high observation points. Through applying the proposed approach of analysis, the visual and urban problems of Assiut City Centre are identified and the streets network, built objects and public spaces are assessed here using the proposed approach of assessment which is clarified in chapter five.

Chapter six clarifies the improvement objectives, vision and the proposed interventions taking into account the over-head perspective as a major criterion. The improved area demonstrates a qualitative image from the street level and from the over-head.

**Chapter 7** (*Conclusion: Contributions, results and recommendations*):

This chapter concludes the research outcomes and the recommendations regarding the importance of incorporating the concept of over-head imaging in the process of urban improvement of the city centre.

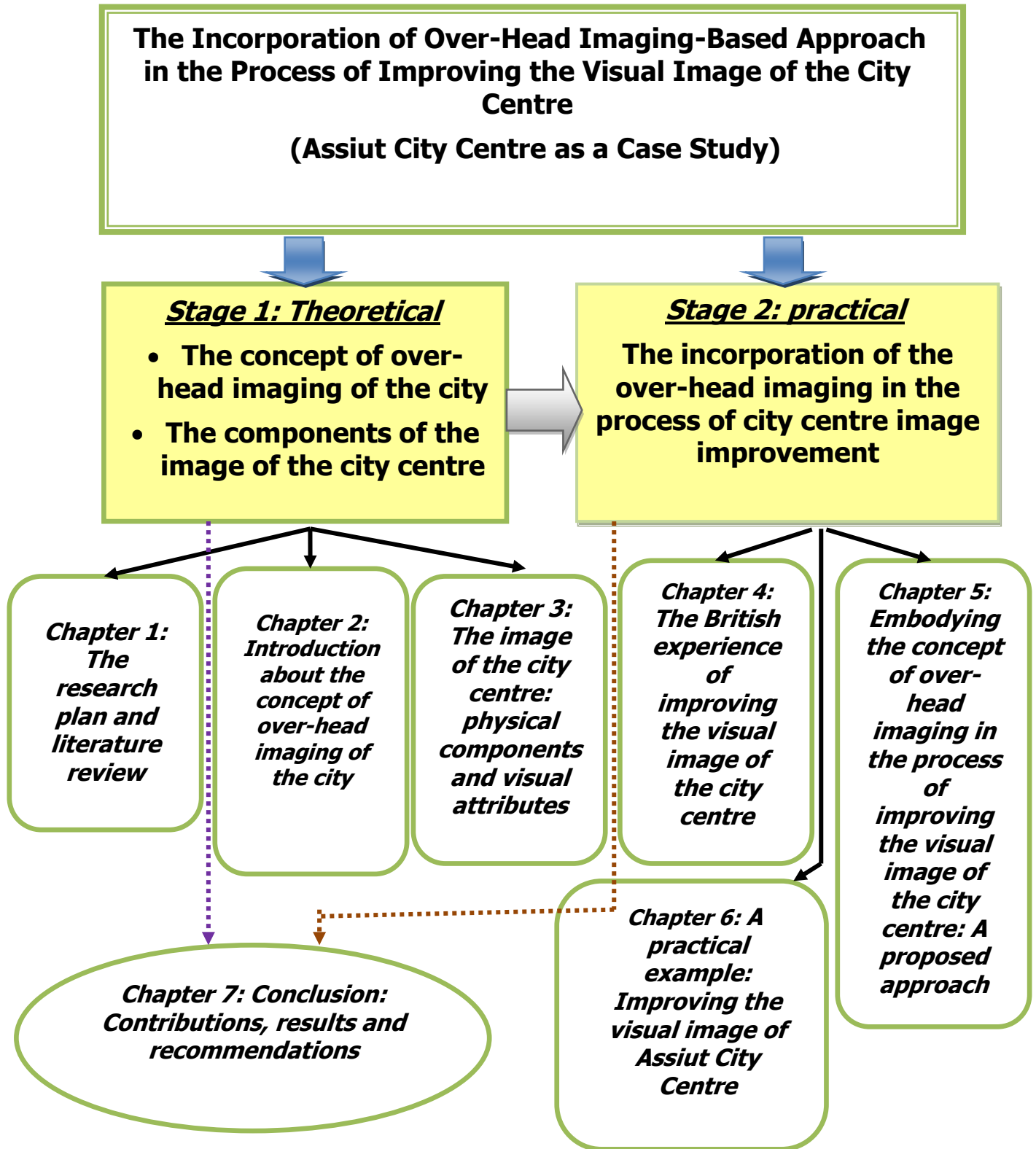


Figure 1.4: The structure of the thesis



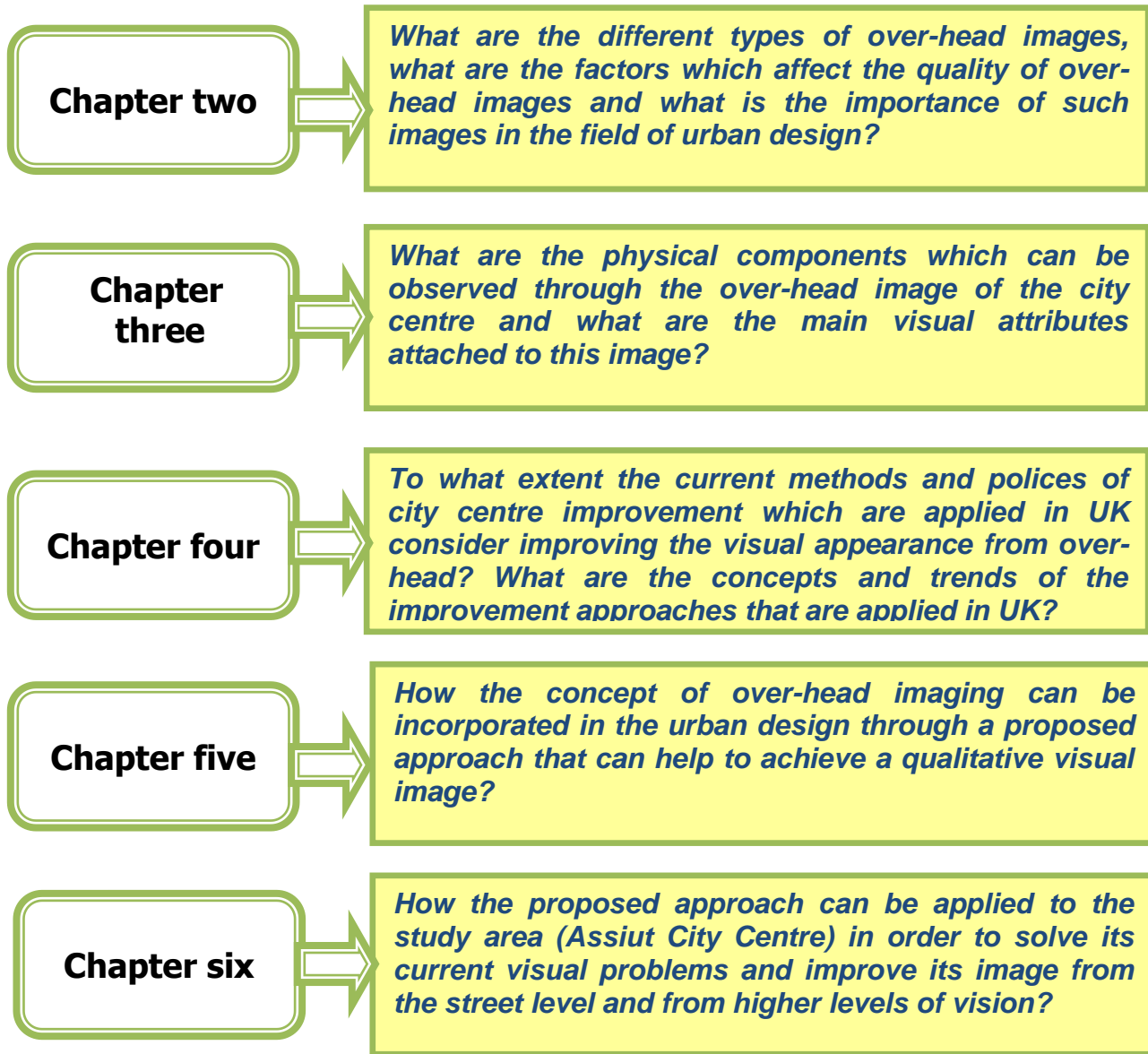


Figure 1.5: The research questions which are answered through the thesis

### **1.6 Research methodologies:**

This research relies on the integration of both theoretical and practical investigations.

The descriptive methodology is used in this research to build a basis for the conceptualisation of the term “over-head imaging” by explaining the types and components of the over-head image and its visual attributes, classifying the main

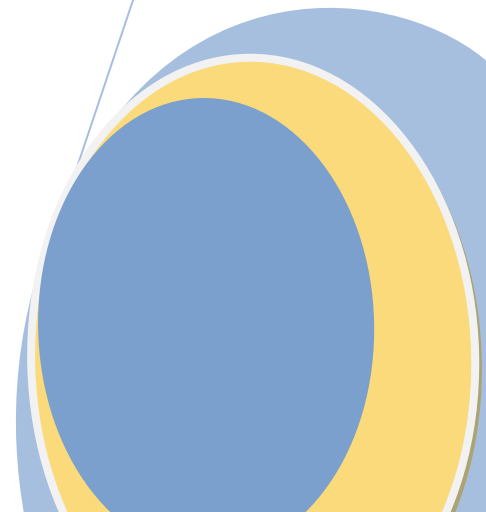
factors which affect the over-head image of the city and categorizing the points of interest which catch the attention of observers.

The analytical method is used in this research to analyse the currently used approaches and methods for improving the image of the city centre and to analyse examples of improvement projects which have been applied in UK. This method is also used to analyse the current image of Assiut City Centre to determine its urban problems and weakness areas.

Though the practical stage of this investigation, the proposed approach for improving the image of the city centre is applied to the image of Assiut City Centre in order to improve its visual appearance from different perspectives. The theoretical principals of the proposed approach are translated by this research methodology to practical steps in order to incorporate the concept of over-head imaging in the processes of analysis, assessment and improvement of the image of Assiut City Centre.

# *Chapter 2*

**Introduction about the  
concept of over-head  
imaging of the city**



# Chapter 2

## Introduction about the concept of over-head imaging of the city

### **2.1 Literature review:**

"Standing on the shoulders of giants" is a famous phrase used to describe academic research.

#### **2.1.1 Goal of the literature review:**

The main goal here is to review the previous literature in order to identify their findings regarding the following issues:

- The theories that have been/are used to explain the image of the city; its components, visual attributes and the methods of perceiving this image, the qualitative image of the city centre and how to achieve it, the importance of the over-head images and its role in the field of urban design.
- The methodologies which have been used to improve and assess the central areas of British cities and the main policies attached to these approaches.
- The concept of over-head imaging and how it is linked to the improvement of the image of the city.
- The image of the Egyptian city with a focus on the study area (Assiut City Centre).

#### **2.1.2 Methodology of the literature review:**

While there are different approaches for writing the literature review, the conceptual approach is used in this review for categorizing the selected references into three categories. The first group of references investigates the concept of city perception and city imaging. The second group studies the concept of urban development and urban qualities of the city centre and the third category considers the vertical growth of the contemporary cities and the concept of over-head imaging. Each category has a list of relevant references which is organized by the chronological method.



Figure 2.1: The sequential stages of conducting the literature review

The literature review begins with the determination of the themes which are relevant to the research and will guide the review. These themes influenced the selection of references and their classification as relevant or irrelevant data. This literature review refers mostly to books and journal papers in addition to reports and websites which are relevant to the primary issues of the research.

### 2.1.3 Thematic literature review:

The reviewing of relevant publications is based on three themes as shown in Figure 2.2.

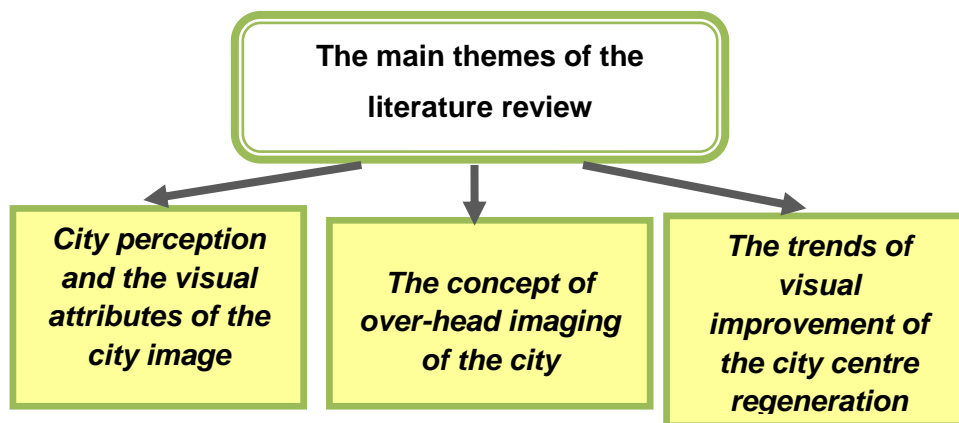


Figure 2.2: The conceptual framework of the thematic literature review

#### 2.1.3.1 First theme: City perception and the visual attributes of the city image:

Keywords: Urban design, visual urban design, city imaging, city perception

The concept of city imaging was introduced by psychologists who worked on the acquisition of spatial knowledge. The term “cognitive mapping” or “mind’s eye” (Tolman, 1948) was introduced to refer to internal representation of spaces (Downs, 1973) or what Norman (Norman, 1988) called “Knowledge in the head”.

While research about the cognitive process, mental representations and ways of interpreting the city image started during 1930’s and 1940’s, it has become more popular today. The most influential work was that of Kevin Lynch who identified in his book “*The Image of the City*” (1961) five elements to be essential in the construction

of the cognitive map of the city. His work, especially his theory of city form and his key findings related to human perception of the city and how they should affect city design, was highly influential. He compared three American cities; Boston, Jersey City and Los Angeles and looked at how people orient themselves in these cities. A central notion in this book is that of legibility or what he called it "imageability". Lynch showed that, urban space is not just composed of its physical characteristics but equally by representations in mental images. However Lynch has determined well known five components (Paths, nodes, districts, landmarks and edges) for understanding and explaining the conditions of the image of the city, these components are still just tools which can be used in many different ways to analyse the image and express its particular conditions or problems (Lynch, 1961). Lynch recommended through his writing that, urban designers should design the city in such a way that it gives room for moving, mapping, shaping and remembering. First, people should be able to acquire a clear mental map of their urban environment. Second, people should be able to learn how to navigate in this environment. Third, people must be able to operate and act upon their environment. It is noticed that, all mental maps which were drawn by the selected sample of observers were over-head maps which proves that, this kind of perspective is the most understood image which can be learned and remembered to illustrate the surrounding urban environment. It can be argued that, there is a relation between Lynch's approach of understanding the city through five main components and observing the city from high levels of vision. Because the panoramic views demonstrate the five elements in a coherent pattern and the interrelations between these elements become clearer so the image of the city becomes more legible.

Gordon Cullen's work on urban design which was presented in his book "*Townscapes*" in 1971 in Oxford employed a method of representation called 'Serial Vision' with certain theoretical implications. His techniques consisted largely of sketchy drawings that conveyed a particularly clear understanding of his ideas and had a considerable influence on subsequent architectural illustration styles proving to be one of the most popular books on urban design in the 20th Century. But Cullen's sketches were based mainly on viewing the city from the street level and moving through streets and spaces to recognize the most important features of the city.

Therefore, many concepts such as serial vision, vistas, enclosure and openness and other ideas can have a different meanings in the over-head images of the city.

Regarding what urban designers should know, Anne Vernez Moudon has considered Cullen's approach. Moudon has argued, "*This work emphasized the visual aspect of the environment, which is seen as a stage set or a prop of human action*" (Moudon, 1992: p.446).

Cullen's summarized his idea when he wrote, "*Good environments are analyzed for their relevance to contemporary urban design problems*" (Cullen, 1971:p.446). Accordingly, the suggested research would focus on the contemporary conditions, evolution in different fields, needs of users and the present problems and challenges to generate ideas which develop the city to be adaptive to these changes.

In 1986, Gaerling evaluated the urban environments by examining the degree of visual access and the complexity of spatial layout. Gaerling confirmed the importance of engaging the visual concepts in the assessment of urban areas (Gaerling, 1986).

Simon Bell (1993) in his book "*Elements of Visual Design in the Landscape*" has presented in a unique way the basic vocabularies of visual design. He has structured them in a way that can be considered as logical and easy to follow their sequence. This book is highly accessible even to non-designers who increasingly need to know about the basics of visual design. Bell has explained a range of design principles which show how landscapes are "put together" and how we perceive patterns in them using tangible, relevant examples covering all types of landscape (urban, recreation, countryside, farm, forestry etc.). The role of the physical and visual stimuli in the process of perception has been investigated by Bell's explanation of how we construct the visual images in our mind and how the light, sound, smell and form affect this process. This reference can guide urban designers during making decisions about the visual profile of different urban elements and the technique of reading these elements as part of the whole image.

According to the research done by Salingars in 1999 and Al Homoud and Al Natheer in year 2000, it is concluded that within urban spaces, the vertical objects or boundaries determine our perception of spatial enclosures more than horizontal

elements. These results can be applied only on the human-eye perspective but there are different effects of vertical and horizontal boundaries when they are seen from high levels of vision. Moreover, these investigations have highlighted the significance of details within the facade of buildings in determining the character of streetscape however the details have smaller role in determining the character of streets when they are seen from the top. The concept of roofscape should be investigated as an effective factor as the streetscape.

Christopher Tucker, Michael Ostwald and Stephen Chalup in 2004 have investigated the visual attributes of horizontal and vertical objects in terms of texture, colour and ornamentation and its effect on the streetscape and the way of perceiving it. Mauro Cherubini and Nicolas Nova in 2004 have pointed to the role of observers in the process of city perception by classifying them into two categories; viewers who master the city or make control on its image and viewers who live in the city passively. This paper has dealt with the visual appearance of the city as an important parameter which affects the viewer by encouraging or discouraging him/her to observe the city. The paper has included some interviews with scholars and planners who have recommended that, it is very important to the professionals and planners to understand the psychological features and needs of the users when they improve the urban spaces and to avoid any conflictions between the plan/design and the way of thinking about it by users.

In year 2006, Kurtarir and the other authors of the paper entitled “Spatial and Cultural Impact Assessment of Symbol Replacement in Istanbul” have classified the values of the city image into two kinds of values; symbolic value and use value. This classification supports the concept of integration between the visual appearance and uses which could not be separated or prioritized.

Michael Pacione in year 2009 confirmed that the biggest problem is no longer in identifying the components of urban imageability and legibility but in translating these into practice. He found that the factors of scale and needs of users of each sub-area or district should be considered. Most of These investigations pointed to the relationship between humans and their built environments and focused on how people acquire knowledge and experience the city from the ground level which is



restricted by the view angle of human's eye perspective. So when the level of vision changes, different visual aspects can be perceived.

2.1.3.2 Second theme: City imaging through the over-head images:

*Keywords;* Over-head images, city imaging, vertical cities, high observation points

In the early 19<sup>th</sup> century after the introduction of the aerial photography, some investigations tried to engage the use of aerial surveys in addition to the ground survey to develop an integrative system of information. In the late 1960's the New York State Office of Planning Coordination contracted with Cornell University's Centre for Aerial Photographic Research to conduct an aerial survey of the state that would be combined with ground surveys to develop the first Geographic Information System (GIS) known as LUNR "Land Use and Natural Resources Inventory" (Light, 2003:p.138-139).

Melville C. Branch is one of the first authors who investigated the concept of imaging the city from high levels of vision which differs from the normal human-eye perspective. Branch focused on the aerial images and their relation to city planning in his book "*City planning and aerial information*" which was published firstly in 1971. This book is based on the document entitled "*Aerial Photography in urban planning and research*" which was published 23 years before Branch's book. Branch highlighted the importance of aerial imaging but only as a physical tool, visual reference or useful material which can help the city planner to recognize the urban patterns of the city, their history, their problems, the available sites for development, the vacant areas and many other features related to the streets networks and the form of the city. He argued that,

*"Changes now under way in the process and practice of city planning, however, emphasize that aerial photography is essential for city planning which is realistic, real-time when need be, and continuously affecting the future of the community in significant ways"* (Branch, 1971:p.3).

Branch focused on the changes that have taken place in the practice of city planning and the tools which are used to achieve this practice but he ignored the change of the way by which the city is perceived and the available observing points to view the city. He noticed that the development of aerial imaging would change the way by

which the urban planners would analyse the city and propose the regeneration plans. He developed the methodology of investigating the same theory by studying the plan of Los Angeles as a case study in his book *“Urban Air Traffic and City Planning: Case Study of Los Angeles County”* which was published in year 1973.

From another point of view, Nathan Robinson used the notion “top-down approach for city planning” to express the concept of city imaging from high levels of vision. In his paper entitled *“Aerial photography: its influence and application to planning”*, Robinson has concluded that,

*“This top-down approach to planning was influenced by the available technology and information of the era. There is no doubt that the top-down perspective of aerial photography was instrumental in supplying much of the information that led to the system top-down methodology”* (Robinson, 2009: p.3).

In addition, Robinson has reviewed the work of Branch by this argument, *“Branch referenced advanced interpretive techniques, that when applied to the analysis of urban infrastructure from aerial photographs, could be used to glean information regarding social and neighbourhood characteristics and population dynamic within certain areas of the urban environment”* (Robinson, 2009: p.2).

Roger Trancik was interested in urban development and he published his key findings in his book *“Finding lost spaces – Theories of urban design”* in 1986. Trancik mentioned that aerial photographs and axonometric drawings can be used as an effective tool in the spatial analysis of the existing form of the city. He added that, aerial images can be used to illustrate the problems of the study areas, which should be categorized, because aerial photographs help to understand the impact of each problem on the whole urban context. Through the effort of the author to define the different stages of urban analysis of districts or areas, however, Trancik has ignored the analysis of roofs and the locations of high buildings in the urban area which can affect the development of the visual appearance.

Because of the concentration of high buildings and different uses of roofs in the city centres, this research focuses mainly on the central areas and their visual appearance.

Richard T. Le Gates and Frederic Stouts in 1996 have defined the city centre as the container of work, public pleasures and the market. In their book “The City Reader”, Gates and Stouts discussed the problems for modern city centres such as poor living environment, gigantism and large scale, placelessness and destruction of valued spaces.

In their book “Above and Beyond” which has appeared in 2002, Campoli and the other authors of this book used aerial photographs to paint a vivid picture of how developing patterns and differing land use regulations lead to significantly different manifestation of the built environment with various implications for cultural and natural landscape.

Frank Fitzgerald in 2004 focused on the different types of aerial photographs and the factors which affect their quality. He dealt with this kind of image as a physical tool which has many advantages and applications and he concluded that, aerial photos are useful for illustrating land uses patterns, connections between natural and built features and the overall context.

Regarding the evolution of city imaging, Fattahi and Kobayashi have mentioned that, “we as designers should take into account the continuous evolution of the world and learn to accept it, so as not to be left behind”. They stated that “each new era offers its special infrastructures that can be used to improve our cities appropriately if they are comprehended properly” (Fattahi and Kobayashi, 2009: p.69).

Stephen Owen in year 2009 has defined the “Satellite Images” as these images are taken from planes or balloons. They mainly focus on the appearance of urban form where the observer stands outside the urban fabric and looking downwards to the urban environment. This kind of images evokes a different feeling of appearance in the opposite of when the observer is enclosed by the three dimensional urban fabrics.

All these investigations focused on the importance of aerial images or satellite images as a physical tool or as photographs captured by camera, not as images or a way of city perception which has particular benefits and could be utilized in improving the spatial knowledge and the legibility of the city image. However the limitation of these studies in investigating the concept of observing the city from above, they

defined the aerial images or photographs in influential way focusing on their types, applications in planning, presenting or visualising and evaluating the city. These explanations open the mind to rethink of this type of city imaging from the perceptual point of view. Most literature about the aerial photographs prove that this type of imaging the city becomes available not only through the different means of air traffic but also via flyovers, top terraces, high buildings and double deck buses. This type of imaging is presented widely through the different means of media. Therefore it can be noticed that developing the upper visual appearance of the city can affect a great numbers of users or observers who have the opportunity to see the city from above.

2.1.3.3 Third Theme: Trends of city centre improvement toward a qualitative visual image:

*Keywords:* Urban regeneration, city centres, urban criteria, Visual qualities, British city centres, Egyptian city centres.

“*The Death and Life of Great American Cities*” remains the classic book on how cities work. Jane Jacobs in this book analysed parts of the city that are alive and their urban patterns that help us not merely see but understand (Jacobs, 1961). She explained the city as ecology or a system of interactions that is more than merely the laying out of buildings. It is important to be reminded that cities are literally the centres of civilization, of business and of culture. Part four of this book is dedicated to be effective tactics to actually improve city performance. These include: subsidized dwellings, attrition of automobiles as opposed to erosion of cities by cars, improvement of visual order without sacrificing diversity, salvaging projects and redesigning, governing and planning districts. According to Jacobs, the visual order has an effective role to expedite the other tactics of city development.

Roy Cresswell (1979) argued in his book “*Quality in Urban Planning and design*” that, we need first to understand how changing attitudes and circumstances have affected the study area over time and to look at past policies and developments in the light of conditions of the time to get some kinds of perspective.

Kevin Lynch in year 1984 established the five criteria which influence the quality of the city form which are vitality, sense, fit, access and control. He pointed to the use of these five dimensions in addition to two “Meta Criteria” - as Lynch called them –

which are efficiency and justice to assess the performance of the city form. Lynch's book entitled "*A good city Form*" included the essential information about the different forms of the city centres and how they have developed through the history. The most important conclusion was the wide theoretical approach about how the criteria for city design can be selected or decided and the need not only to consider or apply the known criteria during the urban design of the city.

Tridib Banerjee and Michael Southworth presented in 1990 their book "*City sense and city design – writing and projects of Kevin Lynch*". This book is valuable reference because it differs from other mentioned literature that, it focused on the criteria of creating qualitative urban patterns in regard to its perceptual form. The authors demonstrate the importance of the visual performance of the city by arguing that,

*"If some studies concentrated on the functional and environmental performance of the city as a necessary condition for optimizing or improving city performance, perceivable and organized visual form of city objects is required for efficient function"* (Banerjee and Southworth, 1990: p.101).

The visual problems of contemporary cities have been discussed in this book in a general way. The authors found that modern cities display many ambiguities, confusions, discontinuities, significant activities are hidden from sight, historical and natural setting are obscured and the city is very rigid and lacks openness. In fact, the identification of problems in this way can guide policies of developing the visual appearance of the city.

Four years later, in 1994 the Department of the Environment published the report "*Vital and Viable Town Centres: Meeting the Challenge*" (URBED, 1994). It has outlined many of the often interrelated social and economic trends which have shaped the recent development of town centres. These include the mix of functions, population and employment dispersal, increased personal mobility, and the continuing move towards a service based economy. The response of retailers and leisure developers, referred to as the 'retail revolution', has essentially been to move out of town. The report concluded that the continuing decline of town centres would have unacceptable economic, environmental, social and cultural costs. This report identified a number of indicators for both vitality and viability that were also

incorporated into the new Planning Policy Guidance Note 6 on town centres as indicators that local planning authorities could use. This report supports the demand for co-operation between local authorities and researchers and urban designers. Additionally, this report shows the importance of monitoring the functional, visual and environmental performance of the area in order to determine the negative aspects.

Regarding the central areas, John Gummer (Gummer, 1994) has categorized the different types of town centres according to location, history and population. Moreover, he has investigated the various functions of central districts and he has described the area of city centre as it could be centres of art, culture and entertainment, places to live or visit. The hierarchical concept in explaining the central areas has been clarified in this book so the centres have been classified as regional centre, city centre and district centre. Some general policies for developing the vitality and the viability of these distinctive areas have been proposed. It has been noticed that, only 3% of market towns considered themselves to be vibrant.

Michael Perfect and Gordon Power are the authors of the book *“Planning for urban quality”* (1997). They have examined the key factors which damage the modern urban environment. The authors have recommended that, the location of high buildings must be justifiable and appropriate. The book includes long discussions about the policies which could control the height of buildings. For example they have argued that, the policy to determine a range or maximum height of buildings have to be workable, and flexible in practice. More specifically, Loukaitou and Banerjee in year 1998 have written the book *“Urban Design Downtown – Poetics and politics of form”*. This book has studied through its three parts the history of urban development of city centre and the factors which affected it. The problems and challenges face any plan which aims to develop the city centre have been defined. The new concept adopted in this book was sustainable development which was a new concept at that time. To achieve the aim of this investigation, authors have pointed to some examples of developing public spaces in some American cities such as San Francisco.

Cliff Moughtin et al. confirmed the same viewpoint of Jacobs when the authors pointed to the three main aspects of analysing the townscape; the legibility of the urban structure, the permeability and the visual study which includes the study of

urban spaces, treatment of facades, pavements, rooflines, street furniture and the visual details which distinguish one place from another. Their ideas were presented in their book *“Urban Design – Methods and Techniques”* published in 1999.

*“The Enterprising City Centre”* was written in 2003 by William Gwyndaf. It has revealed examples of local partnership working in Manchester. The development and delivery of realistic implementation plans and the range of instruments available to create both an improved quality to the urban environment and enhanced commercial and cultural competitiveness of city centres are the main aims of this work that was largely delivered in Manchester within a five year period of intensive development and renewal activities. While Oakman in his book written in year 2006 *“New Downtowns: The future of urban centres”* focused mainly on the economic factors which affect the growth of the central areas and the uses of buildings.

With focus on British cities but more general than the above mentioned reference, *“Urban Design Compendium 1” (UDC1)* which was published in 2007 can be considered as a useful guide for any urban designer who is involved in preparing regeneration proposals and creating a detailed masterplan for an urban area (Davies, 2007). It demonstrates examples of urban regeneration masterplans/proposals and summarizes the main steps to achieve them. These steps are classified to two groups; the “In-put” and the procedures of preparing the proposal in very ordered way.

The conclusion of this literature is that, any proposal for regenerating urban areas should begin with appreciating the context, then creating the urban structure and detailing the regeneration plan and conclude with the presentation of models and the proposed masterplans. I think it is very understandable reference which has developed the ideas adopted in the book of *“Responsive environment – a manual for designers”* written by Bentley and other authors in 1985. However, the investigation of Bentley was more general and simple and focused more on urban analysis rather than urban development as in the UDC 1.

Regarding the responsibility of urban designers and the problems they face in designing the city, *“Urban design reader”* is an important book which was published in 2007 and written by Matthew Carmona and Steve Tiesdell. The authors pointed to the city as the product of decisions made for single, separated purposes, whose

interrelationships and side effects have not been fully considered. They analysed the different factors that affect the urban designer and his/her ability to make decision about the city or urban environment and why the urban designer has not become the leader of the urban design process.

Regarding the Egyptian city which is the case study of the research, many researchers have analysed the images of the Egyptian city from cultural, social and historical viewpoints. But many considerations could be added to the systematic model of analysis by dealing with the image of townscape, urban form, urban character, public realms, architectural elements and the visual determinants (Ali, 2003).

One of the oldest studies in the field of city planning in Egypt was in 1962 by Abdel-Baki Ibrahim who has established the principles of planning the cities in Egypt and determined the 20% of the total area of the city for its centre. There is a study which has been achieved by the National Organisation of Urban Harmony in 2010 (NOUH, 2010). This study has suggested some guidelines which can be helpful in identification of city centre's boundaries. The study investigated the significant factors which should be taken in account to determine the central area of the Egyptian cities.

The city of Assiut has been investigated by many researchers from different points of view. Abd-El Wahab in his research in 1994 investigated the area of Assuit City Centre in terms of planning, architectural and traffic problems and he concluded his thesis with some recommendations which can improve the performance of the city from the functional perspective. In another thesis which was conducted by Heba Al Zeidy in 1996, the visual pollution in the Egyptian cities was the key issue. Assiut city was the case study of this thesis which has focused on the problems of the visual appearance of the city at that time and she has determined the underlying causes of these visual contradictions. Most of this analysis depended on the personal observations and it has not been conducted through the well known criteria or any type of objective analysis of the city. The research has suggested various theoretical recommendations to achieve qualitative image but it did not include any practical reflections or specific mechanisms for the implementation of the proposals.



Lobna Ahmed has investigated the image of Egyptian cities throughout her Master thesis with the title “*Urban Bird-Eye View of Contemporary Egyptian city – Active and Passive Aspects*” in 2004. The second chapter of this thesis explained the historical origins of the aerial imaging as the basis of the theoretical study of this new concept. This thesis includes a general background about the processes of perception and mental mapping and their relationship to the aerial views. The definition of the aerial view, its types, characteristics, historical origins and the observed objects through the three visual sectors of the aerial view have been investigated in this study. Moreover, the thesis includes an appendix which has clarified the geometrical characteristics of the cone of vision, visual angles and the geometrical properties of the different visual perspectives.

This study has pointed to the image of Assiut city as an example of Egyptian cities. However the author pointed to various examples of deteriorated aerial images in the Egyptian cities, she has not clarified the considerations or the criteria which can be taken into account to develop the visual appearance of the city and the factors which affect this development. Moreover, this study has not pointed to the importance of engaging the concept of *city imaging from above* to the different stages of city design and has not clarified the various applications of over-head images in the fields of designing the city, analysing its image and evaluating the alternative proposals of developing the visual appearance to achieve a comprehensive development which has a great impact on the image of the city from the street level and from higher levels of vision.

Recently, Mahrous and Abd El Magied in 2006 have investigated the sustainable development of old and heritage Egyptian city centres. The authors have tried to identify the problems of the current historical centres and to propose some ideas which can regenerate the area of old Assiut City Centre as a case study. The deteriorated profile of Gharb Al Balad District which is the oldest centre in Assiut has announced itself in many research papers which aim to develop this area in terms of streets network, land use and conservations of the listed buildings as in the paper written by Khaled Yousef and Mo'taz Mahmoud in year 2007.

From another point of view, the urban grid of Assuit has been analysed by Ahmed Refaat using the techniques of axial maps and spacesyntax to determine the most

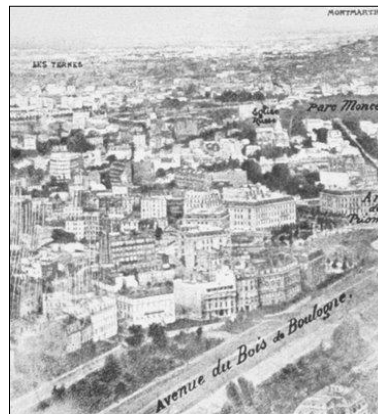
accessible areas or what is called the integration cores. This Ph.D. thesis which has been submitted to Manchester University in 2009 has examined the morphology of the urban grid of Assuit. In the paper entitled *“The urban grid and its consequences: Assiut an Egyptian case-study”*, Refaat and Brown have confirmed that, *“Efforts should focus on the global relationships of spatial structure if sustainable and effective solutions for these problems are aimed. Only through this way, urban grid problems can be solved and urban life can be created”* (Refaat and Brown, 2009:p.077.10) and they have argued that, *“Assuit is seen to have widespread problems, most notably in the perpetuation of conflicting spatial patterns in various parts of the city. Overall, the analysis suggests the potential for use of strategic spatial interventions to alleviate morphological problems and create a more efficient grid structure at both local and global scale”* (Refaat and Brown, 2009:p.077.10). They studied the impact of the current spatial order of Assuit and the presence of significant obstacles such as the railway and Al-Malah Canal on the accessibility and permeability taking in account the whole urban structure of the city instead of studying each district separately.

According to the findings of the last investigations, most of the proposed ideas for regenerating the central area of Assiut concentrated on the role of urban planning in solving the environmental and functional problems of the centre. While some literature focused on the concept of sustainability and how it affects the decision-making about developing the urban areas. This research proposes new boundaries for the central area in Assuit city in order to avoid some problems which have been announced in the last research regarding the fact that, the most activities and important uses are concentrated in a very small area and that the old centre has lost its attraction to be a qualitative/effective part of the central area.

## ***2.2 Introduction about the concept of over-head imaging:***

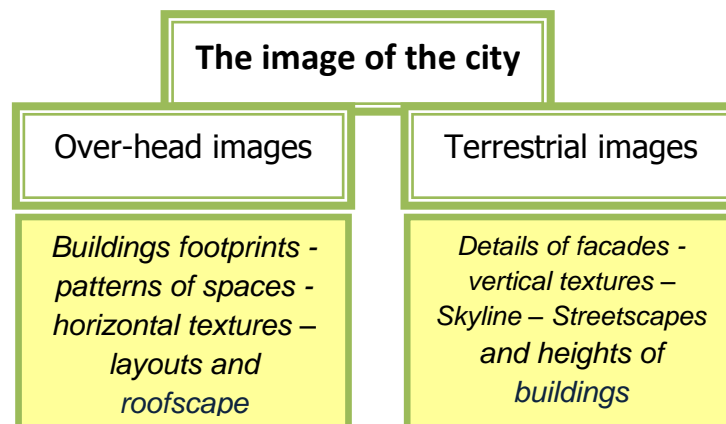
We live in a world which is saturated with visual images which have a variety of purposes and intended effects. A single image can serve a multitude of purposes, appear in a range of settings and mean different things to different people. The sources of images and the potential of viewing them have dramatically increased. We engage in looking to communicate, influence or to be influenced. We have gradually become more dependent on images as a source of information (Sturken &

Cartwright, 2009). The image of the city has thus become a powerful tool for architectural and urban design. Regarding the aerial image of the city, There is a common misconception that aerial photography is relatively new but, in fact, aerial photography has been around since the mid nineteenth century when the first aerial photograph was taken by a Frenchman called Gaspard-Felix Tournachon (known as Nadar) from his balloon in 1858 (<http://www.oldaerialphotos.com>) as shown in Figure 2.3.



*Figure 2.3: The first aerial photograph of the Place de l'Etoile, Paris, was taken by Nadar in 1858 from a balloon at an altitude of 520 meters (<http://photographyhistory.blogspot.com>)*

Elevated and aerial means of transport have enabled the observer to have a comprehensive view from overhead and perceive the composition of the contemporary city. This over-head view has certain attributes and types and can be considered as one of the factors which affect the visual improvement of the city. A comparison between the main observed objects in the over-head images and terrestrial images is illustrated in Figure 2.4.



*Figure 2.4: The difference between over-head images and terrestrial images in terms of the observed objects.*

### **2.3 Classification of over-head images:**

According to the view angle, over-head images can be classified as following:

#### **2.3.1 Vertical images:**

This type of images demonstrates the city as a 2D drawing or a picture which has no depth. The eye concentrates on the centre of the image. Other elements are perceived related to the centre as shown in Figure 2.5.



*Figure 2.5: A vertical aerial image of New Jersey City  
(<http://www.aerialphotosofnj.com>)*

#### **2.3.2 Oblique images:**

This type of images is usually taken at a lower altitude and targeted directly on the site from various directions, thus it provides more detail than vertical photographs. Many photographs can even be achieved from elevated locations such as hills, or the tops of buildings. The view angle is typically  $45^{\circ}$ . In low oblique images the observer cannot see the horizon or the skyline of the city, but buildings and other urban elements towards the background of the image are still perceived as 3D objects. This type of image creates a sense of depth and reveals the roofscape better than a vertical image (See Figure 2.6). The high oblique image gives the observer an opportunity to see the horizon and features of the skyline. This type of aerial image is more panoramic than the low oblique image. A comparison between low oblique and high oblique images is shown in Figure 2.7.

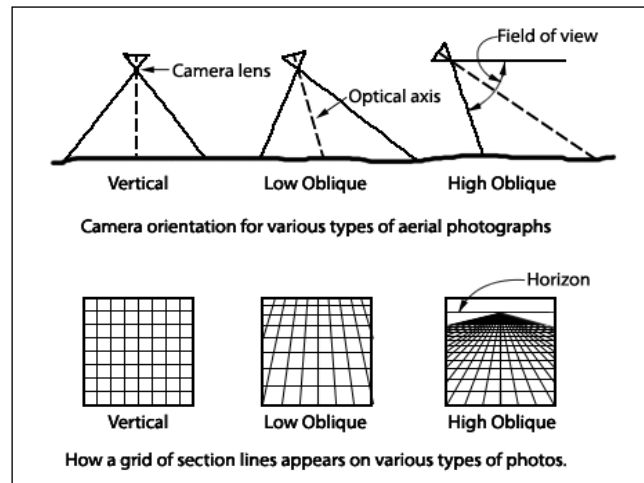


Figure 2.6: The difference between vertical and oblique images ([www.e-education.psu.edu](http://www.e-education.psu.edu))



Figure 2.7: A comparison between low oblique and high oblique images. Left, low oblique image of London, UK (<http://www.flickr.com>). Right, high oblique image of London shows the horizon and sky line of the city (<http://www.aerolens.co.uk>)

### 2.3.3 Horizontal images:

This type of images emphasizes the vertical surfaces and gives a real impression of the sky line and the vertical textures of the city (See Figure 2.8).



Figure 2.8: Horizontal over-head image of Cairo, Egypt (<http://www.flickr.com>)

### **2.4 The value of using over-head images:**

The over-head images can be beneficial to city modellers, local authorities, city planners and urban designers who use such images as both physical and conceptual tool. Moreover, the residents, visitors and workers of a city can benefit from overhead images as a perceptual tool to help them understand the physical and conceptual image of the city and improve its legibility and visual permeability. Changes in spatial data over a period of time and other information can be collected from aerial photographs. Such information is vital to the urban designer at both the master planning and implementation stages.

Also, considering the potential of observing cities from high levels should be taken into account and affect the decisions about the design of the city or improving its image. Understanding from where and how this over-head perspective can be observed is an important concept in designing the city in terms of the location of high buildings, the utilization of rooftops, the optimisation of aspects and prospects and other parameters which affect the visual appearance of the city. Figures 2.9, 2.10, 2.11 summarise the urban elements and the different applications of over-head images.

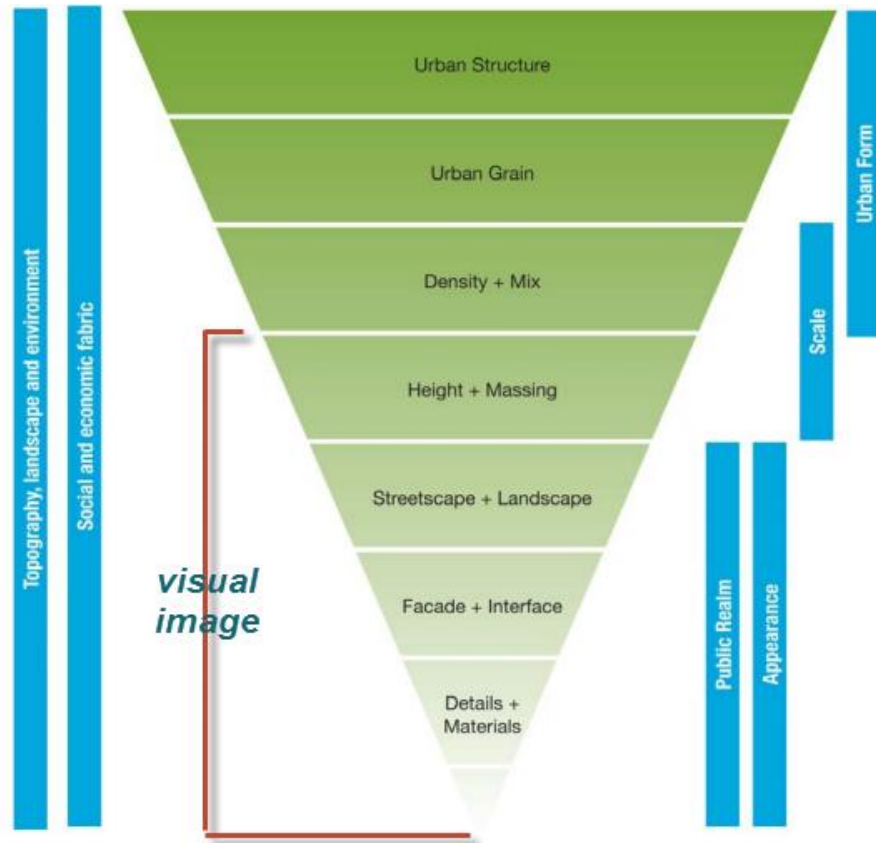


Figure 2.9: The elements of urban design from macro to micro scale (Gehl, 2011)

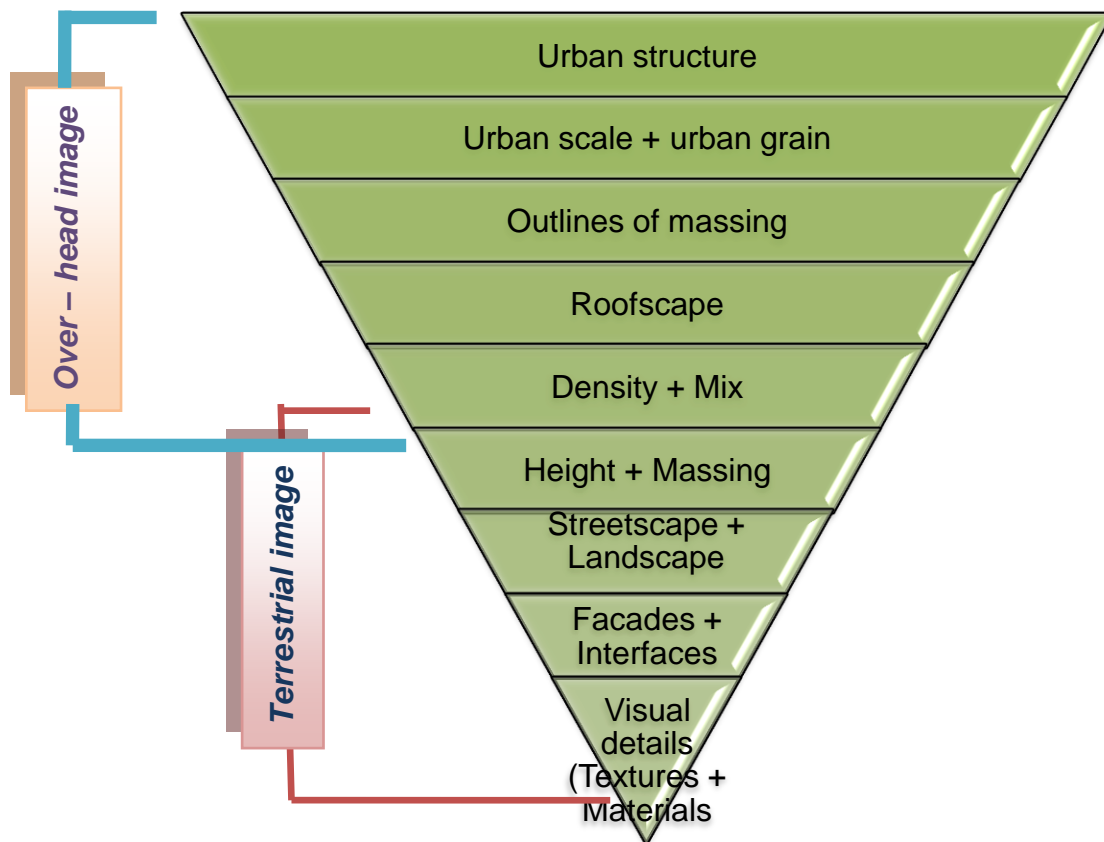


Figure 2.10: The range of urban elements through the over-head images

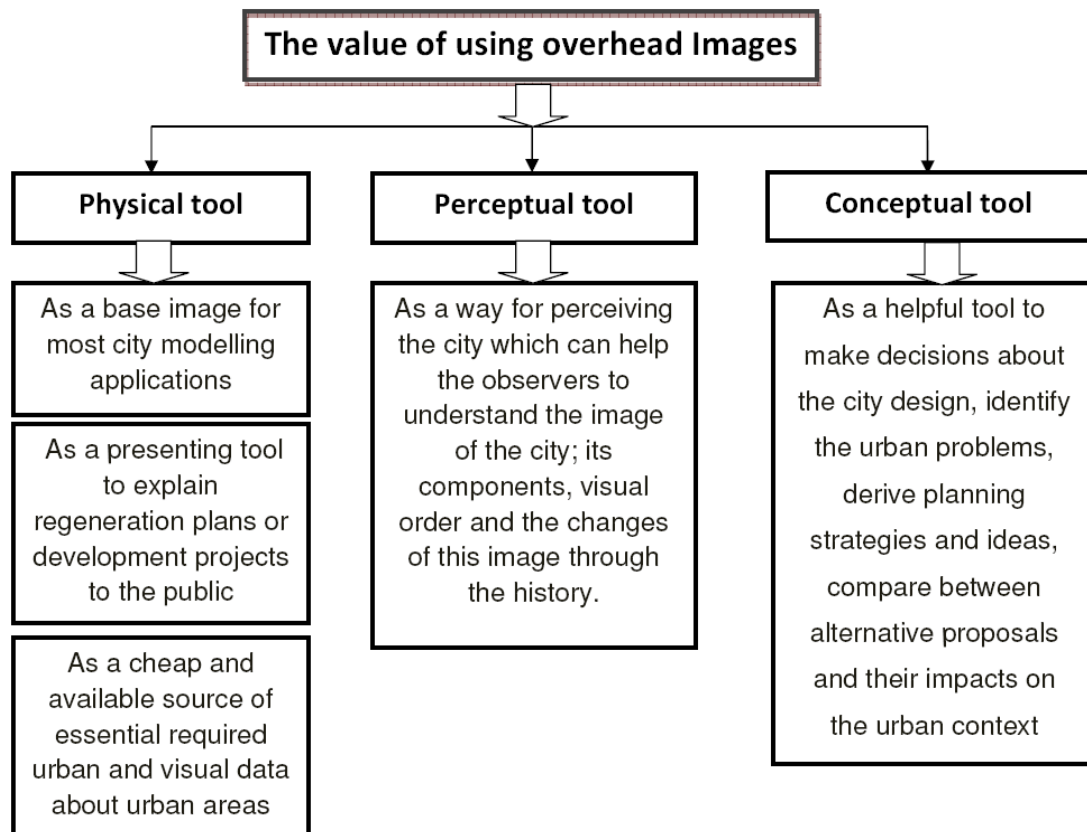


Figure 2.11: The different applications of over-head images in the field of urban design

#### 2.4.1 Over-head image as a physical tool:

There is a difference between images which are composed in the observer's mind and photographs which are captured by camera from high levels of vision. The over-head photos are used in different fields:

- City modelling and visualization.
- As an easily understood tool for explaining regeneration plans and development projects to the public and to encourage them to take part in the process of city development.
- Over-head images as a tool for the visual and urban assessment of the city.

##### 2.4.1.1 City modeling and visualization:-

In the traditional terrestrial photographs; objects are hidden one behind another, perspective confuses the comparison of 'near' and 'far'. City maps are either a maze of lines, difficult to read or they are empty diagrams that do not include the essential

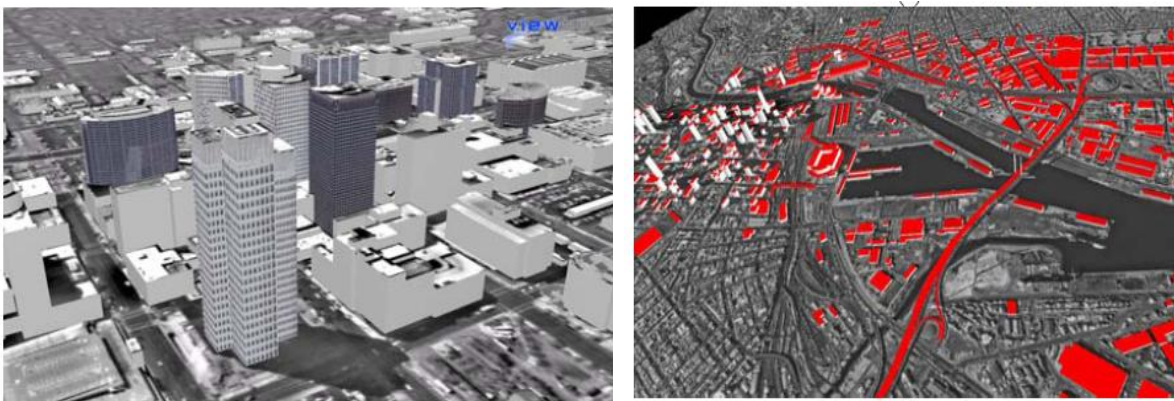


information to make valuable comparisons between different settlements (Lynch, 1984).

Satellites are a key factor in changing perspectives on visualizing the earth. Digital images of the earth from satellites became enormously popular because of the release of Google Earth in 2005, a virtual globe program originally called Earth Viewer that combines imagery from satellite photographs and aerial photography and 3D geographic information systems (GIS) (Sturken & Cartwright, 2009).

Recent developments in transport, communication and information technology have considerably increased the flow of people and resources from one area to another. A useful technique for spatial analysis is the aerial photograph, aerial axonometric and over-head images. A series of historical aerial or over-head photographs can give insight into developments or changes of the city face. Over-head photographs are an easy tool for creating three dimensional buildings by placing 3D digital building blocks on top of two dimensional aerial photographs just as toy blocks which can be combined to simulate a real building and match it with buildings within the area (See *Figure 2.12, 2.13 and 2.14*).

Oblique photographs are the closest to human vision in comparison to other types of over-head images which need special/unique positions and view angles. There are also 'ortho' (planar) photographs which can be used to measure true distances (Zhang & Zhu, 2004) because these aerial photographs are geometrically corrected (ortho-rectified) so that their scale is uniform (<http://maic.jmu.edu/sic>).



*Figure 2.12: Using the Oblique over-head and aerial photos in the field of city modelling (Kocaman et al, 2005)*



*Figure 2.13: The aerial images as a base to city modelling. Left: A Virtual model of London based on Google Earth (<http://www.casa.ucl.ac.uk>). Right: the 3D model of Hamburg, the second largest city in Germany, which was the first city to be recreated as a three-dimensional model (Sturken & Cartwright, 2009)*



*Figure 2.14: The aerial images illustrate a comprehensive flow of streets and space patterns which are helpful in the space syntax and axial maps applications (<http://www.spacesyntax.com>)*

#### 2.4.1.2 The use of over-head images in the presentation of urban projects:

Many local authorities, planners and urban designers use over-head images as a helpful tool to demonstrate and illustrate their ideas of new urban design projects or regeneration projects because this type of image is easily understood by the public. It is well known that the way of presenting proposals – especially in the large-scale projects – affects the attitude of the public. If proposals are presented in an easy-to-read manner, this can lead to greater public involvement and participation in decision-making.

Viewing over-head photographs of urban areas is useful for understanding land use patterns, connections between natural and built features and overall context. Therefore, such images are used effectively to illustrate and explain the main ideas and the outlines of planning or redevelopment proposals which are difficult to be understood through the ground level images (See Figure 2.15).

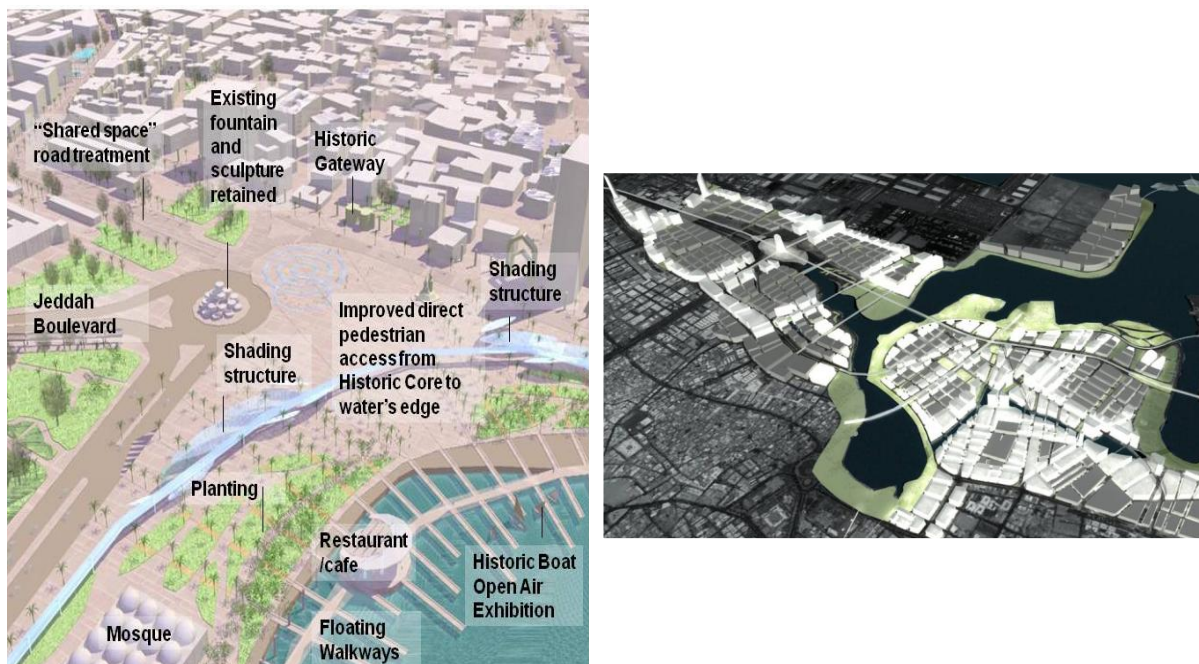


Figure 2.15: The regenerated historic centre of Jeddah, Saudi Arabia (Karimi, 2009)

Since the early 1990s the Design Centre for American Urban Landscape has used low-level aerial photography as a tool for helping communities within the Twin Cities (Minneapolis & St. Paul) metropolitan area understand the regional landscape and envision change. From high eye-level, the small details experienced from the ground level such as buildings facades, traffic signals, and municipal boundaries become less important while larger patterns not readily observed on the ground become more apparent (Fitzgerald, 2004).

Over-head images can be also used to attract tourists or, as Geo-referenced imagery, to provide data about the terrain and geographical features of the city. These images are also a useful tool in educational presentations of urban design.

#### 2.4.1.3 Over-head images as a tool for the visual assessment of the city:

Over-head photographs can provide significant indicators about the current urban condition of a city which can be used in the urban analysis and assessment approaches. Over-head photographs are used not only to assess the current urban features but also to assess the development that has taken place through the history of a city. Over-head photographs also help in exploring the change to an existing structure when new stimuli are added, rather than focusing on the new appearance of these stimuli in terrestrial photographs. Over-head photographs introduce the ability to compare different forms of the city at different times through its history. This facility of tracing the city history enables the planner and urban designer to assess the city and the changes in its appearance to decide if the city is developing or declining.

Over-head images are an effective tool for assessing the visual profile of the city because they can give clear indications about:

- The proportions of buildings to the open spaces.
- How the development projects can affect their urban context in terms of the natural and built environments?
- The scale and intensity of land uses and human activities.
- The form and the spatial order of streets network, available parking locations and the paths for pedestrian movement to, from and within sites.
- Public, semi-public and private spaces and how the images of such spaces change at various times of the day and for special occasions?

#### **2.4.2 Over-head image as a perceptual tool:-**

An image develops meaning or signification when it is interpreted by an observer using various 'clues' such as colours, shades, contrast and depth. These visual attributes are considered as the most effective clues which could point to the meaning of the image. There are no certain rules which control the ability of interpreting the image of the city because it depends on various factors related to the observers and the observed objects. We may perceive the city as piecemeal objects

in a fragmental way and/or as spatial layouts as in the case of the overhead perspective (See Figure 2.16).

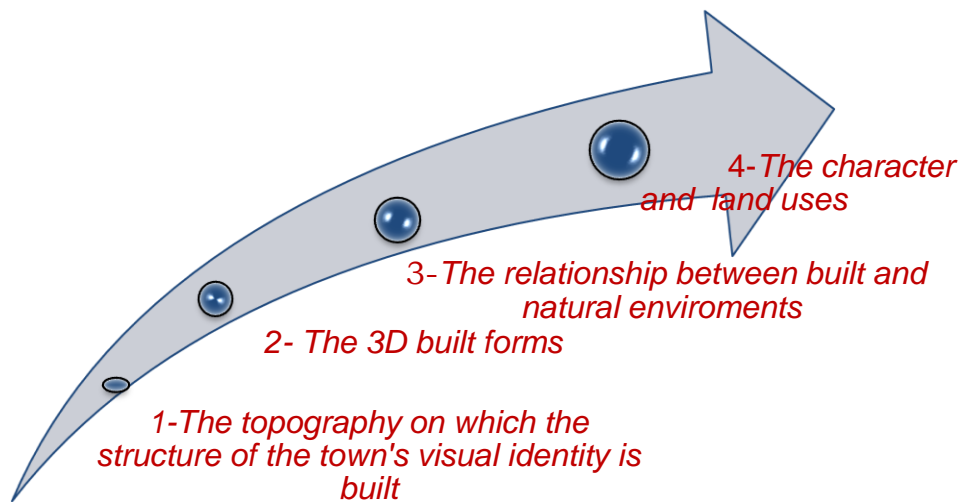


Figure 2.16: Experiencing the city from high levels of vision is created through four stages

In fact, observers can link the visual information in some way which allows them to develop what Kuipers (Kuipers, 1977) called a “common sense” of understanding an urban environment. According to the rules of depth perception, the oblique overhead images can be perceived through three different sectors: the very near sector, the middle sector and the distant sector of the image. Each sector has its own visual features which help the observer to understand various attributes of the whole image as shown in the following figure.



Figure 2.17: The sense of depth through the three different visual sectors of the over-head image. Left: Over-head image of the city London, UK

([www.webbaviation.co.uk](http://www.webbaviation.co.uk)). Right: Over-head image of London Stadium  
(<http://www.zimbio.com/pictures>)

#### 2.4.2.1 The factors of understanding the over-head images of the city:

These factors can be related to the observer, view angle, height of eye/vision level, timing of vision and the environmental conditions as shown in Figure 2.18.

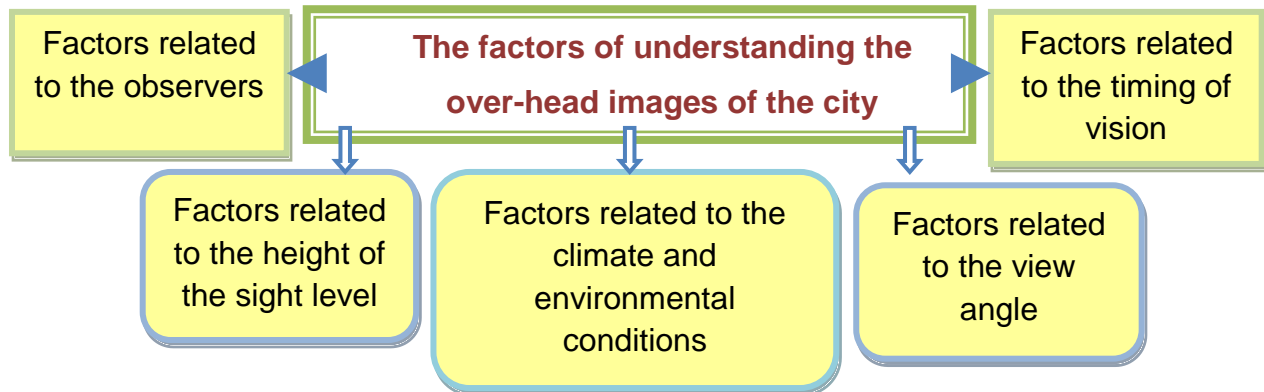


Figure 2.18: The factors of understanding the over-head images of the city

- Factors related to the observer:

There are three types of city observers: residents, workers and visitors. Each group of observers looks for some aspects of the city which may be more interesting for this group. Residents and workers usually focus on shopping facilities, public amenities and open spaces, whereas visitors explore the character of the city by looking for historical, cultural and recreation places and interesting buildings. They try to become familiar with the city and to acquire a memorable image of it in a short time. Visitors often want to see something new and different so their gaze looks for contrast more than similarity.

*According to their state of movement, the observers can be classified as (Ahmed, 2004):*

Observers who view the city from static observation points: This category includes observers who do not move location while viewing the city from above. They may observe the city from high-rise office buildings or apartments or from tourist towers and, after some time they may become familiar with this over-head image.

Transient observers: This type of observer includes people who are moving through the city. They can be helicopters pilots, aeroplane or balloon passengers, or users of

other recreational elevated means of transportation or observers who look from the top deck of a double-deck bus or perhaps as high as 6m above the ground level if they travel by elevated rapid transport or are crossing a flyover. The transient observer perceives a sequence of changeable images which illustrate some aspect of the city. These variable images present a variety of available scenes which play an important role as stimuli that help to make the city easier to be read. There are two types of the transient observers; who move horizontally and who move vertically.

Moving horizontally means that the height of the eye level is constant but the view angle is changing from site to site to produce changeable scenes. In vertical movement, the height of the eye level increases gradually and the sense of detail decreases but the view angle is constant. When the observer moves vertically – for example by a scenic elevator – interesting changes in scenes will be perceived (See *Figures 2.19 and 2.20*). The first levels will introduce a normal image of the surrounding areas but when the observer arrives at the last level he/she will be more able to read the horizontal surfaces because of the panoramic field of vision and the absence of vertical obstacles at this height. The visual and physical features which can be read by observers depend on the speed of the vertical movement and the height of the eye-level.



*Figure 2.19: The slow means of elevated transportation which make the over-head views of the city available for recreational purposes (<http://www.mvgm-online.de>) and (<http://www.life.com/image>)*



*Figure 2.20: Examples of vertical movement whilst observing the city from above. Left: El-Bauen Park, Magdeburg, Germany (<http://www.mvgm-online.de>). Middle: Minaret of Samaraa Mosque, Iraq (<http://www.palissue.com>). Right: Cairo Tower, Cairo, Egypt (<http://www.trekearth.com>)*

Observers can be categorized according to their inclination to understand the city to observers who are inclined to live in the city passively who can be called “Passive observers” and observers who are inclined to master the city or who can be called “Active observers”.

*This classification of observers as active or passive observers is affected by some factors as following (Ahmed, 2004):*

- The culture, education and the career of the observer influences his/her own way of understanding the city. The same city or the same place can send different messages to different observers. If you ask an engineer to describe a building, he/she will probably describe its physical aspects, whereas an artistic person will try to describe his/her feelings about such a building and how it contributes to the urban scene. The level of the observer’s education is believed to be an important determinant of the positive or negative perception of an area.
- The availability of high-level observation points which increases the opportunity of observing and understanding the city. Knowledge of an area is thought to be directly related to the ability of each observer to accurately locate major landmarks. It is the fact that, inability to observe some part of a city leads normally to lack of effort in observing or exploring it. The indiscriminate distribution of high buildings which may be lead to hiding some aspects such as edges or natural landscape makes the image more ambiguous. This fact should be borne in the mind by urban designers whose



task is to highlight elements in the city features by making these elements easy to be seen from different observation points. It can be noticed in cities which have different levels of terrain that people who live in the upper districts have a better knowledge of their city because their location provides them with the opportunity to see a variety of urban elements from above (Cherubini& Nova, 2004). Figure 2.21 summarises the classification of city observers.

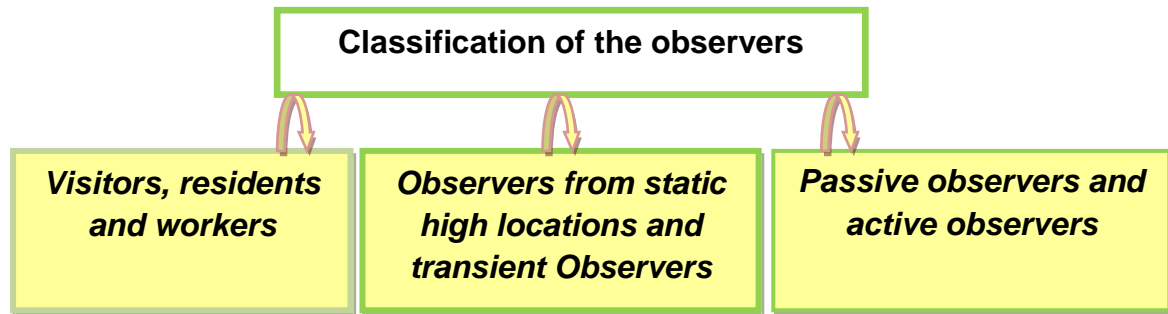


Figure 2.21: The classification of observers who perceive the over-head images

- Factors related to the height of sight level:

The height of the observation point plays an important role in determining the level of detail which can be perceived and the scale of the observed elements as shown in figure 2.22. At very high levels we can perceive information about the region, terrains, and the main movement axes. The sense of horizontal surfaces such as roofs and floors is stronger than the sense of existing vertical surfaces. At a certain height not very far from the ground, the observer will be able to see the surrounding neighbourhoods, the patterns of blocks and landscape. When the observer comes closer to the ground, the perceived image will be limited inside a narrow field of vision but most of the seen elements become more detailed such as facades, floors, and natural landscape. Some additional stimuli could be touched, and sensed, at this level of vision such as smells, sounds, and visual activities.

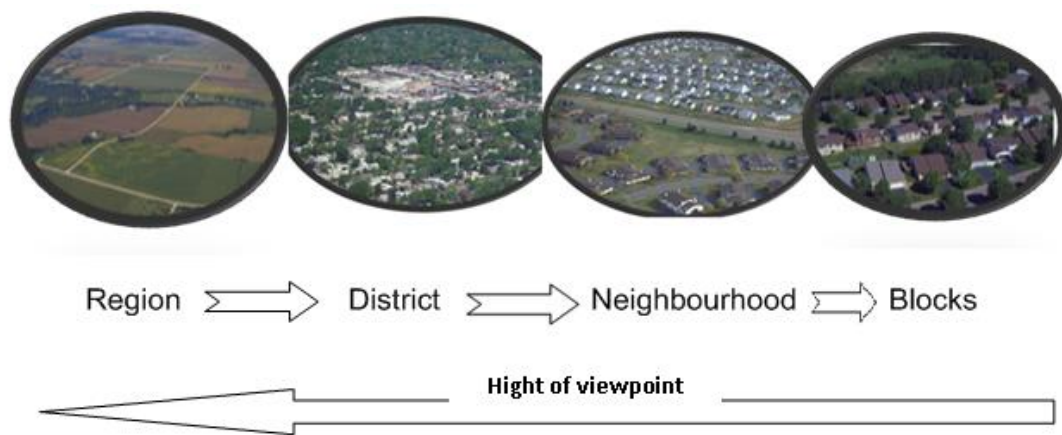


Figure 2.22: The impact of the height of the vision-level on the level of detail which can be observed through the aerial images (Fitzgerald, 2004)

- Factors related to the view angle:

The view angle can be affected mainly by the location of the observer and the type of aperture through which the viewer looks. For instance, observing the city from a roof garden or a tourist tower can result in a very wide view angle that maximise the understanding of the features of the city. Roofscape and elements of skyline are the most perceived element in these panoramic aerial views. On the other hand, if the observer looks at the city from the same location but this time through strips of windows, the view angle becomes narrower and the panoramic view becomes a limited visual image. It can be concluded that, the type of the intermediate between the observer and the scene affects the available view angle. It may be a glass screen, open terrace or strips of vertical windows. Each type has a different view angle which produces a different aerial view.

- Factors related to the timing of the vision:

The over-head image of the city can be observed during the day or at night. The timing of observation is an important factor which can affect the appearance of the city from above. Observing the city during the day is mainly affected by the amount of sunlight and shadows which can be helpful in making sense about the height of buildings; but viewing the city at night is affected by the distribution of artificial lighting and how it enables the image of the city to be read. Nighttime over-head image of the city focuses on the paths as lighted elements. Additionally, observing the image of the city at different times of the day is an effective way of evaluating the

viability of the different districts and deciding which districts are improving/ declining in terms of night life (See Figure 2.23).



Figure 2.23: The effect of the timing of the vision on the perceived image of London in daytime (<http://www.google.co.uk/imgres>) and at night (<http://www.urban75.org>)

- Factors related to the climate and environmental conditions:

Over-head images are more affected by climate changes in comparison to the image from the ground. The distant sector of the over-head image is the most affected by climate change and pollution as shown in Figure 2.24. Horizontal surfaces and elements of landscape usually have a changeable appearance according to the season in comparison to vertical elements which are less affected by this factor (Fitzgerald, 2004).

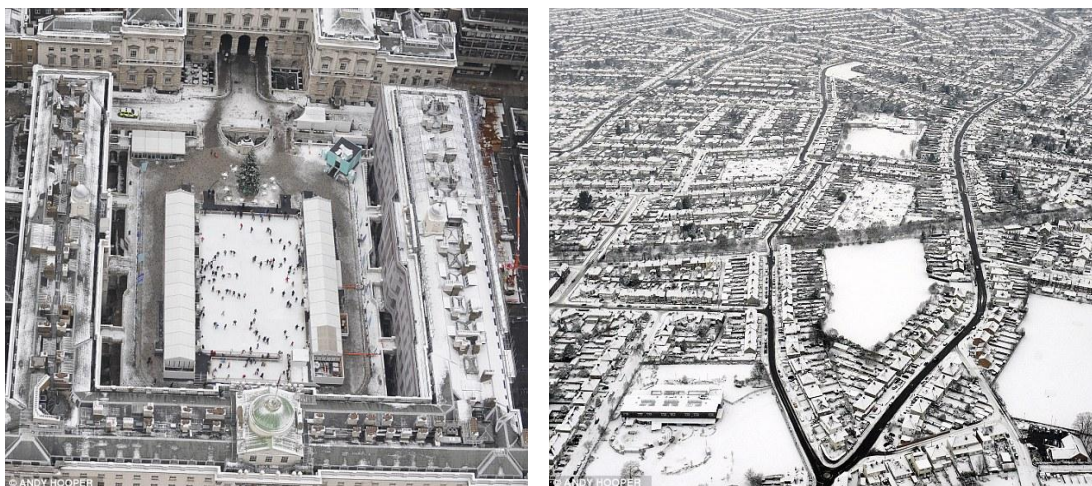


Figure 2.24: The overhead images are very sensitive to the climate change and environmental conditions, winter overhead and aerial views of South London, Colourless landscape covered by the snow (<http://www.dailymail.co.uk>)

### **2.4.3 Over-head images as a conceptual tool:**

Over-head images have the potential to help planners and urban designers observe, interpret and think critically about the city and its urban problems. Owen argued that, *“Techniques of simulation, direct observation, accurate recording and computer techniques which are based mainly on aerial images offer an effective means to record existing views and to predict digitally how those views might change if specific development proposals were implemented”* (Owen, 2009, p.550).

Top-down view helps designers and planners to reveal urban zones which have unexpected problems or development opportunities. Thus, this visual survey from over-head is the first step to understand the current features of the city and to compare the different districts and areas to find out which has the best development opportunities. Aerial images help to reveal both the constituent parts and their spatial relationships which is the first step to understand the city form and its structure. In the final stage of any urban improvement project, the overhead image can be used to prepare the final master plan and to compare the different improvement options.

Such comprehensive images can help in making decisions about the location of high-rise buildings, aspects and prospects of each district and the locations of safety and emergency services (Lynch, 1984).

### **Conclusion:**

According to reviewing the relevant references, it is concluded that, it has been widely investigated in urban design research that the city form and the spatial order of objects within an urban environment have a great influence on the human mind and its ability of perception. Many researchers have dealt with urban design as the process of changing something within the users' perception through an act (Fletcher, 2009). The effect of the design on the user's mind and the process of perception have been extensively studied. But a small amount of research has been carried out concerning the influence of the methods of city perception, their changes, variables and needs on the city design.

In spite of the abundance of literature about using aerial photographs as visual references which can provide city designers and planners with large amounts of essential information about urban areas, little has been written about how aerial

image can be utilized effectively as a method for city perception which helps observers to read the city through the panoramic view angle.

According to the literature review, many authors argued that, the contemporary city extends vertically and the spread of tall buildings, over bridges and the use of roofs in different ways has become a common feature of modern cities. It means that the number of observers who has the opportunity to observe the city from high levels of vision continue to increase. This research is unique and it contributes to literature by achieving the aim of the research to engage the concept of over-head imaging of the city in the process of improving the city centre.

It is concluded that the concept of over-head imaging can be utilized as an informative and expressive tool which sends distinctive messages to public observers, urban designers, city planners, city modelling experts and decision-makers about the design and the visual profile of the city. Over-head images can be a helpful tool for assessing the current image of the city and discerning its problems, recording historical changes in the city form, determining the impact of the different urban development projects on the visual appearance of the city, presenting development plans to the public and using such image as a base image for city modelling and urban analysis. Clarifying the value of using over-head images confirms the motivation of this research to incorporate the concept of over-head imaging in the processes of improving the visual image of urban areas.

These comprehensive views; vertical, oblique and horizontal are affected by some factors related to the observers, the height of eye level, the timing of vision, the climate, the environmental changes and the view angle. Each factor is discussed to clarify its impact on the way of reading the visual image of the city from over-head.

Within the introductory context, the next chapter focuses on discussing the main components of the visual image from over-head images and how they differ from the components of the images from the street level in terms of their visual attributes and the most observed objects in these images.



# *Chapter 3*

**The image of the city centre:  
physical components and  
visual attributes**

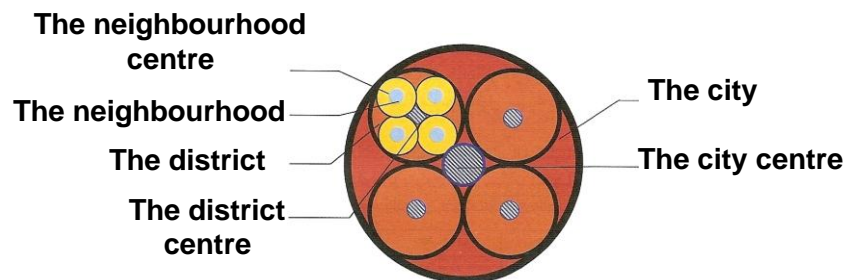
# Chapter 3

## The image of the city centre: Physical components and visual attributes

### ***Introduction:***

This part investigates the physical composition of the city centre and how its major components are related and arranged within its image. Furthermore, this part aims to identify the visual attributes of the observed objects in the image of the city centre. The motivation to investigate the proposed issue is based on the principle that to improve the visual image from over-head, it is important firstly to understand the composition of this type of image and how its visual attributes differ from the street level image. To make an action which is proposed to change something in the user's mind, it should firstly investigate the way by which this mind read this action.

The physical composition of the city centre is the manner in which this district is arranged or structured. We should firstly identify the components of the whole city as it is classified to four areas; homogeneous areas (Districts), special areas (Military areas – graves areas – historical areas....), circulatory areas (Nodal points; squares and plazas – streets and pedestrian paths) and central areas (City centre – smaller centers – central services.....). Figure 3.1 shows the idea of hierarchy in the city design.



*Figure 3.1: The hierarchical system of the different centres in the city (Al Wakeel, 2008)*

### **3.1 Names and characteristics of the city centre:**

Downtown is an American word which was used for first time in 1825. This word means the main business section of a city. In the United States, central business districts are often referred to as “downtown”. In most cities the downtown area is home to the financial district. Historic sections of the central business district may be referred to as “old town” while the term “inner city” is sometimes not used literally but rather evocatively as the same as the term “midtown”.

“City centre” is an alternative term which is defined as an area that is approximately central within some larger region. It is described as a large and densely populated urban area that includes several administrative buildings. It is the Central Business District (CBD). The term “city centre” is the formal term in UK, Australia, Ireland, China, and New Zealand. It can be also translated as “city core”. In the United Kingdom, Australia, South Africa, Canada and New Zealand, the term is often just shortened to “city” ([http://wn.com/central\\_business\\_district](http://wn.com/central_business_district)).

A city can have more than one central area as in the case of London which has two city centres, namely the City of London and the medieval City of Westminster. The city centre is likely to have distinguished characteristics or qualifications as following (TDRD, 2003):

- Distinct land use patterns different from the surrounding areas.
- High concentration of public buildings and offices.
- Tall/high-rise building to maximize land use of expensive real estate.
- Concentrated human activities in the different functional zonings.
- High concentration of traffic and high use of public transport.
- Great concentration of pedestrians flow.
- Specialist shops and major department stores.
- Availability of social amenities such as cinema halls, clubs and theatres.



- Little housing, but often hotels.
- Little or no industry.

Each city centre is unique in its roles or functions and its image. There are several key factors leading to a city centre's formation and evolution over time, including; climate, topography, proximity to natural resources, proximity to transportation routes, cultural trends over time, government policies and commercial and industrial development (TDRD, 2003).

The central areas can be classified according to their location into metropolitan city centre and suburban city centre. According to its function there are market, historical, cultural and educational centres and centre for entertainment and leisure. In terms of range of population or users, there are very crowded, stable and decline centre.

### **3.2 Major components of the image of the city centre:**

The image of the city centre represents a complex visual composition which includes many observed objects. From analysing both the over-head images and the images from the street level, it is found that both types of images includes the same basic components which are; the streets network, built objects, spaces patterns and the urban elements which give the area its distinguished identity. But the visual attributes of each component and the way of reading them through the both types of images seem to be different.

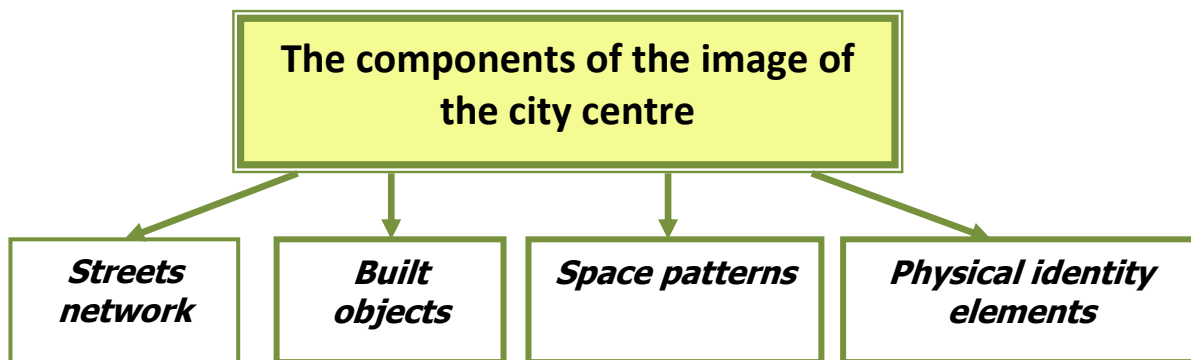


Figure 3.2: The physical composition of the city centre image

The following paragraphs investigate mainly the importance of each component and its role in experiencing the image of the city centre from over-head. Furthermore, the visual attributes and urban features attached to these components are discussed to clarify the new aspects which are added to the ordinary way of the image perception from the street level.

### **3.2.1 Streets network:**

Lynch indicates that we choose paths not only to reduce physical exertion but also to develop and maintain efficient mental descriptions of environments. Lynch connects between the visual experience of the city and the design of streets network because the greater part of our city experience arises from our movement through the city (Lynch, 1961) (See Figure 3.4).

Visually, the comprehensible streets network plays an important role in connecting the components of the visual image because paths act as frames for spaces, approaching axes for buildings and as the skeleton of the whole over-head image. According to Hillier definition of streets network, it can be stated that cities are large collection of buildings held together by a network of streets which has certain geometry and topology (Hillier et al, 2010). The visual attributes attached to the paths such as texture, direction, scale and colour help to understand and differentiate the various types of streets when they are observed from above. The observer from high level of vision can read the image of streets network in terms of its geometrical form, angularity, intersections and directions rather than the actual metric distance and the details of the street furniture (See Figure 3.3).

Generally, the streets network of the city centre is distinguished from the streets network in other areas by the following features:

- High concentration of traffic and pedestrian walkways which make the street network of the city centre more vibrant and dynamic.
- High use of public transport.
- The presence of flyovers and bridges.

- Elevated walkways (movement links between tall buildings).
- Intensive use of street furniture and signage.



Figure 3.3: The main perceptual aspects of the streets network as a component of the over-head image. London City Centre, United Kingdom (<http://www.worldarchitecturenews.com>).

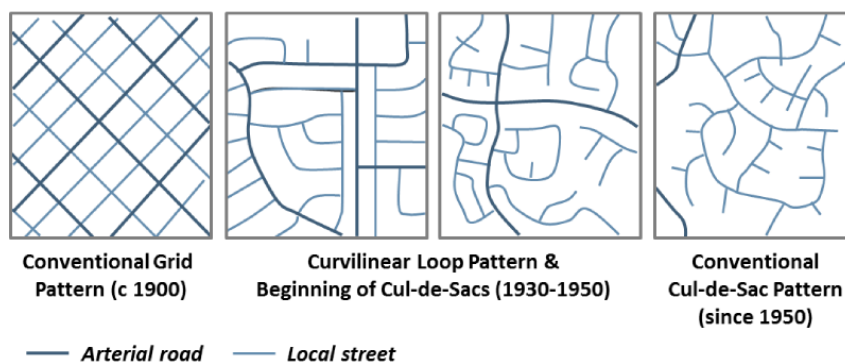


Figure 3.4: The design of the streets network affects the image from street level and from over-head (Grammenos et al, 2001)

The design of the streets network affects the senses of sequence, continuity and flow of the paths (Estremadoyro, 2003). However the sense of sequence is related to the image of the streets network from the ground level, the sense of continuity is related to the image of the streets network when it is observed from high levels of vision as shown

in Figure 3.5. The streetscape is an aspect related to the terrestrial images while the over-head image adds the aspect of roofscape to the perception of streets network



Figure 3.5: The difference between the sense of sequence of the streetscape during moving through the streets and the sense of streets continuity, intersections and roofscape in the over-head images. Left: Sequence of streets, London, UK (<http://www.zastavki.com>) Right: Central Paris, France (Carmona et al, 2010 p: 83)

### 3.2.2 Built objects:

Buildings are the dominant object in the image of the modern city centre due to the shortage of open spaces. Such image is articulated by the dense urban fabric which includes both modern and historic buildings as shown in Figure 3.7. Mixed-use buildings represent the main type of buildings in the central areas because of the multifunctionality of this district. *The built environment of the city centre is distinguished by the existence of the following buildings:*

- Contemporary buildings (Shopping malls, office buildings, multi stories garages....) and historic buildings (Citadels, temples, churches, mosques ...).
- High-rise buildings (Office buildings, shopping centres.....) and low buildings (Libraries, theatres, cinemas...).
- Single and mixed use buildings.

- Urban buildings (Active frontage, street dependent ...) are usually found in the central area but anti urban buildings (Blank frontage, car dependant ...) are usually located in the suburban centres.



Figure 3.6: The uses of roofs are frequently observed in the image of modern city centre. Spiral Cafe, Bull Ring: Birmingham, UK (<http://expbirmingham.wordpress.com>)



Figure 3.7: The dense built patterns in the modern city centre image, London City Centre, UK (<http://www.whats-on-in-london.com>)

Visitors of the central district often want to see something new and different. The unique character of the city centre can be achieved mainly by the existence of unique buildings in terms of uses, forms, ages and skyline (See Figure 3.8).

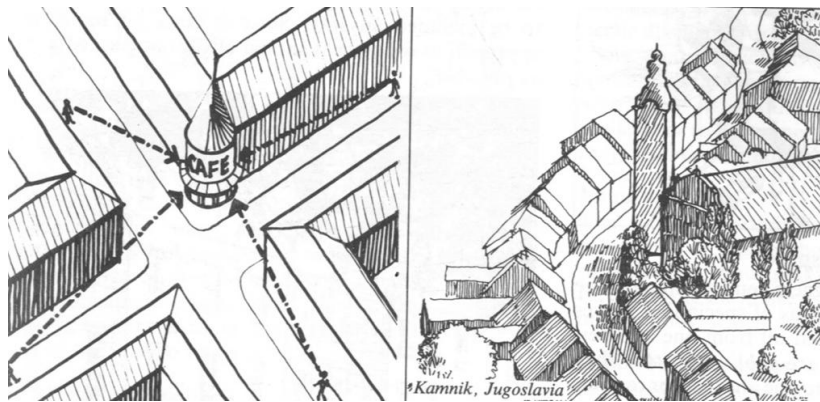


Figure 3.8: The built objects that have unique character can mark the image from above and be used for orienting the movement from the street level (Bentley et al, 1985 p: 55).

Experiencing the built objects from high levels of vision gives the observers the opportunity to perceive additional aspects which cannot be remarked from the street level. These aspects are as following:

- The design elements; outline form, uses of roofs, contrast between solids and voids, textures and colours of the building (See Figure 3.9).



Figure 3.9: The perception of built objects through the over-head images. “The Razor”, the 148 meter-tall Strata tower topped with a trio of turbines that produce power, London, UK (<http://inhabitat.com/tag/london>)

- The fit of the building into its architectural landscape.
- The site of the building and its approach axes.

- The relationship between the building and the other built objects in its neighbourhood.
- The importance of the building according to its scale and uses of its roofs.

On the other hand, the perception of buildings from the street level focuses mainly on the design of facades and to what extent this building has active frontages which influence the public realm surrounding the building as shown in Figure 3.10.



*Figure 3.10: A comparison between the visual effect of the passive facades and the active frontages on the image of buildings from the street level. Left: Leisure parade in Liverpool, UK (<http://farm4.staticflickr.com>) and right: Shopping centre in London, UK (<http://www.whats-on-in-london.com>)*

### **3.2.3 Patterns of spaces:**

City centre contains many spaces with different functions because of the variety of users of this region (residents – workers - visitors) and the different services and activities which occur in this busiest area of the city. These patterns composed of public and private spaces which can be connected with continuous pedestrian walkways, paths or trails. The public realm and open spaces are represented in the image of the city centre as the areas of visual comfort, dynamic life, natural objects and open views. There are different types of urban spaces which appear in the image of the city centre. These types are illustrated in Figure 3.11 (Loukaitou-Sideris & Banerjee, 1998):

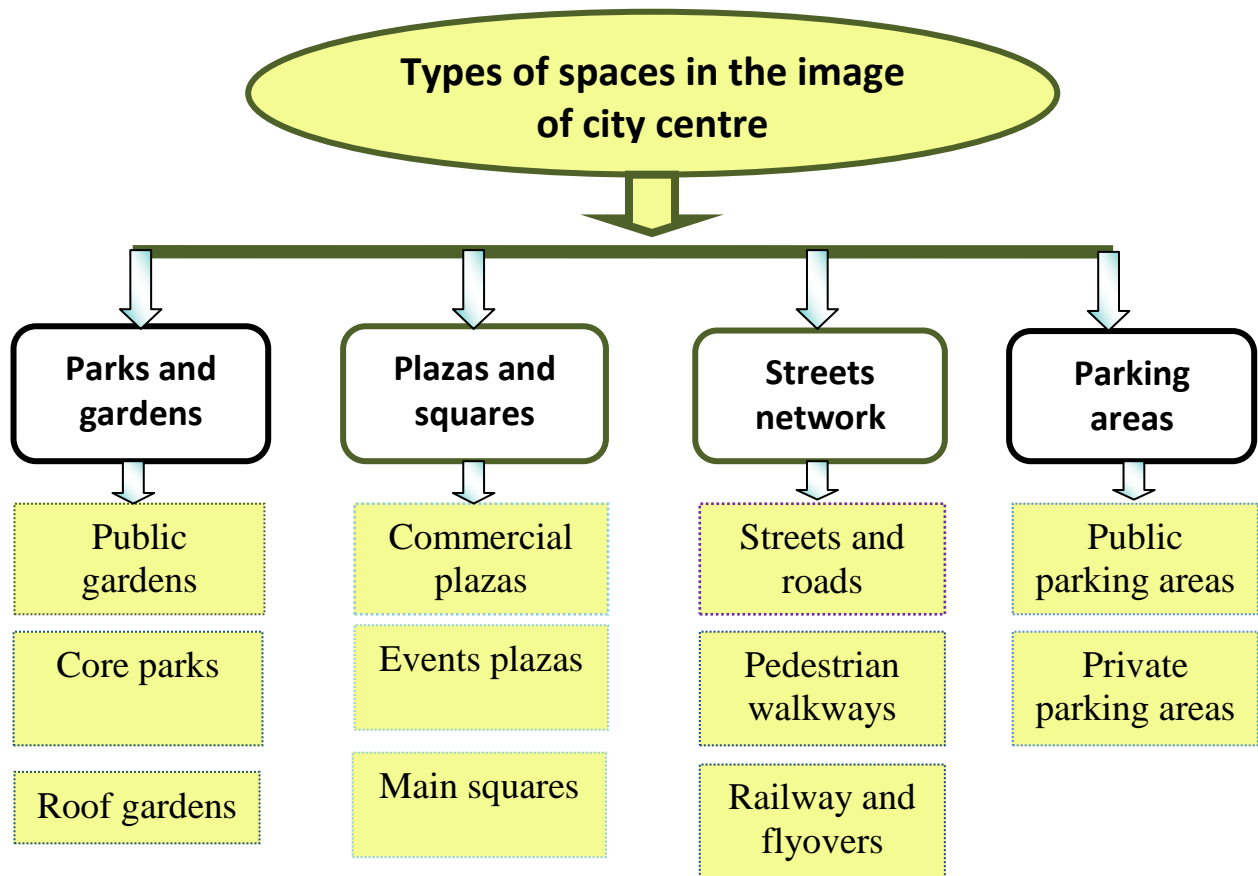


Figure 3.11: The different types of spaces which can be observed in the image of the city centre

The urban spaces physically articulated by their walls, floors, visual activities and ceilings and they have many forms, uses and architectural elements. There are certain attributes can be perceived through the image of spaces either from the street level or from higher levels of vision (See Figure 3.12):

- The proportion of the space which means the relation between the height, length and the width of the space.
- The axes of accessibility to each space such as paths, ramps, gates or slopes.
- The enclosure and openness of each space.
- The contrast between the open and closed or between linear and central spaces.



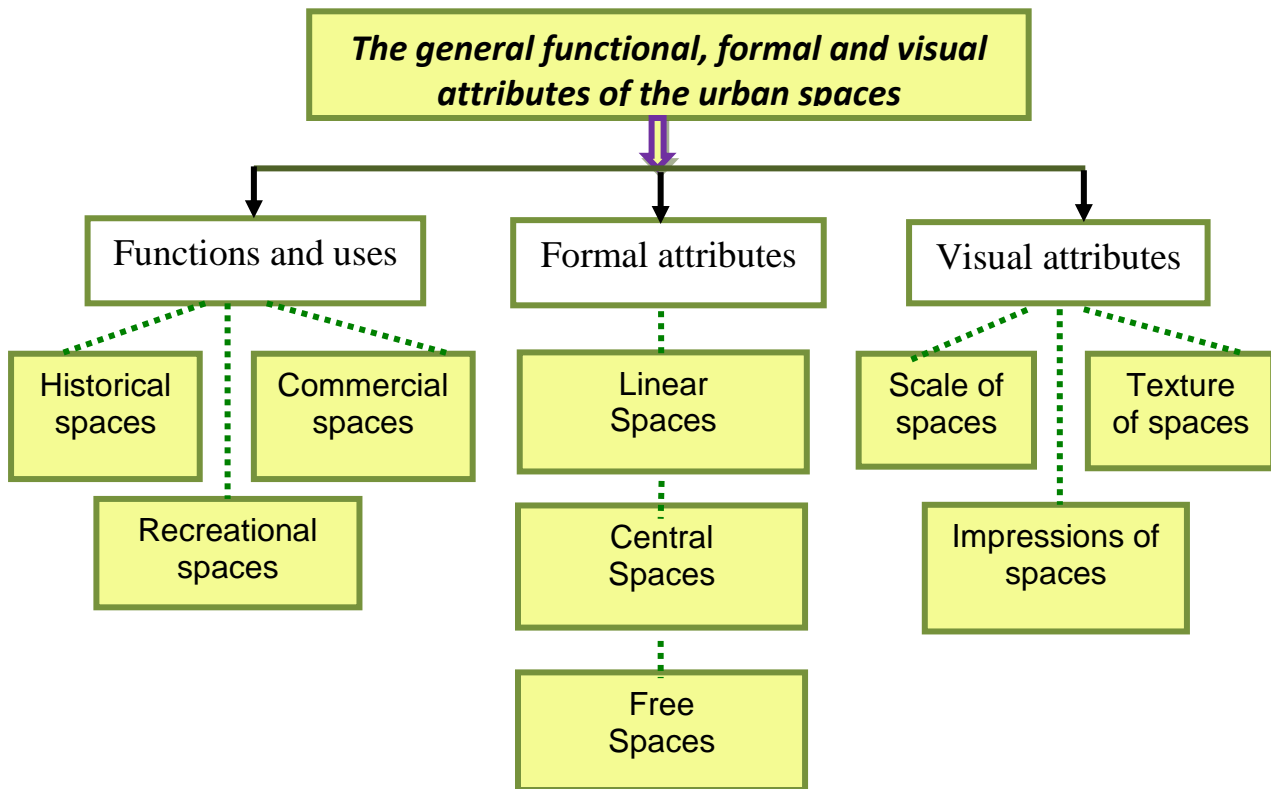


Figure 3.12: The patterns of spaces in the both types of imaging of the city centre are experienced in terms of their forms, impressions and functions

- The green spaces catch the attention of the observers more than squares and plazas. The green areas such as parks and big gardens can be considered as the source of visual delight therefore the presence of such areas is very crucial to the visual appearance of the crowded city centre. Actually adding green areas to this busy district helps to maintain alive image full of different activities during the day and night.
- There are many qualities which affect the visual appearance of the spaces and the way of understanding their visual attributes. These qualities are coherence, legibility, complexity and mystery (Lynch, 1960).
- Space boundaries play a significant role in both types of city images to help the observers in recognizing the area of the space, to develop the senses of openness or enclosure and to encourage urban life and different human activities to take place inside the urban spaces (See Figure 3.13).

- The impressions about the space such as safety, convenience, scale and configuration, composition and surfaces, furniture and accessories, ornamentation and landscaping all symbiotically combine as supportive setting for human intention and action.

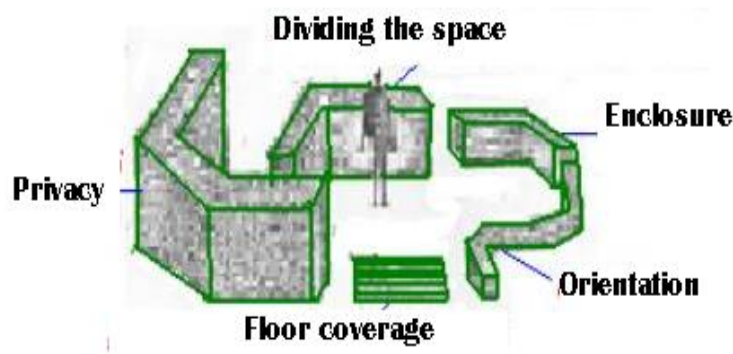


Figure 3.13: The importance of green elements as boundaries of the space

Observing the urban space through the over-head image increases the sense of floors and horizontal planes and decreases the sense of vertical determinants. Observing the space from high levels of vision helps in understanding the landscape rather than the details of furniture elements and space walls.

The roof garden is a distinguished type of green spaces which can be perceived clearly through the over-head images. There are three types of roof gardens as following (Osmundson, 1997):

Public roof garden: It is constructed on the top of public buildings. It is designed for large number of users and provides an opportunity to different social activities such as meeting and celebrations as shown in Figure 3.14.

Interactive roof garden: It is available to certain type of users, for example the roof gardens of hotels and hospitals.

Private roof garden: It is found on the top of houses and villas. It is available only to a person or to a family who uses this house.



Figure 3.14: Public roof garden, aerial photo of a restaurant on a top of a tall building in London, UK. (<http://www.sciencephoto.com>)

There are a number of reasons and benefits for bringing the green area up to roof level. A few of these are:

- This kind of gardens is considered as the best solution of the visual problems of the roofs such as the undesired image of old elements stored on roofs. So roof gardens keep a pleasant clean and changeable appearance of roofs.
- These gardens help in improving air quality through the photo synthesis process of absorbing carbon dioxide and returning oxygen to the environment.
- Roof garden acts as thermal insulation for the top floors of the buildings and improves the energy performance of buildings.
- These spaces encourage more human activities and help in solving the traffic problems because the users could find a very near place to do many different kinds of activities.

Each space in the city centre should have certain function according to its location and the functions of the surrounding buildings. These functions reflect the land uses in the district and how these uses meet the needs of users. Figure 3.15 shows the role of built objects as boundaries for open spaces and how this role is affected by the change of the height of the sight level.

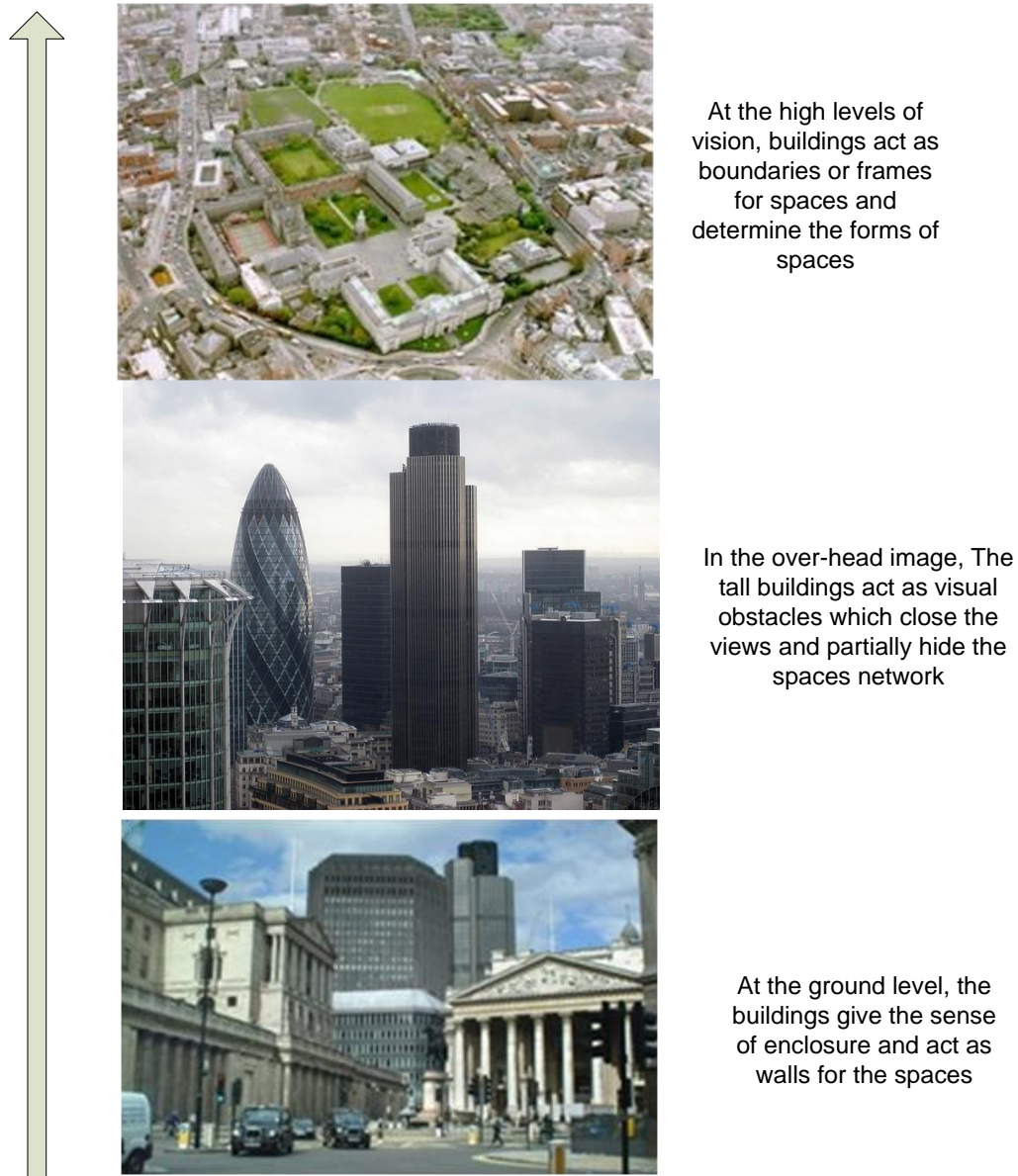


Figure 3.15: Buildings as boundaries of spaces. Top: Trinity College, Dublin, Ireland (<http://hotels-ireland-en.ghix.com>), Middle: London City Centre, UK (<http://londonist.com>) and bottom: Canada square, Canary Wharf, London, UK (<http://occasionaltourist.blogspot.com>)

### 3.2.3 Physical identity elements:

These elements form the base for the design guidelines of the city centre and give the district a special identity (SDS, 2008) (See Figure 3.16). The urban development of the

area should consider these special features by protecting, enhancing or incorporating these features in the new patterns.

The successful image should highlight these physical elements to enable the observers to recognize the general style of buildings (height, texture and colour) and the way by which the space patterns are organized (compact patterns, linear patterns,....).



Figure 3.16: The physical identity elements in the old Cairo City Centre, Egypt  
([www.worldexecutive.com](http://www.worldexecutive.com))

### 3.3 The visual attributes of the observed objects:

Researchers have investigated the role of the visual attributes in strengthening objects recognition (Wang et al, 2009) and generating descriptions of unfamiliar objects (Farhadi et al, 2010). We examine how the basic perceptual cues such as colour or shape exploited to guide attention to certain aspects of the visual image. The visual attributes which are attached to the observed objects are constant in both types of city images; the image from the street level and from above but the way of reading these attributes and the impressions which are conveyed through them to the observers are different. The following paragraphs focus on the visual properties of the observed objects when they are viewed from over-head.

#### 3.3.1 Types of visual attributes:

There are two principal types of visual attributes which can be used by the observer to understand the composition of the visual image as follows (See Figure 3.17):

- Visual attributes that the human visual system relies upon for composing the impressions about the urban area.
- Visual attributes related to the observed context or what can be called contextual cues.

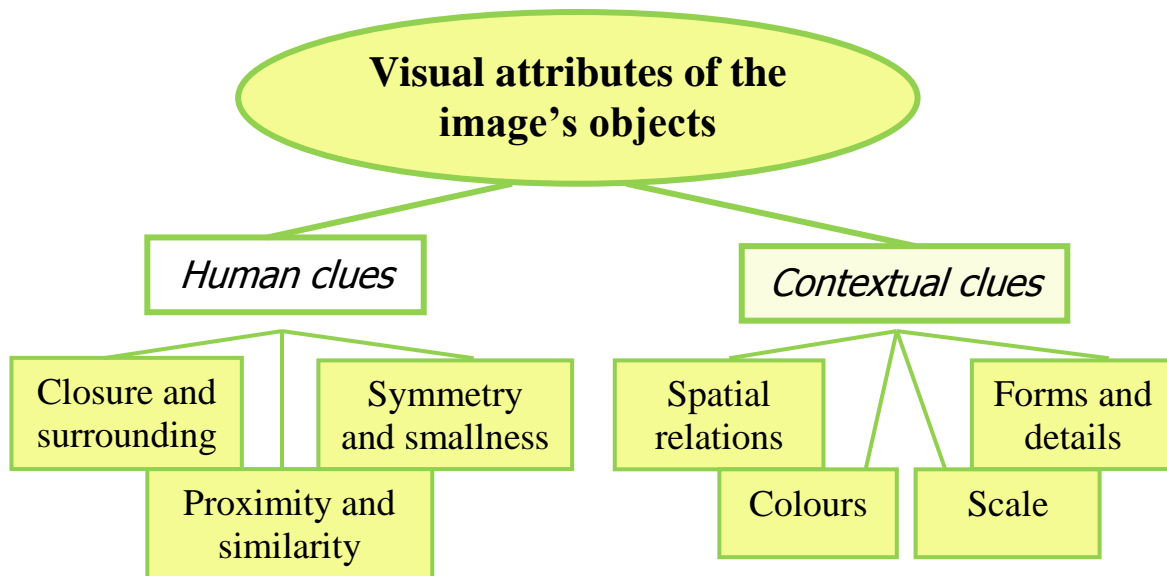


Figure 3.17: The two main categories of the visual attributes; the visual attributes of the observed objects and the visual attributes related to the techniques of human perception of objects

#### 3.3.1.1 Human visual clues:

Regarding the human visual clues, they can be defined in terms of certain concepts related to the human perceptual skills which should be understood to know how the objects within the image are recognized according to these skills. Human perception is the reception and coordination of information received through our sensory systems in order to make sense of the environment and to behave effectively within it. Our perceptual systems do not passively receive stimuli from the image; instead they actively select, organize, interpret, and sometimes distort sensory information (<http://science.jrank.org>). Because the perception process begins with the vision, it is very crucial to clarify the visual principles which our visual system uses to compose the impressions which borne in mind when we look around us. These visual principles do

not change by changing the sight level or the location of observers. These principles are defined in the following points (Soegaard, 2010):

- Proximity; where we view a number of objects, whether similar or not, and tend to perceive groups in those closest together.
- Similarity; which means that we tend to identify groupings from those objects that are similar in some way, either in their own form or colour or their background.
- Figure-ground; when we view a visual field, to see one object as more prominent against a background. In this way we see the scene as having two component parts. In some cases the ground catches the attention from the figure or in other words the background dominates the object. In other images the figure becomes the dominant against its ground.
- Surroundedness; where an area which can be seen as surrounded by others will be read as discrete figure (See Figure 3.18).
- Smallness; It is to identify small elements at the expense of larger ones. A small object will therefore be read against a larger background (See Figure 3.19).



Figure 3.18: An example of difficult interpreted shape which depends on the principal of surroundings.

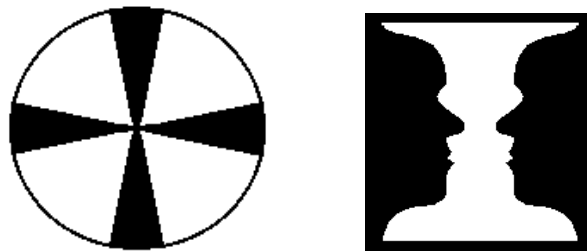


Figure 3.19: Left: we are more likely to see a black cross rather than a white cross within the circle because of the principle of smallness. Right: the famous ambiguous figure devised by the Danish psychologist Edgar Rubin.

- Symmetry; which perceives discrete objects against a regular or irregular background where elements have symmetry about their centre.
- Closure; reflecting the brain's propensity to form the most easily comprehended shape from groups of shapes (See Figure 3.20)



Figure 3.20: The principal of closure; Interpretations which produce 'closed' rather than 'open' figures are favoured (<http://www.catnaps.org>). Gestalt principles in the perception of form

- Interposition: When the boundary of an object is interrupted by the presence of another object, we use this pattern of blocking as a cue to determine the object as more distant from us. The near object is perceived as interposed between the far object and us as shown in Figure 3.21 (Ittelson, 1960).

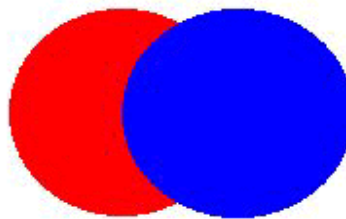


Figure 3.21: The visual theory of interposition. The blue circle is reported to be closer since it overlaps the red circle (<http://webvision.med.utah.edu>)

### 3.3.1.2 Contextual clues:

The contextual visual attributes related to the observed objects can be listed as follows:

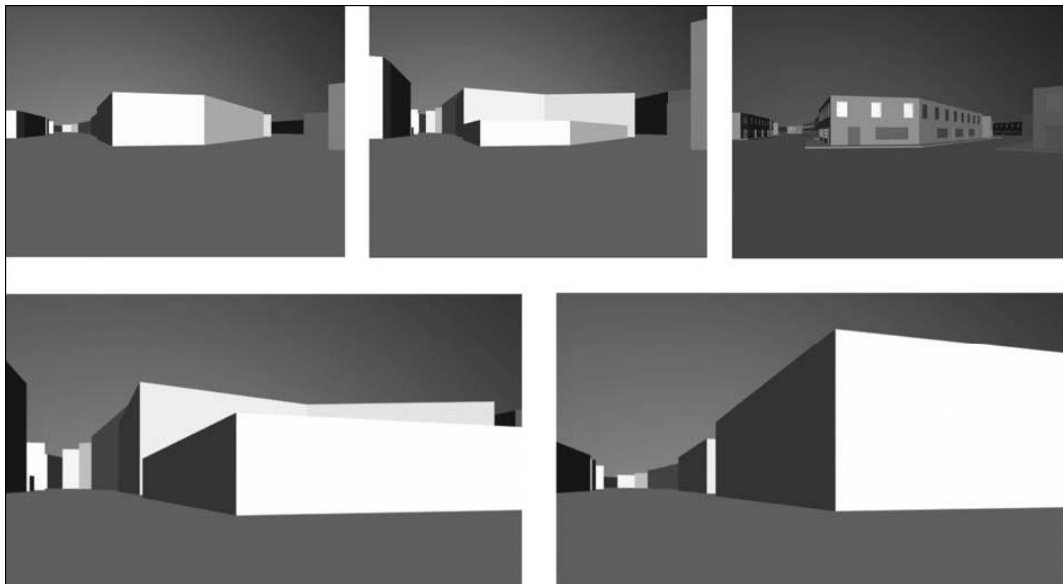
- Scale and size cues (Mavridou, 2007):

It will be focused here on the urban scale which is defined by the relations of buildings in an urban environment and their relation to the space they create. This type of scale is apprehended visually from a single vantage point or through movement (Montello, 1998). Scale is affected by the forms, heights and colours of the observed objects. For



example, the perception of the length of a road is strongly related to the heights of the buildings along this road. Mavridou in her paper “*Perception of Architectural and Urban Scale in an Immersive Virtual Environment*” presents the results of a series of experiments, which have been conducted within a virtual environment as shown in Figure 3.22 (Mavridou, 2007). She concludes that the scale of an urban environment is a relation of form to space and not simply an attribute of form or an attribute of space. This scale is named cityscape scale. Cityscape scale defines the complex relation of what a human mind perceives during movements through the different spaces.

At high observation points, size perception is greatly diminished where the ordinary task of estimating distances becomes more complex (Oh et al, 1985). The cue of relative size is very helpful in interpreting the overhead images as shown in Figure 3.23. The basis for this cue is that the larger of two identical objects tends to be perceived as closer that the smaller one (Soegaard, 2010). Because of the difficulty of perceiving the size of the observed objects separately when they are seen from above, the observer tends to compare the object with its surroundings and use the cue of relative size.



*Figure 3.22: The perception of urban scale. The top row: The perception of cityscape scale as vista. The bottom row: The perception of cityscape scale through movement and the effect of buildings heights on the perception of the width and length of the street (Mavridou, 2007)*



Figure 3.23: The relative size as a cue for perceiving the objects in the vertical overhead image. Vertical photograph of London (<http://dpshots.com>)

- *Depth cues:*

The distribution of light and shadow on objects is a powerful monocular cue for depth perception (Soegaard, 2010). The depth of the image can be perceived horizontally as in street level image or vertically in the case of overhead images. From the ground level, the sense of maximum depth occurs in the linear spaces. Also the maximum sense of street depth occurs at the elevation views rather than the other views as shown in Figure 3.24. On the other hand, the perception of depth from high observation points is affected more by the height of buildings, the materials textures, the height of the sight line and the amount of light and shadow as shown in Figure 3.25 and 3.26. Depending on the depth cue as an attribute to understand the overhead images is more effective in day images rather than night images because of the shading effect which adds volume and sense of 3D images. Texturing objects can add depth so objects that should look closer to the viewer need to have more visible texture than distant objects (<http://www.ncc.commnet.edu>).



Figure 3.24: Maximum perception of street depth occurs in the elevation view of the street rather than the side view. Left: Side view of Chamberlayne Road at night, London, England (<http://www.earth-photography.com>). Right: Elevation view of streets in London, England (<http://citynoise.org>).

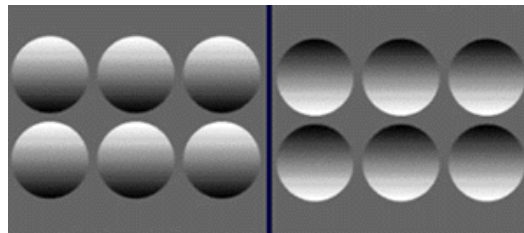


Figure 3.25: Highlights and shadows provide information about depth (<http://webvision.med.utah.edu>)



### Height of sight line



Figure 3.26: The impact of the height of the observation point on the perception of depth in overhead images. The sense of the horizontal depth diminishes and changes to vertical depth when the city is observed from high levels of vision. Left: Khan Ga'afar and El-Mashad El-Hussayni Streets, El-Husseini (<http://flickrhivemind.net>). Middle: View from top of Bab Al-Zuwela (<http://henn-diereise2010.blogspot.com>). Right: Aerial view of old Cairo City Centre (<http://www.pbase.com>)

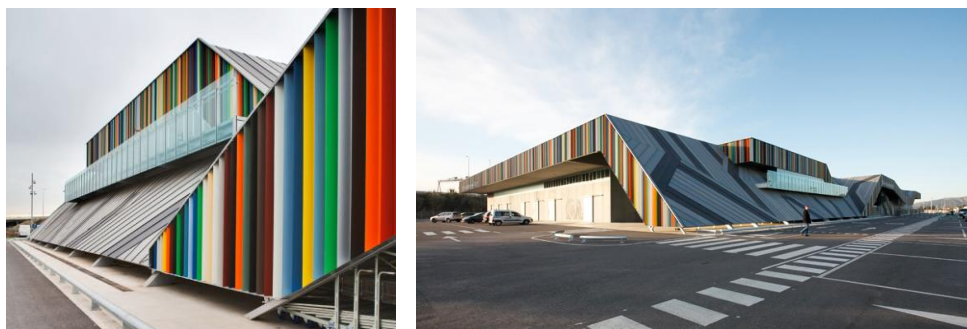
- *Colour cue:*

Colour is an important cue for allowing us to interpret complex scenes and recognizing the objects therein (See Figure 3.27). The effect of different colours should be understood to be employed correctly in order to create legible attractive images. Some painters, notably Cézanne, employ "warm" pigments (red, yellow and orange) to bring features forward towards the observer, and "cool" ones (blue, violet, and blue-green) to indicate the part of a form that curves away from the picture plane (Kaiser, 1997). This way can be used to attract the observer's attention to certain components or objects in the visual image as shown in Figure 3.28.

In the case of observing the city from overhead where the observed objects are distant, the colours of roofs play an important role in the perception of the overhead images as shown in Figures; 3.29, 3.30 and 3.31.



*Figure 3.27: The effect of discoloured objects which creates the sense of boring images, Cairo City Centre (<http://breakawaybackpacker.com>)*



*Figure 3.28: The use of coloured roofs to act as resources of delight in the overhead images. The multi-faceted angular roof structure (<http://www.thecoolhunter.net>).*



Figure 3.29: The use of colour cues catches the attention to certain objects and add a landmark to the image. Central Saint Giles is a mixed-use office building designed by Renzo Piano. The striking landmark building is covered with ceramic tiles in bold shades of yellow, orange, green and red (<http://www.guardian.co.uk>).



Figure 3.30: The use of coloured lighting to create attractive images at night. Night overhead image of The Bullring Shopping Centre stand out with its bright yellow and pink lighting, Birmingham, UK (<http://www.dailymail.co.uk>)

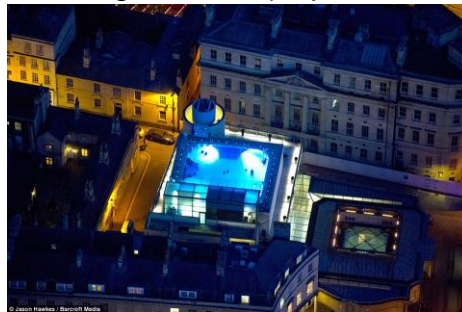


Figure 3.31: The active spaces on the top of buildings can add colours to the image of the city centre. Thermal Bath Spa with its rooftop swimming pool, Bath, UK (<http://www.africangrio.com>)

**Conclusion:**

After introducing the concept of over-head imaging in terms of types and importance, this chapter answers the second research question regarding the main components of the image of the city centre and the visual attributes of the observed objects. Both types of city centre image have the same components but the way of reading them and making sense of their properties differ according to various factors. Because the process of image perception is an interaction between the observer and the observed objects, not only the contextual cues but also the human cues which affect this process are clarified in this chapter. Understanding the way of perceiving the different components of the over-head image is a crucial step in making decisions for improving such image. The following tables summarise the outcome of this discussion.

*Table 3.1: The difference between the perception of the observed objects from the street level and from overhead*

<b><i>The main components of the visual image</i></b>	<b><i>The perception of the image from the street level</i></b>	<b><i>The perception of the over-head image</i></b>
<b><i>Streets network</i></b>	The actual metric distances, the details of the street furniture, the sense of visual sequence, the entrances and exit points, the flow of movement and the forms of the streetscape are perceived clearly	Paths act as frames for spaces, approaching axes for buildings and as the skeleton of the over-head image. The geometrical form, angularity, intersections and directions rather, the sense of continuity and the forms of the roofscape.
<b><i>Built objects</i></b>	The design of facades and to what extent this building has active frontages and influence on the public realm surrounding the building, the style of fenestration, the entrances and exits of buildings, the uses of buildings, tall buildings give the sense of enclosure, block the views and act as the walls for spaces.	Outline forms, uses of roofs, solids and voids (Internal courts), textures and colours of buildings and their roofs, the relationship between the building and its surroundings and the importance of the building according to its scale and uses of its roofs.

<p><b>Patterns of spaces</b></p>	<p>The proportion of the space, the accessibility axes such as paths, ramps, gates or slopes, the enclosure and openness of the space, the contrast between open and closed or linear and central spaces.</p>	<p>The proportion of the space, the accessibility axes such as paths, ramps, gates or slopes, the sense of floors and horizontal planes increases and the sense of vertical determinants decreases. The landscape of the space is perceived rather than the details of the furniture elements and walls.</p>
<p><b>Physical identity elements</b></p>	<p>The general style of buildings (height, texture and colour), the use of local materials, the design of landmarks and the form of the skyline give the image from the street level its unique identity.</p>	<p>The way by which the space patterns are organized (compact patterns, linear patterns,...), the forms of roofs, the design of streets network and the distinguished edges can be used to support the identity of the area through its over-head image.</p>

Table 3.2: The difference between the perceptions of the visual attributes of the observed objects from the street level and from above

<p><b>The visual attributes of the observed objects</b></p>	<p><b>The image from the street level</b></p>	<p><b>The over-head image</b></p>
<p><b>Scale and size</b></p>	<p><i>This image is affected more by the architectural scale and cityscape scale.</i></p> <p><i>Perception of scale is affected by the forms, heights and colours of observed objects.</i></p>	<p><i>This image is affected more by the urban scale.</i></p> <p>Size perception is greatly diminished where the ordinary task of estimating distances becomes more complex.</p> <p>The observer tends to compare the object with its surroundings and use the</p>

		cue of relative size.
<b>Depth</b>	<p>The depth is perceived horizontally and the sense of maximum depth occurs in the linear spaces. Also the maximum sense of street depth occurs at the elevation views. The texture and materiality affect the perception of the depth from the street level.</p>	<p>The amount of light and shadows and the heights of buildings affect the perception of the vertical depth.</p> <p>It is difficult to make sense of the depth through night images.</p> <p>Texturing objects can add depth so objects that should look closer to the viewer need to have more visible texture than distant objects.</p>
<b>Colour</b>	<p><i>The use of coloured lighting can create attractive images at night.</i></p> <p><i>The colours of buildings facades dominate the image and catch the attention of the observers.</i></p> <p><i>The natural elements add colours to the image.</i></p>	<p><i>The colours of roofs play an important role in the perception of the overhead images</i></p> <p><i>The active spaces on the top of buildings can add colours to the image</i></p>





# *Chapter 4*

**The British experience of  
improving the visual image  
of the city centre**



# Chapter 4

## The British experience of improving the visual image of the city centre

### *Introduction:*

Urban improvement phrase considers the declining areas as sores or cancers requiring redevelopment activities to heal the body of the city (Furbey, 1999). The improvement of the visual appearance of the declining areas is a part of these activities. This chapter tries to investigate the general trends of the urban improvement in UK in terms of concepts, approaches and general aims. This investigation is an initial step toward the proposed approach for improving the visual image of the city centre. UK as an example of developed country which colonised Egypt for many years and has its impact on the form of the Egyptian city can be a successful selection. The similarity between the old cities in UK which includes a large number of historical buildings and the old Egyptian cities justifies the selection of British experience. The researcher who has spent 2 years in UK has had a big chance to collect the related data from different resources and to visit different British cities and use the direct observation skills.

It is found from analysing examples from the British city centres that the aim of the urban improvement process is to develop vibrant, mixed-use, sustainable and diverse lifestyles inside the city centre, to promote more sustainable patterns of open spaces and to ensure the ease of accessibility to these open spaces.

The Commission for Architecture and the Built Environment (CABE) which was established in 1999 has defined the objectives of urban improvement as to improve the character and identity, quality of public realm, ease of movement and the variety of activities and services (John and Evans, 2008: p.116). Regarding the urban form, the agenda is not about building new patterns but about restricting and reforming the existing areas wherever possible. Avoidance of unsightly vacant pieces of lands and

avoidance of unnecessary construction of new roads and bypasses which cause destruction or disruption for the existing areas, enhancing the appearance and liveability of streets and revamp their physical infrastructure are the main goals of the holistic development actions plan in UK (Perfect and Power, 1997). In the UK, the use of urban design codes has been stimulated by the demand for more effective ways of delivering a better designed, more sustainable built environment.

The idea of design coding designated a series of design specifications for redevelopment areas with varying degrees of details at different spatial scales so it does not kill the creativity. Design coding acts as specific guidance on detailing of built environment and public realm. For example, height of buildings, set backs from street, frontages, materials and textures.

The benefit of using urban design coding approach can be summarised as follows (Carmona et al, 2006):

- Codes set a framework of design principles and provide reference points with greater clarity and certainty.
- Proof of quality is demonstrated by the examples of projects that have used design codes.
- Codes successfully guide developers.
- The prescriptive nature of design codes inevitably reduces the scope for subjective interpretation. If implemented rigidly, design codes provide a preconceived and objective means to control the design of development.

#### ***4.1 Concepts of urban improvement in UK:***

The following points outline the concepts which control the improvement process in UK (William, 2004)

- The concept of “Planning as debate” which means that shaping future images of city centres needs public voices.
- The concept of “Spatial definition of the policy” or the spatial framework of the strategies.

- The general concept of imageability has been embraced in the urban design improvement programmes with emphasis on sight lines in master planning and attempt to render spaces more understandable to people entering them for the first time. This concept highlights the notions of visual clues which give the city its coherence and pleasurable image (John and Evans, 2008).
- The concept of the city centre partnership board which is a public private partnership whose purpose is to promote and sustain the city centre. The partnership board meets every 3 months to discuss and steer projects working towards developing more vibrant and viable city centre. In addition to the partners, there is a team which include “on street members”. The members of this team have their distinctive uniform and deal with visitors and local businesses in order to manage and monitor the urban quality of the city centre. Therefore this team can be considered as the link between the council and the users of city centre. The concept of partnership board means that improvement of the city centre should depend on private investments and initiatives which performing functions in the public realm. The main role of the public sector and the governments in this approach is to be facilitators which respond to, react to and regulate the private initiatives. City centre stakeholders, businesses properties owners, financial institutions, city council and the media have worked hard over the last 10 years to maintain the performance of the city centre and to promote its image (Loukaitou and Banerjee, 1998). Partnership board concept moves community involvement into a meaningful participation and away from merely keeping communities informed of what is happening (John and Evans, 2008).

#### ***4.2 Motivation of studying examples of redeveloped British City Centres:***

Investigating the British experiment of improving the central areas can be useful to develop creative solutions for the current problems of the Egyptian City Centres. Some of the current problems of the Egyptian city centres are as follows:

- Saturation of the CBD and the decline of the inner old city centre (Sutton & Fahmi, 1996).

- There was no clear mechanism for involving the stakeholder in the preparation or implementation of urban development plans. Therefore, public needs were not well addressed in these plans. Furthermore, the plan reflects the perceptions of the planners with other experts who carry out the preparation of the master plan. Many plans remain without implementation because of the shortage of fund or management and monitoring.
- Planning system based on master planning as in the case of Egyptian cities planning was criticized for its bureaucracy and rigidness which excluded stakeholders from participating in the planning process (Halla, 2007; Farhoodi et al, 2009). The strategies for improving Egyptian city centre do not consider the visual image as a priority during improving the urban areas. Accordingly, the implemented projects usually solve the economic and functional problems but do not have a positive influence on the views and visual appearance of the area.
- Applying the approach of generalisation in implementing the improvement strategies in all Egyptian cities without concerning the differences between the characteristics of these cities led to a big failure and caused more problems regarding the land use and visual image of the cities.
- The urban management suffers from centralization which has led to inadequacy of the methods of management in the councils of cities and the weakness of their organizational and administrative structure (Farahat, 2006). The objective of establishing physical links between the planning units in the local authorities and the regional centres has not been achieved.
- Evaluation system of development achievements focuses on the technical and economical issues and ignores the social, visual and environmental priorities. Measuring the failure or success of any implemented development project is not considered.
- The unavailability of governmental reports, master plans and documents of the proposed and already implemented projects for the public or researchers.
- The focus of most actions plans is on the land uses more than the effect of these uses on the quality of the area in terms of diversity, legibility, liveability

and amenity. There is no concern and no fund for urban design details which complement the image of the urban areas and affect the way by which the main components of the image are perceived. There are no regulations which control the formal feature of the urban design details so the image of the central area still full of contradictions and lacks the clear identity.

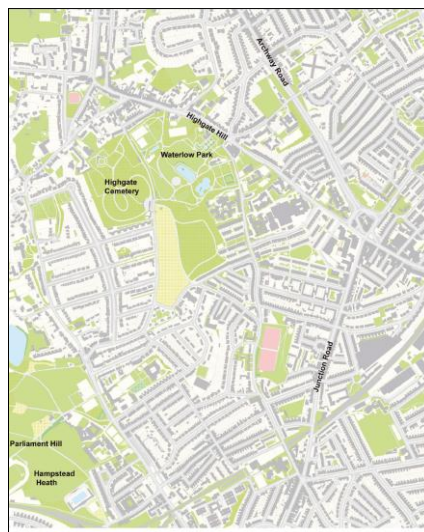
- Due to the overpopulation problem, the solutions focused on establishment of new cities more than developing the already existing cities and their centres.

### **4.3 Examples of projects for improving central areas in UK:**

There are wide ranges of improvement projects in UK which consider and apply the previous mentioned concepts, aims and approaches. In this part, the research tries to demonstrate three cases of British city centres in order to understand to what extent these projects consider the visual appearance of the city centre through the proposed actions plan and to conclude lessons which can be learnt from these examples.

#### **4.3.1 Improvement of Archway, London:**

This project has been exhibited and announced by the Better Archway Forum (BAF) a community group formed in response to earlier plans to improve Archway. According to the partnership approach, this community led consultation project is a part of a London-wide research programme called Urbanbuzz under the supervision of University College London (UCL). Figure 4.1 shows the location of Archway Road.



*Figure 4.1: The location of Archway Road, London City Centre, UK (BAF, 2008: p.4)*

The overall aim here is to improve Archway area by making Archway green, a vibrant, sustainable, permeable and pedestrian friendly centre (BAF, 2008). Transport for London (streets, buses, over-ground and under-ground), owners of large buildings (Archway Tower, Hamlyn House, Hill House, etc.), Whittington Hospital (NHS), University College London and all individual businesses and property owners in the area have a great role in preparing the action plan for this area.

To know the ideas and thoughts of public parts, there is a questionnaire which pushes the community to think about questions such as where would people like Archway to be in 10-20 years time? And what are the things about the study area that they would like to enjoy and feel proud of? The questionnaire is based on asking the community to select one or more action from the available options for improving open space, the pedestrian quality, visual quality, environmental quality and safety.

Here are some parts of this questionnaire which encourage thinking about the area and selecting the best action from various improvement options:

➤ *The improvement of Archway open spaces:*

There are limited activities for children and teens in this area. So the options for improvement are creation of:

- A high quality youth sports centre on the Highgate Hill edge of the Girdlestone Estate.
- A Skatepark in Archway Park.
- Arts Centre in the Methodist Hall.
- Better connected and landscaped public spaces.
- Tree-lined avenues linking the green spaces could include Archway Road, Lower Highgate Hill, Junction Road and Holloway Road.
- Green walls as distinguished boundaries for the open spaces replace blank walls, for example on the Archway Tower, Archway Tavern, Whittington House and perhaps more (See Figures; 4.2 and 4.3).



Figure 4.2: Archway before and after applying the proposed approach of green walls (BAF, 2008: p.12)



Figure 4.3: Left: The green corridors as an option to improve the sense of nature through the roads. Middle and right: Archway Tower before and after adding the green walls (BAF, 2008: p.25)

- Public space linking the Island to Archway Centre:



Figure 4.4: The public space on the Island is unattractive and features a disorderly arrangement of street furniture. Left: Aerial view of the Island. Right: View of the Island from the street level looking north-west. (BAF, 2008: p. 21)



- To make Archway more attractive, the options for improvement are:
- Use of high quality of architecture and building refurbishments.
  - Develop new key sites with landmark buildings.
  - Require maintenance plans with all planning permissions.
  - Introduce extra floors to correct gaps in the street frontage (e.g. above the Co-op on Junction Road or above the Post Office).
  - Recladding Archway Tower to improve the tower's appearance and eliminate wind blight in the surrounding public spaces.
  - The use of green roofs.
- To make Archway more permeable as shown in Figure 4.5:

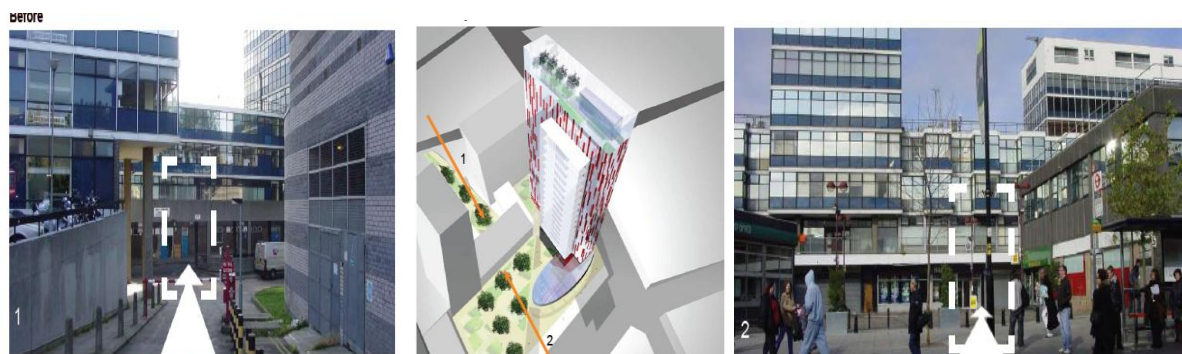
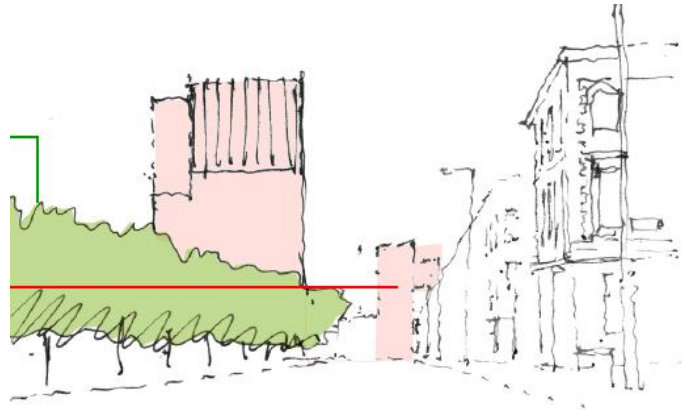


Figure 4.5: Improving the permeability and visibility of Archway Mall by creating a new route through the Mall to the Leisure Centre (BAF, 2008: p.25)

- To improve the buildings and create new landmarks as shown in Figures 4.6 and 4.7:



Figure 4.6: The current unattractive view of Archway Tower. The view of the tower is affected by the patchy and sparse trees in the front of the tower (BAF, 2008: p.35)



*Figure 4.7: Illustrations of possible alteration; the tower can be refurbished with a new surface treatment, the streetscape can be improved by adding a possible landmark at the end of Junction road and a cohesive avenue of trees to complement building facades to the east (BAF, 2008: p.35).*

The proposed alteration options which are stated in the questionnaire consider the integration between the different views from different visual levels. The cases of the Archway Park and the public linking space to Archway are good examples of considering the visual criteria of visibility and permeability in the proposed improvement plan as shown in Figures; 4.8 and 4.9.



*Figure 4.8: The existing view of the park's edges. The Park is cut off from the street by layers of walls and railings and very dense foliage at the park's edge (BAF, 2008: p.15)*

Could we thin the dense foliage to create better views into the park?

Could we remove or adapt the wall at the park edge to allow more direct access?

Is this a possible shared surface?



Opportunities for improvement?

Improved access and views from the street would increase the use of the park and make it safer, while improving the environment on the street.



Possible new routes into the park which could connect to a route right through

*Figure 4.9: The proposed improvement options which are studied from the street and from high visual levels (BAF, 2008: p.16)*

This example of improvement actions plan includes various lessons which can be learnt as follows:

- There is a clear vision which is translated to general aims of the improvement plan.
- The concept of partnership which is applied by involving wide range of partners from private and public sectors and considering the government or the council as not the only responsible of achieving this project.

- The use of unordinary type of questionnaire which is not based on asking some written or oral questions about the area however the questionnaire goes further to suggest options for improving the area to encourage the respondents to have a real contribution in the improvement process.
- The focus on improving the visual qualities as same as the environmental, economical and functional qualities. Achieving attractive, permeable, legible and visible area takes the same priority of achieving sustainable, pedestrian friendly, safe and multi functional area.
- The study of improving views of buildings and spaces depends not only on the views from the street but also from higher visual levels which translates the concept of comprehensive improvement. The cases of the Archway Park and the public linking space to Archway are good examples of considering the visual criteria of visibility and permeability in the proposed improvement plan.
- There is a recommendation in this project regarding the use of roofs to create green spaces which can make the image of the area more pleasant especially when it is seen from aerial levels.
- The questionnaire includes clear illustration for buildings and spaces before and after applying the proposed alteration.

#### **4.3.2 Leeds City Centre 2020 masterplan:**

Leeds has a distinctive location at one of the major intersections of the Northern Way from Liverpool to Hull and from Sheffield to Newcastle (Gates, 2004). Therefore Leeds City Centre is one of the top six retail centres in the UK (LCCM, 2006). Furthermore, Leeds is one of the UK's fastest growing cities. Figure 4.10 shows the administrative boundaries of Leeds City Centre. Some of the discussed ideas and aspirations have been turned into a statement of intent in "City Centre 2020 – a prospectus for our future". It listed the key targets as welcoming, cultural quality environment, well connected, legible, liveable, business friendly and sustainable city centre. This statement highlights certain milestones on a timeline spanning the years from 2008 to 2020 such as the opening of Leeds Arena (See Figure 4.11) and the first phase of a city centre park, the completion of the Eastgate Quarters, the

launch of a new pedestrian map and the use of modern office buildings as landmarks for the area as shown in Figures; 4.12, 4.13, 4.14 and 4.15.

Liaison officers have an important role in making decisions of improving the central area. Liaison officers are the on street members who have a distinctive red and black uniform. They ensure that the streets are welcoming for all kinds of users and deal with visitor enquiries and provide them with the city centre information.

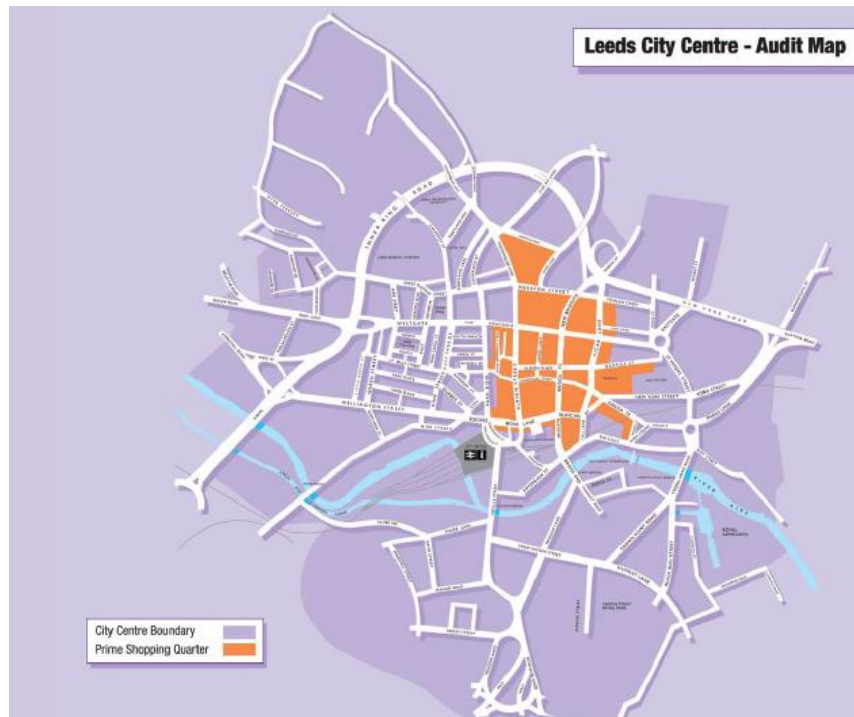


Figure 4.10: *The boundaries of the city centre as it is defined by the Unitary Development Plan. The central area occupies 462 hectare (4.62Km<sup>2</sup>) (LCCA, 2010)*

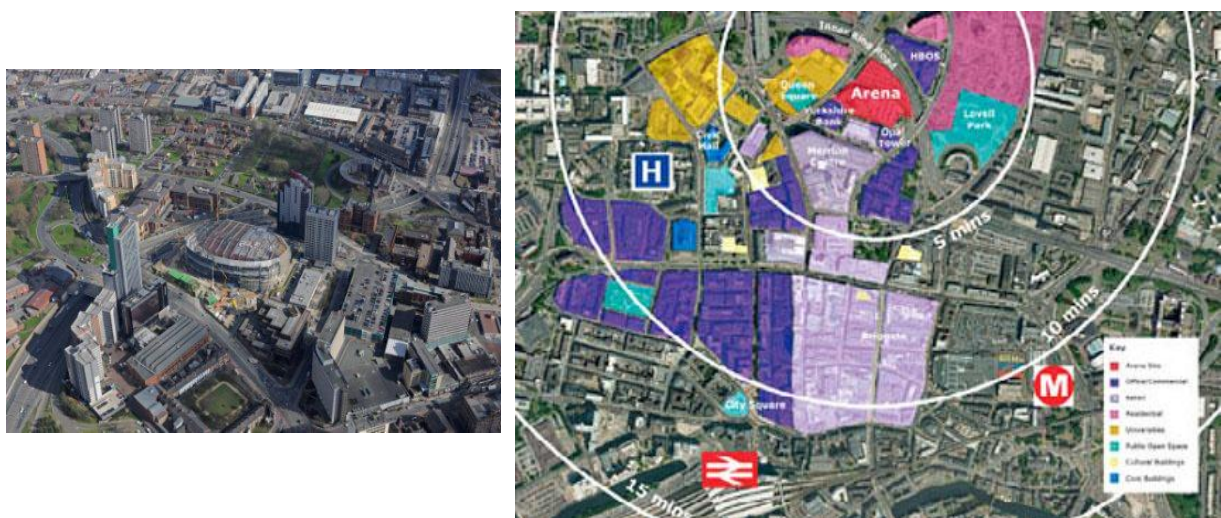


Figure 4.11: *The First Direct Arena has been the catalyst for the development of a new leisure quarter and this project helps to create one of the most exciting leisure*

destinations in the country (<http://www.leeds.gov.uk>) and (<http://architecture-view.com>)



Figure 4.12: Left: The over-head image of Leeds City Centre demonstrates the harmony between shapes of roofs, heights and colours of buildings and the contrast between natural and built environment ([www.google.co.uk](http://www.google.co.uk)). Right: The use of modern office buildings as landmarks for the area (<http://www.pinnacleleeds.co.uk>)



Figure 4.13: Left: The mural painted onto the side of buildings (<http://www.yorkshiredailyphoto.com>). Right: Roof glasses, historical domes and modern towers are the main physical identity elements of the over-head image of Leeds City Centre (<http://leeds-list.com>)



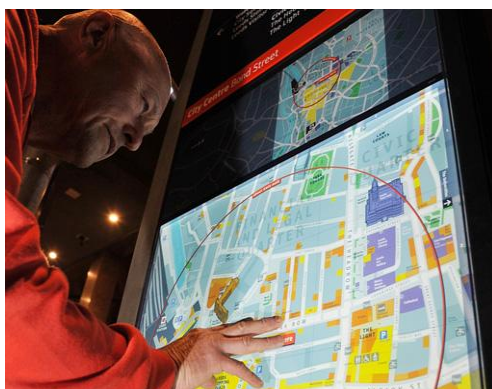
Figure 4.14: Park Square in the heart of financial quarter, Leeds City Centre (<http://en.wikipedia.org>)



*Figure 4.15: The Old Post Office Building, Leeds City Centre. The open space, street furniture and the statue in the front of the building have a great effect on highlighting this old building to be not lost in the image of the city centre ([www.aireboroughcivicsociety.org.uk](http://www.aireboroughcivicsociety.org.uk)).*

Developing a welcoming city centre is included in the proposed improvement plan. To achieve this goal, the action plan includes the following inventions:

- Promote the liveability of Leeds City Centre through on the streets events.
- Create new easy-to-follow maps and signs both physically on the ground and on the top of buildings and electronically on the internet and on mobile (See *Figure 4.16*).



*Figure 4.16: Leeds solar powered illuminated maps. (Walk It Leeds) is a pedestrian wayfinding system being implemented across Leeds City Centre to assist people to navigate the shopping, business and cultural districts on foot (<http://www.lacockgullam.co.uk>).*

- Increase the number of the city centre ambassadors.
- Improve the quality of the public realm and information at key arrival points.
- Improve accessibility to and within the city centre, e.g. with new pedestrian bridges, a completed inner ring road, and better cycle routes and facilities.
- Improve the quality of streets, by repaving and maintaining them and taking away unnecessary clutter as shown in Figure 4.17.
- Put in more benches and trees.
- Improve access to and from the train station.
- Releasing of the supplementary planning document “Tall buildings design guide” by Leeds City Council in 2007. The aim of the document is to establish clear principles and advice to ensure that tall buildings are well designed in appropriate locations which enhance the skyline. It provides a simple methodology to preserve the character and appearance of conservation areas and protect important buildings, views and settings (LCC, 2007).



*Figure 4.17: Improving the walkability of Leeds City Centre is an important priority of improvement policies (Unsworth, 2008)*

From the previous discussion about Leeds City Centre renaissance, it can be concluded that the preparation of Leeds City Centre master plan started 12 years before the targeted year which is 2020 and some development projects have been implemented every year. The improvement programme ensures that both private and public sectors has its voice in determination of priorities and general goals. The process of improving Leeds City Centre is based on a comprehensive system of improvement which does not focus on one side or criteria but it deals with the big



image of the area and all the factors which can affect its quality. However the appropriate inventions to achieve the aims of improving the area are determined clearly, the detailed suggestions for the future projects are not clear enough.

#### 4.3.3 Improvement of Sheffield City Centre:

The proposed actions plan suggests a range of development projects which can enrich the function and the image of Sheffield City Centre as shown in Figure 4.18.

The proposed projects are (YF et al, 2008):

- New Retail Quarter (Sevenstone).
- New Business District.
- Digital Campus/ Sheaf Valley as shown in Figure 4.19.
- Riverside Business District.
- Integrating the universities.
- City Hall and Barkers Pool as shown in Figure 4.20.

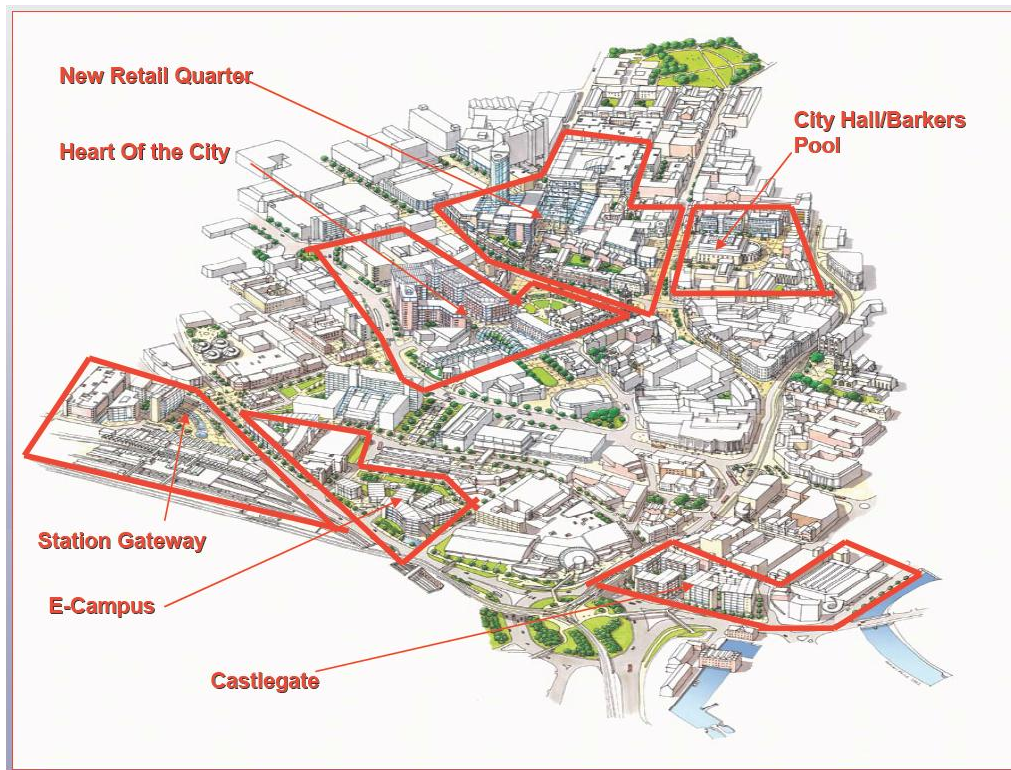


Figure 4.18: *Sheffield City Centre masterplan which aims to assert Sheffield City with cultural, historical and shopping and having fun centre (www.Sheffield1.com)*



*Figure 4.19: Digital Campus occupies Sheffield's most high profile and competitive business location immediately adjacent to the station and Sheaf Square (YF et al, 2008: p.37)*



*Figure 4.20: Left: Over-head image of City Hall and Barkers Pool (YF et al, 2008: p.30) and right: Signage of Sheffield (YF et al, 2008: p.32)*

Notably, the improvement priorities as shown in Sheffield City Centre masterplan are as follows:

- Strengthening of the cultural and leisure offers.
- Redevelopment of The Moor as a distinctive quarter.
- Creation of a network of green spaces.
- A well connected City Centre which is easy to access and to move about.
- In order to provide an appropriate relationship between residential uses and other city centre activities, it is proposed to support the concept of neighbourhoods around the edge of the city centre which will provide a range of housing types and access to community services and facilities.
- In order to respect the partnership approach and encourage the public to put their marks on the proposed action plan, there were many workshops and public consultation during reviewing the proposal and preparing the final draft of the 2008 masterplan.

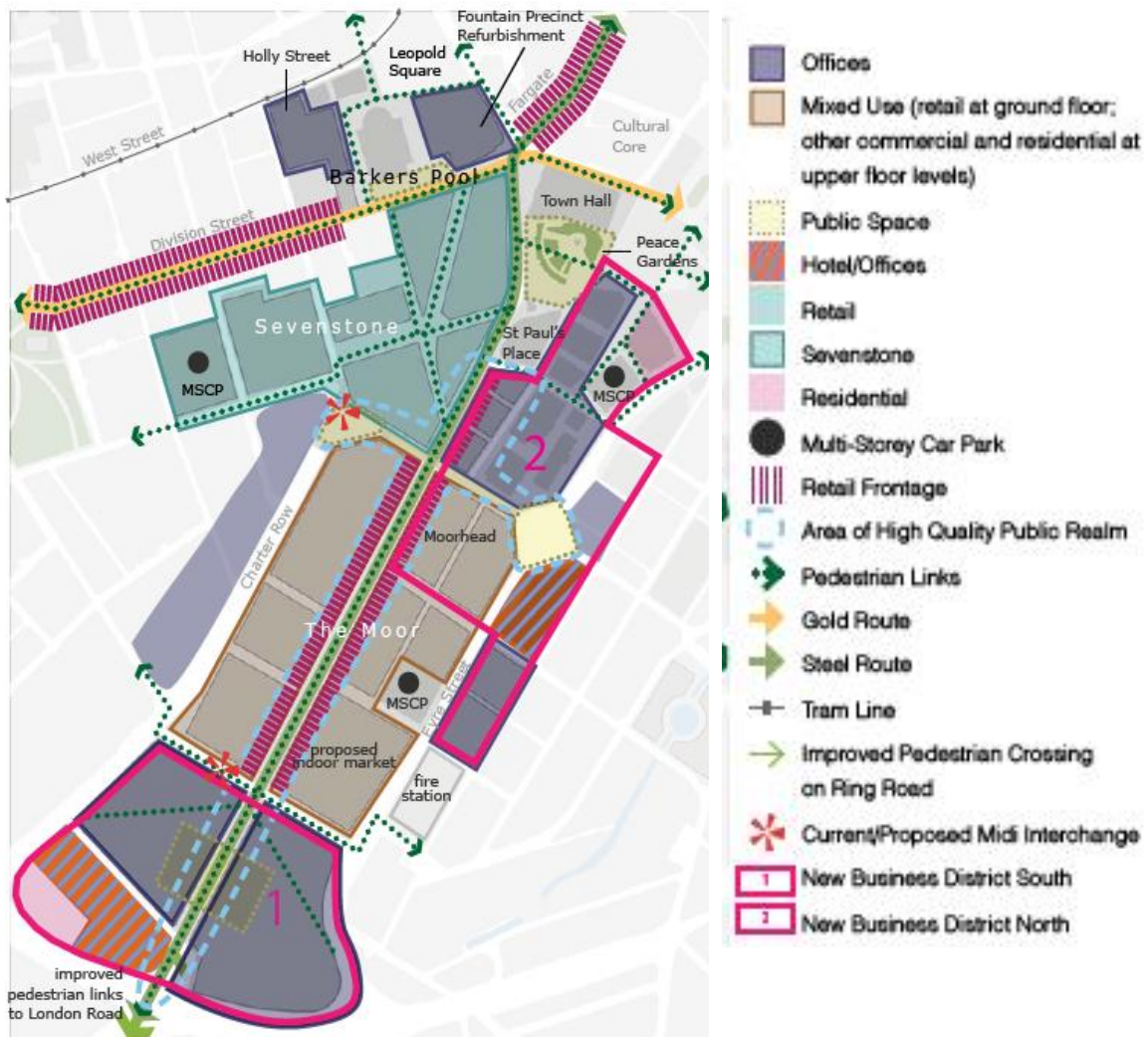


Figure 4.21: The masterplan of improving the buildings and streets network (YF et al, 2008: p.65)

From the previous Figures and diagrams it can be noticed that, The focus of the actions plan is on accommodating mix of complementary uses which will achieve the modern image of the city centre. By applying the proposed action plan, the city centre has European quality public spaces. A modern station and the continued growth of the universities have made the city centre a focus for many users. Sheffield City Centre becomes the core of a new prestige business area which is created around St Paul's Place. Shopping choice continues to improve with the proposed new retail quarter, new markets, Gell Street Park Playground and the Moor (See Figure 4.22). The Millennium Galleries, Winter Garden and the refurbished city hall have all enhanced Sheffield's role as the region's leader in culture, sport and leisure provision and at the same time they enhanced the visual appearance and the unique identity of the area.



Figure 4.22: Left: Developing different types of green areas in Sheffield City Centre. Right: Gell Street Park Playground, Sheffield, UK (YF et al, 2008: p.93)

### **Conclusion:**

There is no doubt that the process of improving the image of urban areas in both developing countries such as Egypt and developed countries such as United Kingdom is completely different. However, developing a link of knowledge between the two systems and benefiting from the British experience is very useful.

The partnership approach, sustainability approach and the approach of urban design coding are the main approaches which are applied to improve central areas in UK. The partnership approach ensures that public and private sectors are involved in the process in effective way. Sustainability approach ensures that the proposed development projects meet the needs of the present without compromising the ability of future generations to meet their own needs. While the approach of design coding has a great benefit of making decisions about improvement projects more objective. Three examples of regenerated areas in London, Leeds and Sheffield have been analysed in this part in order to conclude the lessons which can be learnt from each case.

As it is clarified in the previous chapter that the image of the city centre is composed of streets network, built objects, patterns of spaces and the identity elements, the analysed examples in this chapter consider the improvement of these components

mostly from the street level. The following table demonstrates the proposed actions for improving the components of the image in each example.

*Table 4.1: The improvement actions of the British examples related to the components of the visual image*

<b>The components of the visual image</b>	<b><i>The area of Archway, London</i></b>	<b><i>The area of Leeds City Centre</i></b>	<b><i>The area of Sheffield City Centre</i></b>
<b>The streets network</b>	<p>Create permeable and pedestrian friendly centre.</p> <p>Create tree-lined avenues linking the green spaces.</p>	<p>Promote the liveability of Leeds City Centre through the on streets events.</p> <p>Improve accessibility to and within the city centre, e.g. by creating new pedestrian bridges, a completed inner ring road, and better cycle routes and facilities.</p> <p>Improve the quality of streets, by repaving and maintaining them and taking away unnecessary clutter.</p> <p>Improve access to and from the train station.</p>	<p>Establishment of multi story car park</p>
<b>The built objects</b>	<p>The use of high quality of architecture and building refurbishments.</p> <p>Develop new key sites with landmark buildings.</p> <p>Recladding</p>	<p>opening of Leeds Arena</p>	<p>Build more offices buildings and mixed uses buildings</p> <p>Improving the retail frontages.</p> <p>Develop a new markets and the Moor</p>

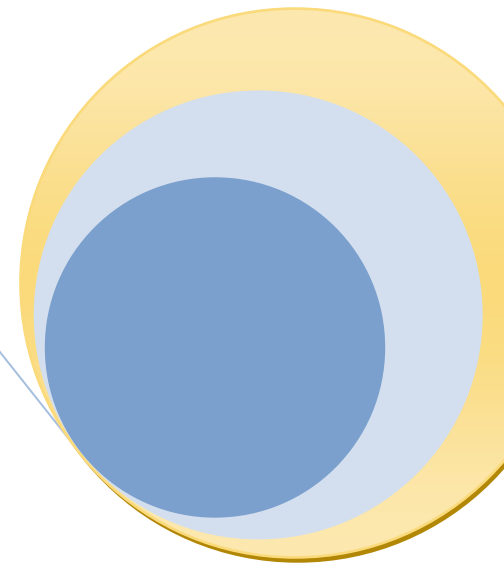
	<p>Archway Tower to improve the tower's appearance and eliminate wind blight in the surrounding public spaces.</p> <p>The use of green roofs.</p>		<p>Provision of new sport and leisure centres.</p>
<p><b>The urban spaces</b></p>	<p>Creation of better connected and landscaped public spaces, a high quality youth sports centre on the Highgate Hill edge of the Girdlestone Estate and the Skate park in Archway Park.</p> <p>The provision of green walls as distinguished boundaries for the open spaces to replace blank walls, for example on the Archway Tower</p> <p>Creation of Public space linking the Island to Archway Centre</p>	<p>Improvement of Park Square in the heart of the financial quarter</p>	<p>Creation of a network of green spaces.</p> <p>Develop an area of high quality of public realm</p>
<p><b>The identity elements</b></p>		<p>Create new easy-to-follow maps and signs both physically on the ground and on the top of buildings and put in more benches and trees</p>	

Table 4.1 includes actions regarding the utilisation of roofs and the extension of public spaces patterns which can produce a qualitative image from the over-head.

The examples of the British proposals for improving the city centre reflect a holistic approach of improvement which consider a wide range of criteria and achieve various goals in terms of economic, visual, functional, sustainable and social improvement. These proposals focus on the wide picture of the central area and do not improve the components of the image in separate way. For example, to improve the buildings, the impact of this improvement on the image of surrounding streets and open spaces is considered.

One of the trends of improving the image of cities in UK is to give the public a big chance to deliver their ideas through questionnaire, workshops, conferences and on street meetings. The hierarchy in applying the proposed action plans, the use of long term and short term programmes of development according to the priorities and needs of city users, the wide range of possibilities to select the optimum intervention, flexibility, adaptation and the good connections between the different responsible and stakeholders are all positive aspects of the British experience in improving the area of the city centre.

The rigid urban improvement system of Egyptian cities has the chance to be improved and make use of the positive impacts of globalization throughout the direct contacts and interactions with surrounding systems or by depending on the comparative approach of research.



# *Chapter 5*

**Embodying the concept of over-head imaging in the process of improving of the visual image: A proposed approach**





# Chapter 5

## Embodying the concept of over-head imaging in the process of improving the visual image: A proposed approach

### *Introduction*

The process of improving the visual image of the city centre could be briefly achieved through a sequential system which starts with the urban analysis of the area then the visual urban assessment and at the last stage decisions regarding the demanded interventions are made and the action plan is setted (Moughtin, et al, 1999: p.20). From analysing examples of redeveloped city centres in UK, it is obvious that the action plans mostly focus on adding land uses, activities, landmark buildings and pedestrian paths. Some of these projects take into account improving the visual image of buildings roofs and trying to achieve the criteria of attractiveness and visual comfort by greening the walls and roofs and/or create a network of green areas. It is suggested here that the urban improvement process should be shifted from traditional outputs such as formal properties, land uses and human activities to additional forces such as image and creativity, questions of permeability, legibility, sustainability and practicality.

As it is investigated in the previous chapters, the concept of over-head imaging has certain importance in the field of urban design. To translate this importance to practical benefits, this research proposes a comprehensive approach for incorporating the over-head imaging in the three stages of the visual image improvement as shown in Figure 5.1. Through the proposed approach, the idea of considering the concept of over-head imaging is highlighted. This approach is based on reviewing the already adopted approaches in the field of visual image improvement to determine the knowledge gaps and to develop integrated approach

which takes into account the different ways of city perception either from the street level or from higher levels (over-head).

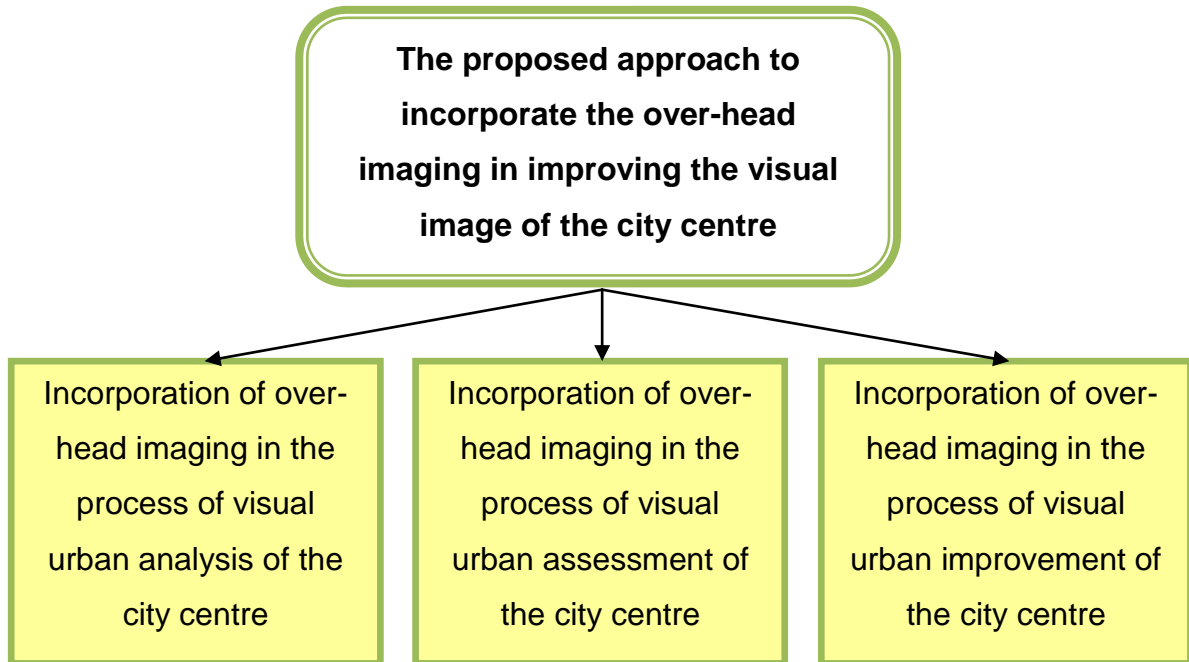


Figure 5.1: *The proposed approach considers and incorporates the concept of over-head imaging in the urban analysis, assessment and improvement.*

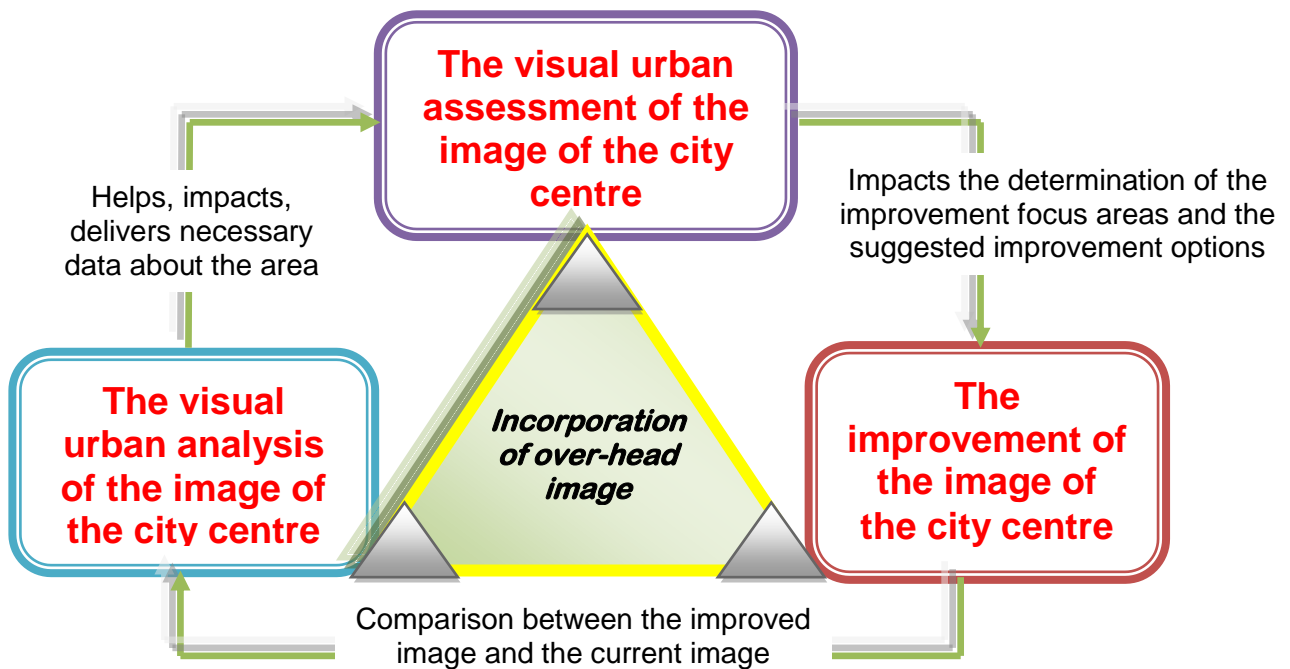


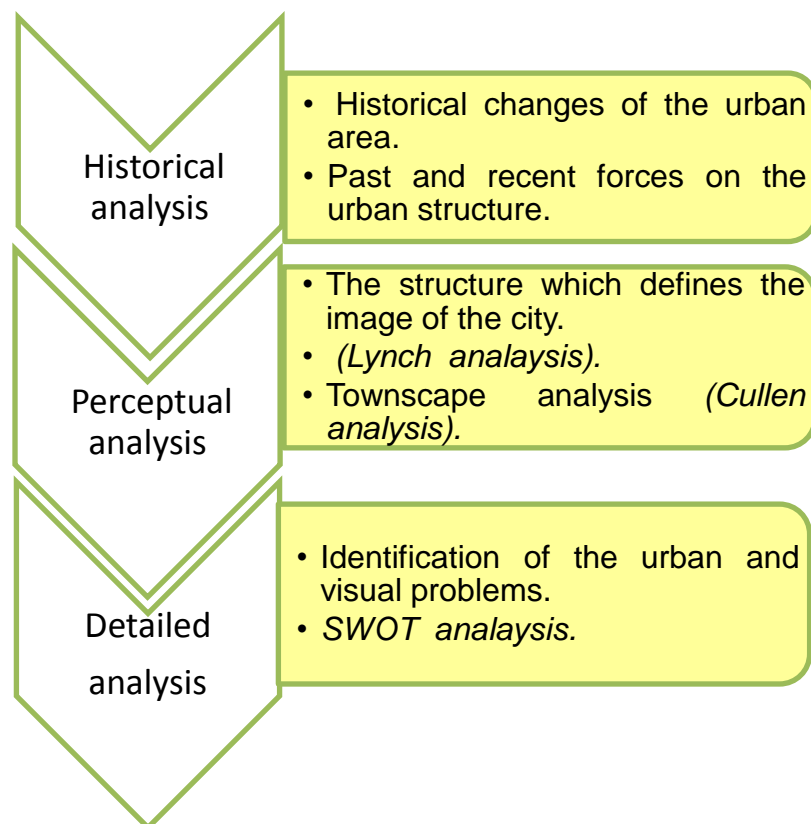
Figure 5.2: *The relationship between the three stages of the proposed approach*

### 5.1 First stage: The proposed approach for analysing the city centre image:

Before clarifying the proposed approach, the already used approaches for analysing the area of the city centre are discussed as following:

#### 5.1.1 Currently used approaches of urban analysis:

The urban analysis takes different forms; historical analysis, perceptual analysis and detailed analysis as shown Figure 5.3. There are various types of urban analysis as shown in Figure 5.4 which can be classified to objective analysis which depends on accurate documented data and subjective analysis which depends on the decisions of the urban designers. Also there are many tools which can be used to move the urban analysis of the city centre from the process of describing to the process of analysing. Some analytical stages depend on the personal opinions of the urban designer so they can be considered as subjective analysis. On the other hand, considering some objective criteria are required to make the urban analysis more specific and to move it from subjectivity to objectivity.



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Figure 5.3: The different levels of urban analysis approaches.

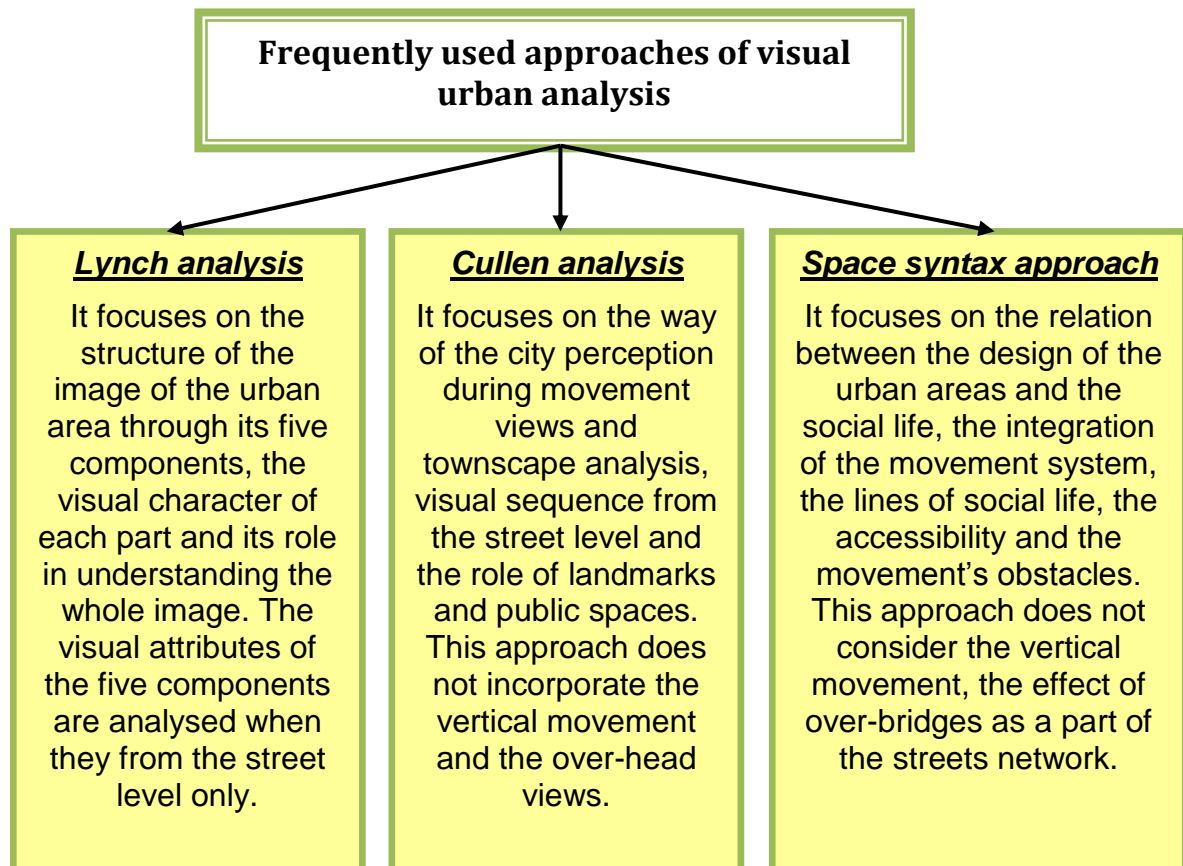


Figure 5.4: *The frequently used approaches for analysing the visual image of urban areas.*

#### 5.1.1.1 Lynch analysis:

According to Lynch, analysing paths, nodes, edges, districts and landmarks is a good tool to understand the comprehensive image of the city (Lynch, 1960). Lynch analysis does not mean making lists of routes, nodes, districts, edges and landmarks existing in a district but it should go beyond that to understand each component in many aspects: its character, importance, relation to other components, its role in helping the observer to experience the image of the city (See Figure 5.5). This type of analysis examines the legibility and uses the mental maps as a main tool.

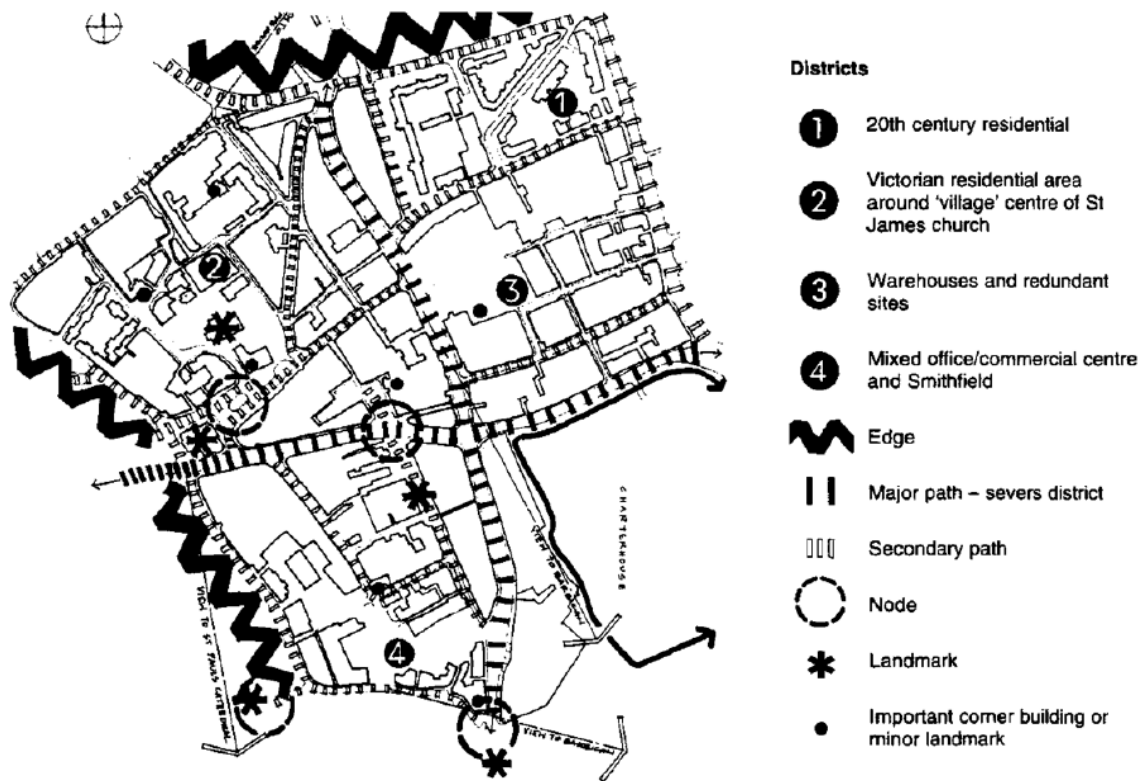


Figure 5.5: Lynch analysis of Clerkenwell (Moughtin, 1999)

#### 5.1.1.2 Townscape analysis:

Townscape analysis draws particular attention to the way in which a space changes as the observer moves through it. The point of the concept is to note how effectively the routes stimulate the observer's interest and enjoyment and where interest is lacking or could be improved. *Both Giedon's book "Space-Time" and Nagy's "Vision in Motion" drew attention to a more dynamic approach to visual understanding which seemed to offer new insights into the processes of describing and analysis of urban environments"* (Gosling, 1996: p.221).

Townscape analysis considers the notion of moving through a series of spaces and treating the urban landscape as a series of outdoor rooms. Other concepts propounded by Gordon Cullen in his book "Townscape" (1961) are 'glimpse views', 'framed views' and other sensory visual experiences of outdoor spaces as a series of enclosures (Gosling, 1996).

Although townscape analysis examines the sequence of views during the movement as shown in Figure 5.6, it should extend to include the vertical movement as a method for experiencing the spaces from high levels of vision. This type of

movement generates a series of views which depend on the speed and time of the movement. These successive scenes should be analysed to examine the images of spaces from different levels of vision.

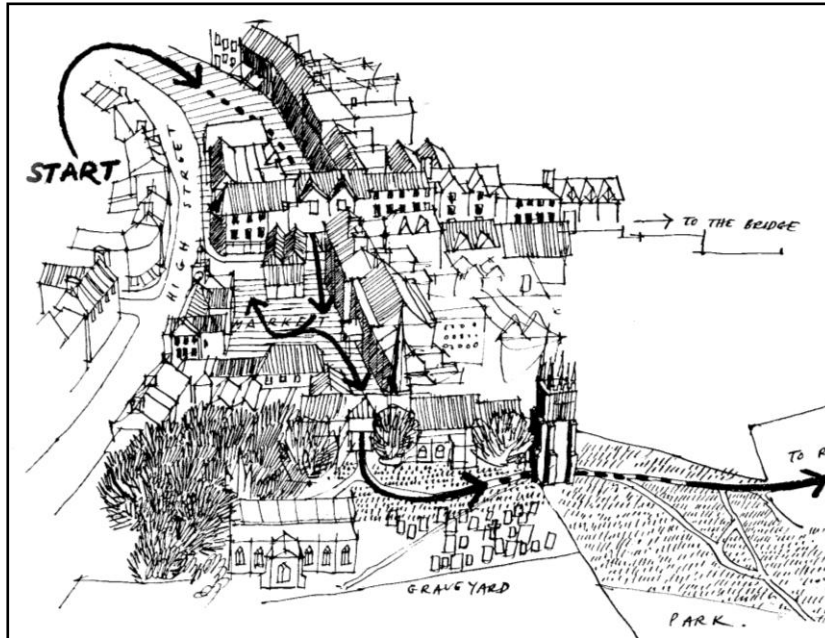


Figure 5.6: The Townscape Sketch by Gordon Cullen (Gosling, 1996: p.51)

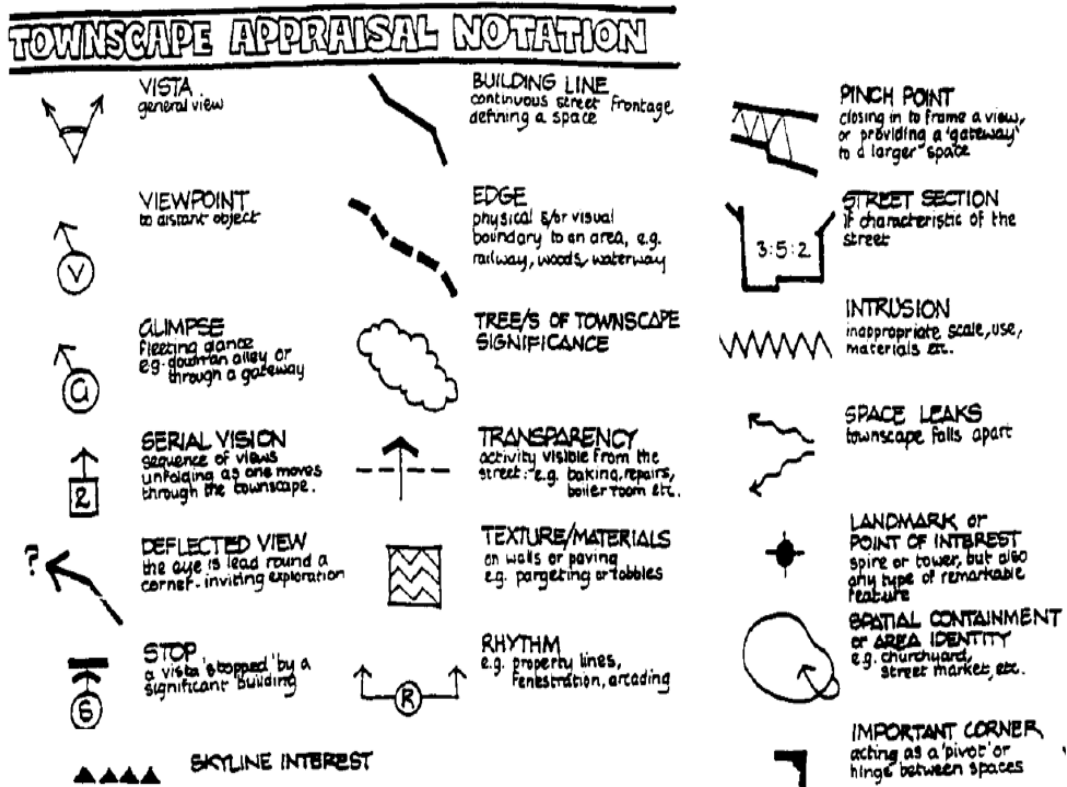


Figure 5.7: Townscape Notation System (Gosling, 1996: p.55)

### 5.1.1.3 Space syntax approach (Syntactic analysis):

Although Lynch has proved to be an inspiration for many researchers interested in the problem of designing intelligible virtual worlds, there is the field of research known as space syntax. Space syntax research focused on the relationship between space and social life, the social life of a simple building, a complex building (or set of buildings), a settlement or an urban district (Hillier and Hanson, 1984) and (Hillier, 1996). Axial maps and aerial images are the main tools for the syntactic analysis.



*Figure 5.8: The axial map of Assiut City, Egypt (Reffat & Brown, 2009: p.7)*

### **5.1.2 proposed concept for analysing of the image of the city centre:**

The proposed approach aims to conduct a comprehensive type of visual urban analysis of the city centre which considers both perspectives from the street level and from higher levels. The identification of the most observed objects in the over-head images is a key step which adds some new aspects to this approach. The proposed visual analysis focuses on four aspects; 3D urban analysis, 2D urban analysis, legibility and permeability analysis and analysis of high observation points.

#### 5.1.2.1 Analysis of the three-dimensional urban elements (3D urban analysis):

The 3D visual analysis includes the preparation of lists of dominant building materials, colours, building styles, fenestration and architectural detailing.

Noting the locations of the buildings and how they affect the streetscape, over-head scenes and the concept of visual privacy can help to establish which built objects have desirable views and where there are areas of undesirable views. The analysis should extend to include analysing the backs and sides of buildings and the visual significance of buildings in the area as shown in Figures; 5.9 and 5.10.

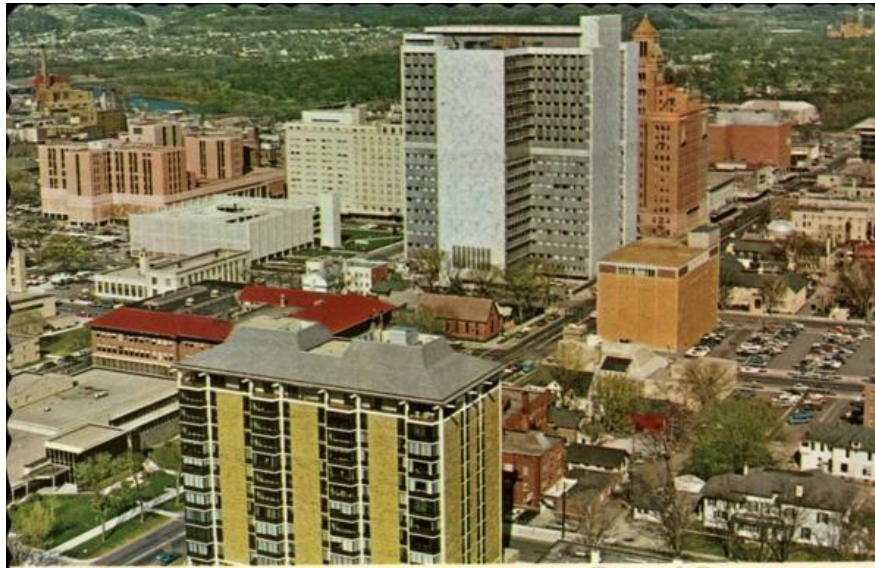


Figure 5.9: Aspect photos as a tool to analyse the backs and fronts of buildings which can be observed clearly from over-head. The over-head image of Rochester, US State.



Figure 5.10: Analysis of the building significance in terms of visual and functional importance. The urban analysis of Cambridge City Centre, UK (<http://cambridge.jdi-consult.net>)



To achieve a comprehensive analysis, the proposed visual analysis extends to include the analysis of the over-head perspective of buildings and architectural elements. Observing an urban area from high level of vision makes the backs and sides of buildings more visible and shows the relationships between the different built zones in terms of heights and uses. On the other hand, the image from the street level focuses on the front facades and corners. It is helpful to take some photos of the study area from high levels of multi-storey's buildings to explore the problems of the fronts, backs and roofs of the buildings. The height and massing which create the sense of openness or enclosure and affect the amenity of streets and spaces are proposed to be analysed. Landmarks are also built objects which should be analysed from both street and over-head levels.

#### 5.1.2.2 Analysis of the two-dimensional urban elements (2D urban analysis):

The visual analysis of urban spaces can indicate those areas of the city centre which act as nodes. It will also show those 'dead' areas without frontages or areas which are not attractive to pedestrians and are in need to remedial action. This analysis records the lines of life (concentration of visual activities) and the visual relations between open and closed spaces as shown in Figure 5.11.

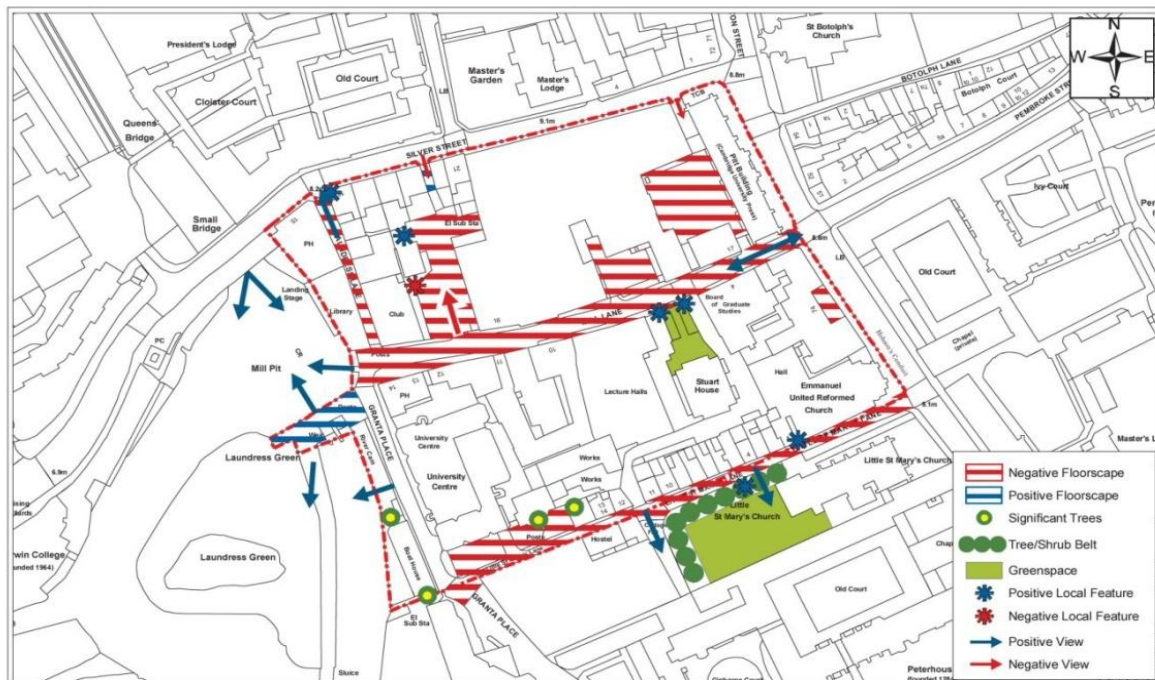


Figure 5.11: 2D visual analysis focuses on the horizontal surfaces and views of spaces. The visual analysis of Cambridge City Centre, Cambridge, UK (<http://cambridge.jdi-consult.net>)

There are many advanced tools that can help to carry out this type of analysis. Visibility graph analysis software "Fathom" can be used to identify which routes will be visible to a pedestrian from every square metre of a plan. The programme then travels from each square metre to every other and maps the physical and visual accessibility of all routes for pedestrian journeys as shown in Figure 5.12. This analysis identifies the desired lines for movement ([www.intelligentspace.com](http://www.intelligentspace.com)). Analysing the horizontal surfaces notes the quality of materials used in floors, roofs and steps. Pavement width and safety should be analysed.



*Figure 5.12: Left: Computer model for a new boulevard in the central Frankfurt, Germany. Right: Fathom analysis of the visibility of pedestrian spaces in one of the four design options for the public space of the Boulevard ([www.intelligentspace.com](http://www.intelligentspace.com))*

The 2D urban analysis encompasses the design of the streets network, the important paths in the city centre and the main land uses around these paths. This analysis does not focus on the public realm only but extends to analyse the private spaces such as gardens, courtyards and entries which are visible from public spaces.

#### 5.1.2.3 Legibility and permeability analysis:

The visual analysis of the existing rooflines which compose the skyline and the roofscape is the first step in determining the level of the visual permeability and suggesting the suitable building heights in the future development.

Analysing the existing roofs, their uses, their appearance and the potential of accessing them physically and visually (See Figure 5.13), the main features of the skyline either historical or contemporary elements can establish a baseline of knowledge from which to move forward in the development plan.

Legibility analysis is based mainly on analysing the image of the streets network, the focal points and landmarks and their role of orienting the attention of the users to the

most important places. Legibility analysis depends on studying the relationship between the objects of the image more than the design of each object. To what extent the spatial relations help in improving the spatial cognition of the central district and creating comprehensible, easily navigable and memorable urban structure should be analysed.



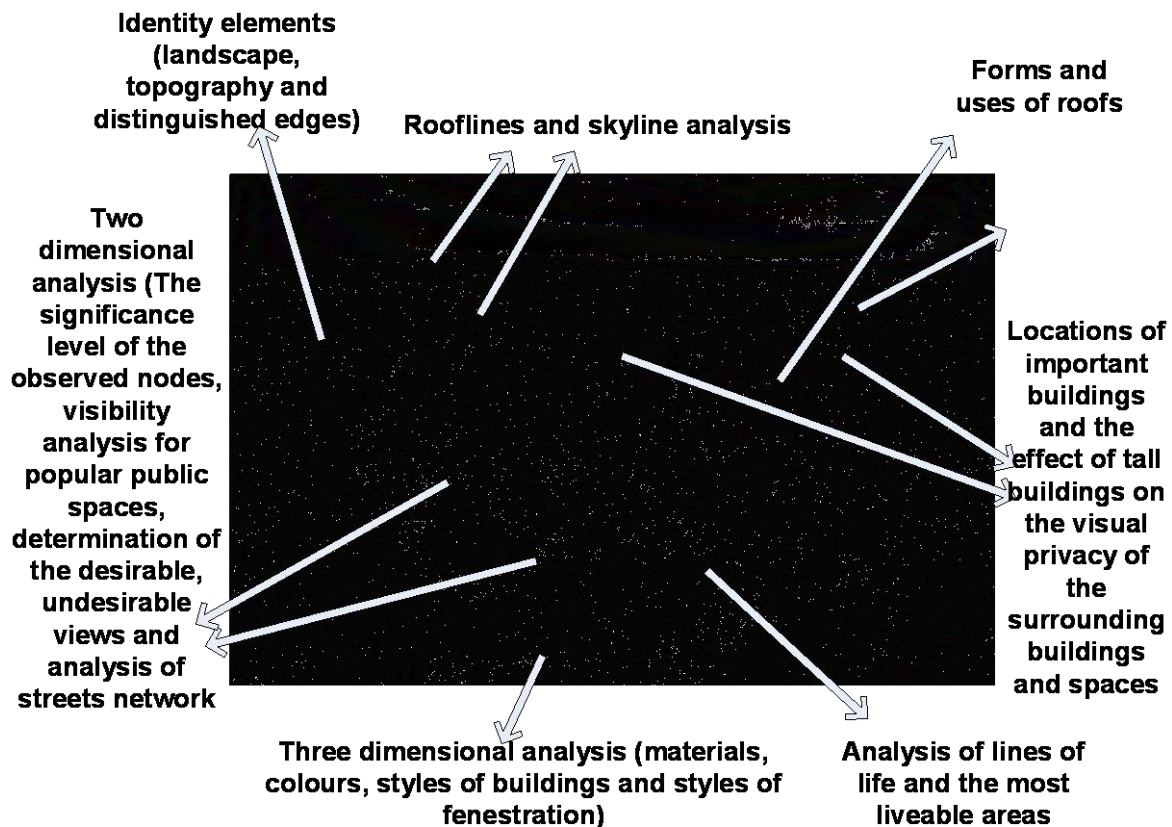
*Figure 5.13: Visual analysis of roofs profile of an urban district in Sheffield, UK (Diploma Work, UOH, 2009)*

The urban details can be visually classified to two kinds of scales: small scale of details and large scale of details. Small scale details are the most critical factor to be considered during the legibility analysis of buildings within an existing built context. Large scale of details which give the area its distinguished character should be considered during the legibility analysis of spaces as shown in Figure 5.14.



*Figure 5.14: The urban details which contribute in forming the character of an urban area or a place. Geelong youth activity area, Geelong, Australia (Gehl, 2011: p.16)*

When the visual image is perceived inside the range of the human eye's perspective, the observer can perceive the small scale details of facades, The close-up appearance of objects and surfaces and the selection of materials in terms of detail, craftsmanship, texture, colour, durability, sustainability and treatment, street furniture, paving, lighting and signage. But when the image of the urban context is perceived from high visual levels, the outline of the buildings and their materiality, landscaping, shading and planting and topographical details will be identified by larger scale of details. Obviously, these details are ignored in some urban analysis systems or might not be taken in consideration during developing masterplans and *improvement projects*. *Figure 5.15 illustrates the main aspects which are proposed to be analysed.*



*Figure 5.15: The main aspects of the proposed analysis of the image of the city centre. Over-head image of London City Centre (<http://www.dailymail.co.uk>)*

#### 5.1.2.4 Visual analysis of high observation points:

The most important and frequently used observation points in the area of the city centre should be analysed in terms of their locations and the views from these points. It is proposed for these high observation points to be classified into two

groups; the first group includes the high locations which have desirable views and the second group includes the high observation points which have undesirable views of the surrounding buildings and spaces. The effect of the tall buildings on obstructing or opening the views from the street and from the surrounding low buildings should be analysed (See Figure 5.16).



*Figure 5.16: Analysis of high observation locations. The over-head image of London from the level 72 of London's tallest building (The Shard) by its architect, Renzo Piano ([www.mirror.co.uk/news](http://www.mirror.co.uk/news))*

### **5.1.3 Tools and resources for analysing the city centre image:**

There are different tools which can be used effectively to conduct the proposed analysis. The following paragraphs explain these tools as follows:

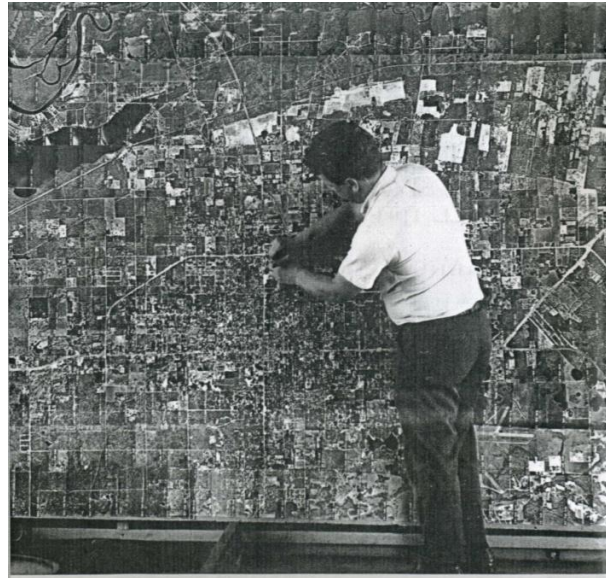
#### 5.1.3.1 Historical maps:

Different types of historical and recent over-head images can be used to achieve the historical study by comparing the photos and determining the changes in the urban form and the size of the city patterns. Lists of buildings and areas which are protected or preserved should be also used during the historical analysis. A historical contextual analysis would compare Figure ground drawings of an area at different points in its history as a necessary step to understand the balance of the built form to open spaces.

#### 5.1.3.2 The over-head and aerial photos:

The applicability of aerial photos to town planning was recognised in the early beginning of 20<sup>th</sup> century and it was enormously expanded during the Second World

War. Millions of vertical and oblique photographs were taken and used in mapping, target identification and damage assessment as shown in Figure 5.17 (Branch, 1971).



*Figure 5.17: The Traditional way of using a large index assembly of vertical over-head image images in the beginning of 20th Century (Branch, 1971)*

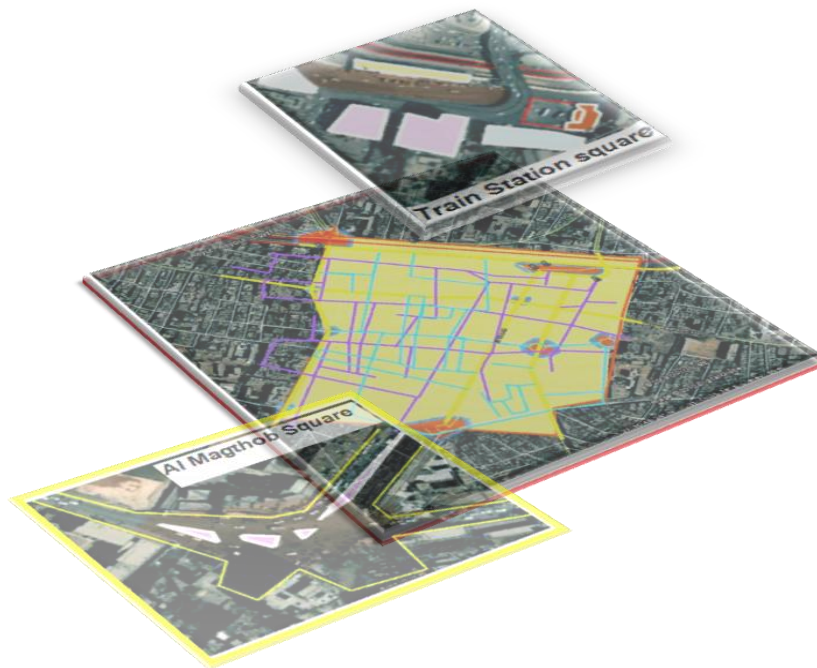
Within this context of intensified need and accelerating change, the use of over-head image photography must be considered. The over-head image is the only way of portraying the physical-spatial city as a whole and of seeing it in its entirety with immediately surrounding areas. At the same time, an enormous amount of detailed information obtainable by these photos is a necessary background reference of wide urban analysis. Overhead photos show the densities within the city, the locations and forms of buildings and structures, the amount of land used for circulation and the amount of open and vacant lands. Vertical over-head images are the most appropriate tool for land uses and streets network analysis. Oblique over-head photos are proposed to be used in rooflines and skyline analysis while horizontal photos are suitable for analysing the heights and facades of buildings, freeways, railroads, waterways and major and secondary highways are observed and analysed as a complete subsystems with respect to the interconnections between them (Branch, 1971).

Oblique images are easier to be read than the vertical images because oblique photos are more nearly to our usual view (See Figure 5.18).



*Figure 5.18: Using vertical over-head images to identify the different land uses in the central district (<http://www.urbanthinking.org>).*

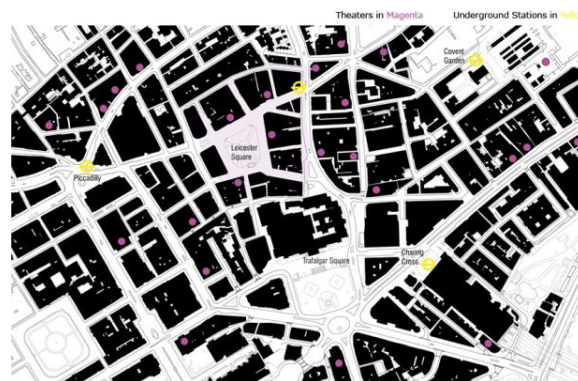
Over-head images can be used as a base to illustrate the five components of the visual image. These images can be used either to study each element individually or/and the five components in one set to understand the relationship between them. It is helpful to use the over-head images as layers to illustrate the different objects of the city. The base layer shows the all five components (Paths, edges, districts, nodes and landmarks) in a single image. Then each layer of the other five layers helps to analyse the components of the image separately (See Figure 5.19). This system of layers could be used horizontally or vertically.



*Figure 5.19: The use of layered system of over-head images for analysing Assiut City Centre*

#### 5.1.3.3 Figure ground diagrams:

A key tool for morphological analysis is the Figure ground drawing. In this technique the spaces rather than details of the buildings are revealed as shown in Figure 5.20. Figure ground drawings are produced by shading the buildings in plan form in black, thereby revealing the public and semi-public realms as white. The production of Figure ground drawings enables the designer to see the urban landscape as a series of solids and voids (Trancik, 1986). Also this tool highlights the design of the streets network and the type of the urban pattern which is used in the area.

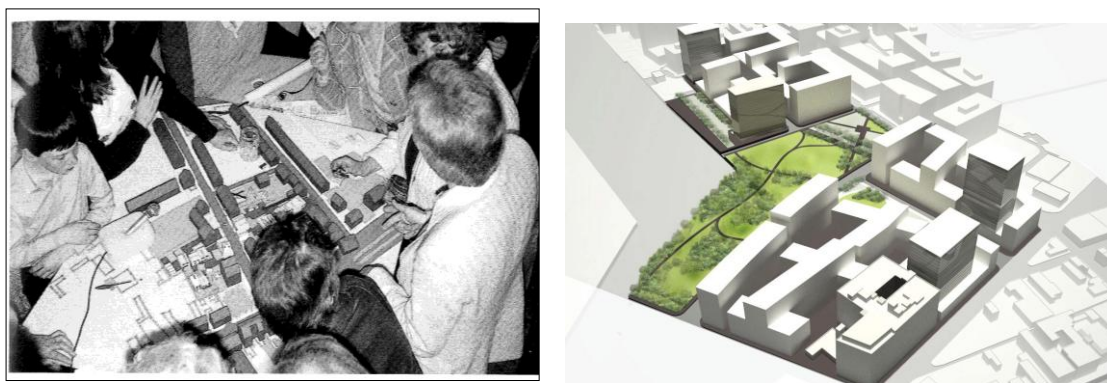


*Figure 5.20: The use of Figure ground diagram in the urban analysis of the area surrounding the Leicester Square in London, UK  
(<http://www.portfolio.chrisminordesign.com>)*



#### 5.1.3.4 Three-Dimensional models:

Physical and virtual 3D models of urban areas are a useful technique for analysing urban forms. 3D models can be powerful tool to work with group of planners and designers because it is easy to make changes and recreate ideas and to see the impact at the same time (Moughtin, 1999). These models can be presented to the public because physical models are easy to be understood than maps or photos (See Figure 5.21).



*Figure 5.21: Left: Public working around the physical model of Millgate project (Moughtin, 1999). Right: Using virtual 3D models as an effective tool to analyse the central areas from different perspectives (Zhu, 2009).*

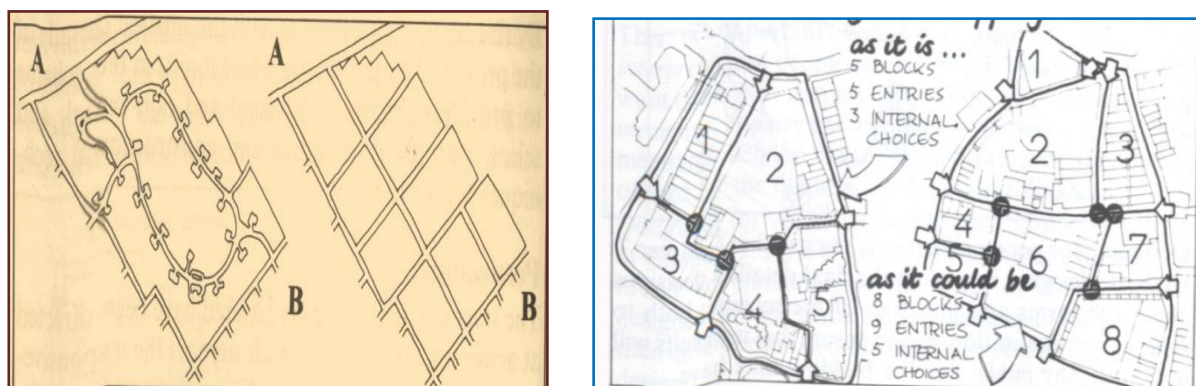
#### 5.1.3.5 Permeability map:

The extent to which the area provides people a choice of access through it is a key measure of its permeability (Bentley et al, 1985). The permeability diagrams which are used in the most of urban analysis approaches focus on the analysis of pedestrian routes to determine the level of choice and variety of routes for moving from place to place.

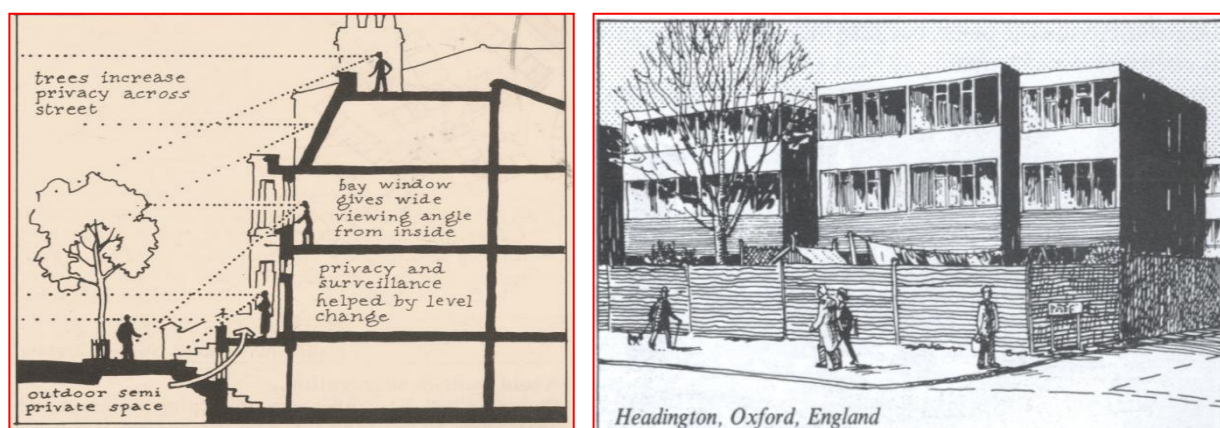
This tool helps in developing the streets network and exploring the routes that need interventions. The proposed approach focuses on both physical choices and visual choices of access. Therefore, there are two types of permeability maps which are used in this approach; physical permeability map and visual permeability map as shown in figure 5.22.

Visual permeability refers to the ability to see the routes and other public spaces through an environment. The buildings locations, their height, the style of fenestration, roof lines, exit and entrance points and their relationships with the streets and public spaces should be analysed because these factors play an

important role to enhance or to diminish the level of visual permeability as shown in Figure 5.23.



*Figure 5.22: Examples of physical permeability maps show that a place with small blocks gives more choices of routes than one with large blocks. The closed ended streets produce impermeable area (Bentley et al, 1985: p.12)*



*Figure 5.23: The style of fenestration and the form of roofs should be analysed because they affect the visual permeability (Bentley et al, 1985:p.14).*

Over-head imaging improves and supports the physical and visual permeability because it increases people's awareness of the available choices. A permeability analysis includes an analysis of street frontages noting those areas where there is little or no visual or physical contact across the building frontage. The effect of tall buildings, over bridges and forms of roofs on opening or blocking the important views of the area should be studied in this approach.

#### 5.1.3.6 Site survey:

As part of any urban analysis, it is often necessary to carry out a more detailed survey and appraisal of a specific site. The site survey involves gathering and

recording information in respect of physical characteristics, land uses and urban form of the site (Bush, 2010).

5.1.3.7 Legibility map:

A definition of 'legibility' was suggested by Lynch in his famous book "*The image of the city*" as legibility is the ease with which a city's parts can be recognized and can be organized into a coherent pattern. A legible city would be one whose districts or landmarks or pathways are easily identifiable and are easily grouped into an overall pattern (Lynch, 1960). The proposed approach aims to determine the extent to which the layout introduces a clear form and accurate image to the observers by analysing the vistas and natural features as shown in Figures; 5.24 and 5.25.

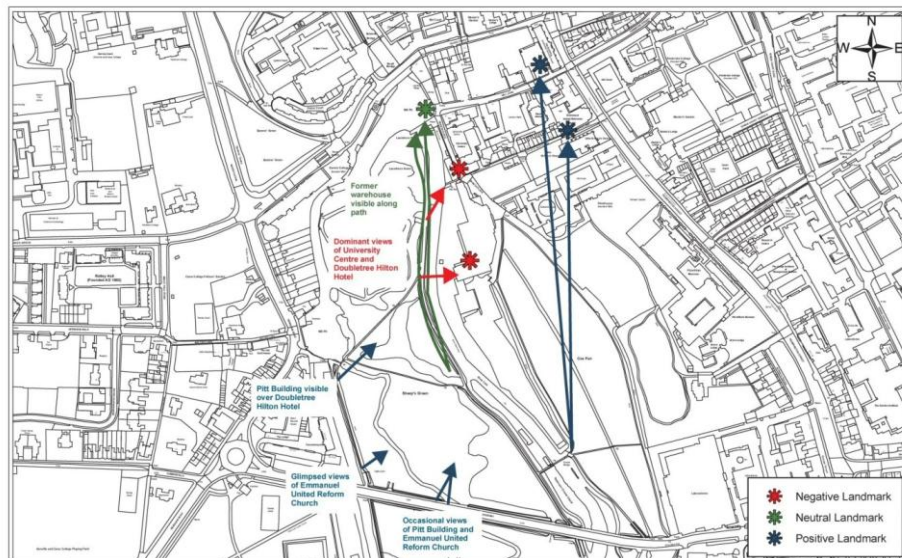


Figure 5.24: *The legibility map which analyses the vistas and important views of Cambridge City Centre*



Figure 5.25: *The legibility map which analyses the legibility of the natural features in the central Cambridge, UK (<http://cambridge.jdi-consult.net>)*

Table 5.1: *The suitable tool for each step of the proposed analysis of the visual image*

<b><i>The proposed steps of analysis of the visual image of the city centre</i></b>	<b><i>The suitable tool</i></b>
Analysis of colours, materials and fenestration styles of buildings.	Site survey and low oblique over-head photos.
Analysis of backs, sides and roofs which are observed clearly from the over-head perspective.	Site survey and low oblique over-head photos.
Analysis of visual privacy and visual accessibility.	Legibility maps, site survey, over-head photos and permeability maps.
Analysis of desirable and undesirable views.	Site survey, permeability and legibility maps.
Analysis of the skyline and rooflines.	Three dimension models, high oblique over-head photos and site survey
Analysis of the architectural details which give the central area its character or identity.	Site survey, historical maps and horizontal over-head photos.
Analysis of lines of life (The most used spaces and streets)	Site survey and legibility maps.
Analysis of urban patterns	Figure ground diagrams and vertical over-head photos.

The different types of the proposed analysis have a great impact on the assessment stage as shown in Figure 5.26

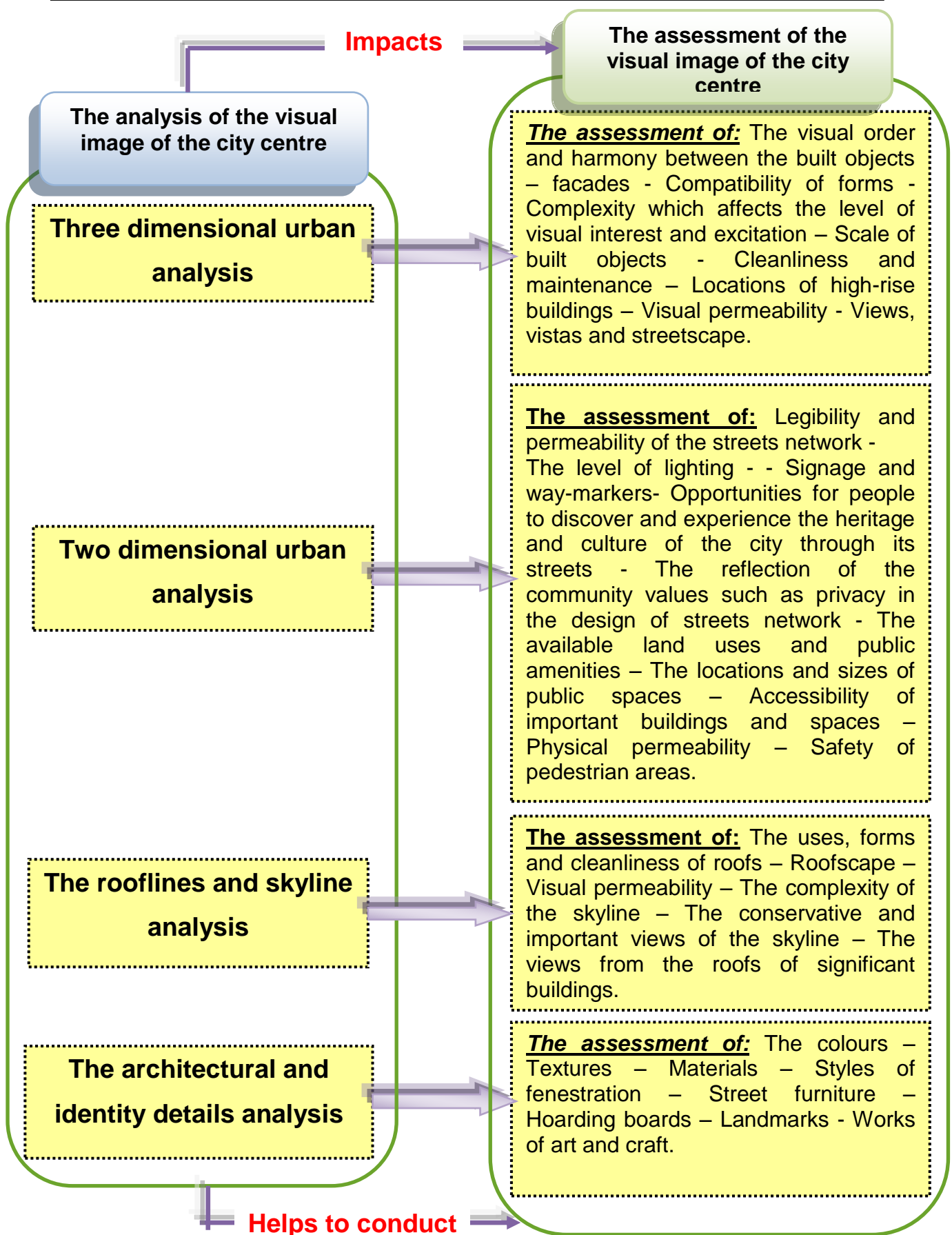


Figure 5.26: The relationship between the visual analysis and assessment stages

## **5.2 Second stage: The assessment of the visual image of the city centre:**

To incorporate the concept of over-head imaging in the visual assessment process, it is important firstly to review the already used approaches for assessing the visual image of the city centre.

### **5.2.1 Currently used approaches of assessing the visual image of the city centre:**

The development of assessment techniques has been affected by the changes in the needs of cities users. Since the 1960s, researchers have developed a rich array of design assessment approaches (Forsyth et al, 2010). A review of the literature on contemporary assessment approaches indicates that much literature has addressed the process of preparing master plans but few authors have attempted to investigate how to assess the visual appearance, identity and visual character of the city centre. How to assess the quality of delivered improvement projects and their effect on the visual image of the city centre is mostly investigated from the street level only. Much research has been conducted to develop methods for achieving environmental and sustainability assessments for the different urban areas by determining the criteria which can be used to judge the level of sustainability of urban improvement projects (Walton, J. S. et al., 2005; McGranahan and Satterthwaite, 2003). On the other hand, the assessment of visual appearance has not been investigated widely.

During the 1950s and 1960s in the USA, professional attention started to be focused on the visual character of roads. “The View from the Road” by Donald Appleyard, Kevin Lynch and John R. Myer was an influential early example of such investigations (Appleyard et al, 1964). They focused on the dynamic visual experiences of automobile riders. The authors argued that city design should be used to improve the visual experiences of highway users. This investigation included not only the view from the road but, increasingly, the view of the road.

Regarding the “city image assessment”, the focus was on developing criteria for determining good city form and qualitative urban design as Alexander and Faludi noted “assessment criteria must enable a real judgment of planning effectiveness: good planning must be distinguishable from bad” (Alexander and Faludi, 1989: p.127). Few plan appraisals focus on the effect of urban improvement projects on the

visual appearance of the city from above and how the assessment objectives can examine the response of the area of city centre to the needs of the observers who view the city from high observation locations. The following paragraphs clarify the proposed concepts and tools of the modified approach of urban image assessment.

### **5.2.2 Proposed concept of the visual urban assessment of the city centre:**

Making decisions about the image of any urban area goes through two different filters; firstly, information filter which has an objective nature formed on the grounds of raw data, knowledge and standards of urban life. Secondly, attitudes filter which has a subjective nature formed on the grounds of individual system of values. Both types of filters affect the outcome of urban assessment. The urban assessment depends mainly on two types of measures; the quantitative measures which can be measured accurately such as density, height and environmental measures and the qualitative measures which are open to interpretation of individuals, difficult to be measured and it can be overlooked or unobserved. Due to the fact that visual effects cannot be quantitatively measured, assessing visual aspects relies primarily on subjective analysis (Rodrigues and Lay, 2012). The proposed urban assessment uses a mix of subjective and objective assessment.

The proposed approach for assessing the central areas depends on the concept of responding to the urban design criteria as a tool to assess the visual and urban quality of the area of city centre (*See Figure 5.27*). Depending on criteria (standards) enables the urban designers to explain why an urban area needs improvement. To use this tool effectively, the process starts with defining the design criteria of each constituent of the image and evaluating the indicators which are available in the area against each criterion. Those indicators draw attention to possible weaknesses and indicate which areas need some interventions. Most of these indicators can be largely assessed by personal observation. The level of quality to meet the criteria can be explained as improved, same or declined when it is compared with the previous year, previous three years, and previous five years (URBED, 1994).

The proposed assessment approach uses urban design criteria as constants and assessing the indicators of each criterion as variables. This means that the same design criteria can be used for different urban environments to make the process

more objective but the indicators of each criterion are different according to the urban nature of each area. The performance indicators of the image can be related to natural features, space design, architectural landmarks, maintenance, streetscape design, safety and conservation of local heritage.

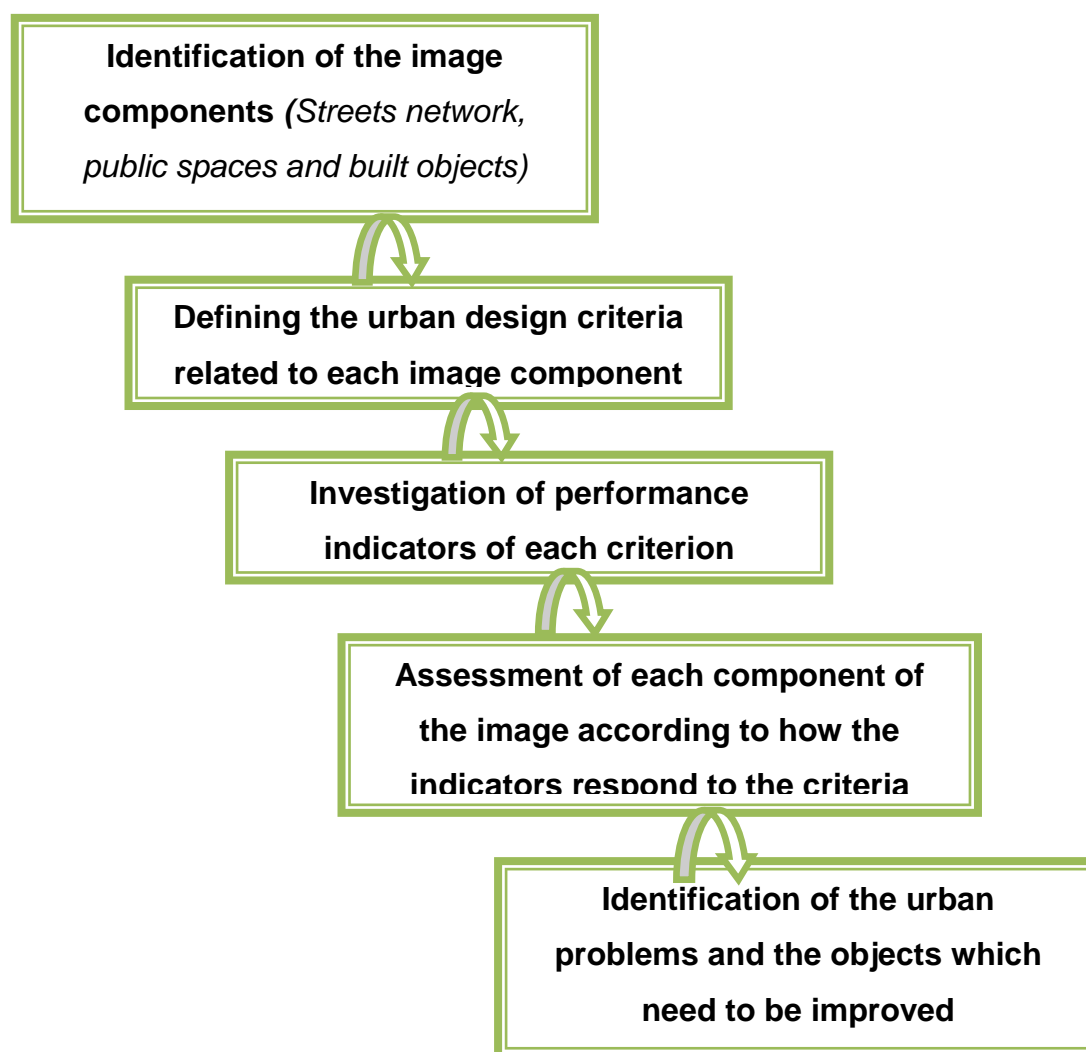


Figure 5.27: *The framework of using urban design criteria as a tool for assessing the quality of the image of the city centre.*

Assessing the image of the city centre focuses mainly on the assessment of the three main components of the image which are public spaces, streets network and built objects. The following paragraphs explain the process of city image assessment.



### 5.2.3 Steps of the proposed assessment approach of the image of the city centre:

Table 5.2 illustrates the proposed assessment statement or check list which clarifies the key components of the image and the urban features or indicators which should be examined. Table 5.3 summarises the assessment aspects for each component of the observed image. Table 5.4 shows how the results of the proposed assessment can guide the improvement actions.

*Table 5.2: The proposed assessment statement for the image of the city centre which based on the over-head image as a major factor*

#### **Assessment statement for the visual image of the city centre based on the over-head perspective:**

##### **Assessment of public spaces:**

###### **Location:**

- *The availability of over-head images of the surrounding area because of the location of the space or its topography (available – unavailable).*
- *The views of the public spaces from the surrounding buildings and streets (blocked – opened).*
- *The views from the public spaces (desirable - undesirable).*

###### **Shape and size:**

- *The height of the surrounding buildings or boundaries (more than or less than 200 metre).*
- *The proportions of the public spaces; width: length: the height of surrounding boundaries.*
- *The scale of landscaping and the outdoor furniture.*

##### **Assessment of the attractiveness of visual landscape:**

- *Attractive treatment of floors and roofs (attractive – unattractive).*
- *Street shades (attractive – unattractive).*
- *The views of natural edges (attractive - unattractive).*
- *Historical features of landscape.*

##### **Assessment of the skyline:**

- *The potential sensitivity to development.*
- *The visual features of the skyline from distant and near, high and low, resident and visitor locations.*
- *The impressions of the skyline (historical/modern – constant heights/variable heights – colourful/colourless - clear views/polluted views).*

#### **Assessment of accessibility of spaces:**

- *The range of public spaces which are accessible on foot.*
- *The minimum sense of separation between the public spaces and elevations of streets.*
- *The existence of adequate and secure cycle routes.*
- *The existence of accurate and informative directional signs.*

#### **Assessment of amenity:**

- *The capacity of existing facilities to service large events.*
- *The ability to accommodate additional temporary facilities.*
- *The level of lighting, greening and soft landscape and quality of life (noise, air pollution, ...).*
- *The availability of information points, toilets and catering services.*

#### **Assessment of vitality and viability:**

- *Pedestrian flow or footfall.*
- *The amount of retail, leisure and office floor space.*
- *The amount of land available for new or more intensive forms of city centre development.*
- *Retailer representation and intentions to change representation including street markets.*
- *Regular surveys will help authorities in assessing the effectiveness of city centre in setting further priorities. Interviews in the city centre including the views of residents living in or close to the centre*
- *The night over-head images should be examined to assess the level of lighting and safety which support the vitality of the area during the night.*

#### **Assessment of variety and mixed uses:**

- *Possibilities for using roofs for additional functions which can expand the range of activities and uses in the area.*
- *The availability of wide range of uses such as cultural, recreational, commercial, educational and administrative uses.*

#### **Assessment of streets network:**

- *Landmarks, focal points, roofscape, clearance and navigability, gateways to particular areas, edges and buffers, the level of lighting, works of art and craft.*
- *Connectivity, safety, visual and physical permeability.*
- *The design of the street network and to what extent it supports the permeability and respects the visual privacy.*

**Assessment of the buildings:**

- *The relationship between the heights of buildings in terms of open and blocked views of important buildings and the views from tall buildings.*
- *Colours, materials and finishes which affects the sensory perception and associational meaning.*
- *Compatibility of forms.*
- *Complexity which affects the level of visual interest and excitation.*
- *The range of harmony and contrast between the different forms. Assessment of forms does not focus on the facades only but also on the forms of roofs which appear clearly in the over-head images.*
- *The scale of built compositions within the image.*
- *Cleanliness and maintenance.*
- *Functions, activities and uses of buildings. This is particularly relevant to the use and activeness of ground floor level and the top roofs.*
- *Order in terms of continuity, dominance and diversity of built objects without contradictions.*
- *Tall buildings; their designs, locations, roofs and the views from these buildings.*

Table 5.3: *The main components of the visual image of the city centre and the key aspects of the proposed assessment*

<b>The components of the visual image of the city centre</b>	<b>The examined aspects and criteria</b>
<b>The assessment of the public spaces</b>	Location, size, attractiveness of the landscape, skyline, accessibility, amenity, variety and mixed uses, vitality and viability.
<b>The assessment of the streets network</b>	Legibility and permeability of the streets network. Views, vistas and streetscape.  The level of lighting - Works of art and craft - Signage and way-markers- Opportunities for people to discover and experience the heritage and culture of the city through its streets - The reflection of the community values such as privacy in the design of streets network.
<b>The assessment of the built objects</b>	The visual order and the harmony between the built objects – Roofs and facades - Colours, materials and finishes - Compatibility of forms - Complexity which affects the level of visual interest and excitation – Scale - Cleanliness and maintenance – Locations of the high-rise buildings.

Table 5.4: *The relation between the assessment outcomes and the decisions about improving the image of the city centre*

<b>Assessment elements</b>	<b>The possibility of improvement</b>		
	<b>Great possibility</b>	<b>Limited possibility</b>	<b>Improvement is not required</b>
The views from the tall buildings.		✓	
The uses of the top roofs.	✓		
The diversity of built objects.			✓
The visual permeability.	✓		
The level of lighting.		✓	
The range of public spaces which are accessible by foot.	✓		
.....			
.....			

The following *paragraphs* discuss the assessment of the visual image of the city centre in details.

5.2.3.1 Assessment of public spaces:

From reviewing several sources of the literature (Bentley et al, 1985 & Marcus and Dietrich, 2008 & Osmond, 2007 and Carmona et al, 2010), there are seven criteria can be highlighted in terms of the quality of public spaces and can be used as a measurement tool for determining the success/failure of public spaces. These criteria are location, size and shape, attractiveness of visual landscape, accessibility, amenity, viability and vitality and variety and mixed uses.

- *Assessment of the location:*

Paumier confirms that public space should be well connected to pedestrian walkways as a part of integrated system of public spaces (Paumier, 2004).

Public space which is located at a crossroads where the major paths intersect, high level of activities occurs, public transport access is available and the retail centres concentrate is classified under the good/qualitative public space in terms of its location.

In addition to the Paumier's definition of good located space, Marcus, Carmona and Whyte add the visibility of space as an important factor of evaluating the location of the space. The proposed approach includes assessing the relationship between the location and the views from the public space and how the space itself can be viewed from the surrounding buildings and spaces (Carmona et al, 2003, Whyte, 2001). At this stage the concept of over-head imaging should be incorporated in the assessment of the visibility of public spaces. Spaces with distinctive topography which enable their users to observe the surrounding spaces from high levels of vision should be assessed in terms of how well are the over-head views from the public space. On the other hand, the assessment of the public space which is surrounded by high-rise buildings should go further to assess the over-head views of the public space from the adjacent tall buildings and the role of such buildings in obstructing views of spaces from distant observation points.

There is an additional indicator of well located spaces which is the relation between the location of the public space and the historical buildings in the area if there are any.

Heritage locations of public spaces have their role in printing the local identity of the whole area (Rodrigues & Lay, 2012). The environmental performance of public spaces, the orientation of the space, the amount of shading or exposure to sun, water and green elements and the form of space boundaries against the wind are all indicators which help to assess the success or failure of the space location for providing the sense of thermal comfort to the users. The relation between the location of the space and the level of pollution should be examined because it affects the clarity of over-head images of spaces.

- *Assessment of the size and shape:*

The proposed process of assessing the visual and urban quality of the city centre relies on Lynch notes about the appropriate distances for human perception inside

public spaces. Lynch noted that a person can be detected at 4000 feet (1219 metre) away, he/she can be recognized at 80 feet (24 metre), his face clearly seen at 45 feet (14 metre) and the maximum distance to see events is 230 to 330 feet (70 - 80 metre). These distances are measured horizontally when the human is inside the space but it is important to determine the appropriate distance for human perception in the vertical dimension to put standards for the size of urban elements inside the space to be easily perceived from high levels of vision. Generally, the human eye can determine the character of the space elements when the height of eye level is less than 200 metre even under extremely clear conditions. Therefore, the surrounding buildings or boundaries should not exceed 200 metre height (Craig et al, 1986).

The assessment of public space size should not ignore the scale of the surrounding buildings. It is proposed here that buildings which adjacent to public space must be low. Huge tall buildings should be located in the distant sectors to provide panoramic views of the public spaces. The scale of hard and soft landscaping and the outdoor furniture should be considered in the assessment process. Additionally, proportions of the public space as defined by its width, length and the height of surrounding boundaries, the respond to human scale and the geometric shape of the space are all factors which affect the size of public space.

- *Assessment of the attractiveness of visual landscape and skyline:*

The distinctive visual features are the key attributes of successful public spaces. The indicators of attractiveness are represented in cleanliness, distinctive skyline, the use of local materials, colours, street shades, historical features of landscape, views of natural edges, safety, attractive treatment of floors and roofs, variety of textures resulting from various landscape elements such as trees, shrubs, fountains and sculptures as shown in Figure 5.28 and Table 5.5.

Ch. 5: *Embodying the concept of over-head imaging in the process of improving the visual image: A proposed approach:*



Figure 5.28: *Using aerial image as an index map which represents the locations and conditions which are used in the landscape assessment. Leighton Marshalling Yard in Western Australia (Ministry for Planning, 2000: p.54).*

Table 5.5: *Using field survey record sheet in the assessment of landscape (VLPWA, 2007: P.55):*

Field Survey Record Sheet			
Viewpoint No:	Location:	Date:	Landscape Condition
Film/Photo No:	Direction of view:		
Annotated Sketch:			
Brief description (main elements and features)			Most appropriate management strategy
			Protection
			Restoration
			Best Practice Siting and Design
Dominant landscape elements	Ability to accommodate change		

The approach of skyline assessment depends on examining the quality of skyline in being physical representations of a city's facts of life (Spreiregen, 1965), symbols of a culture, (Attoe, 1981), having the ability to evoke a sense of place, and providing the most representative image of a city (Tugnutt and Robertson, 1987). The process should go further to assess the impact of regulations governing building height, shape and architectural treatments on skyline images.

The methodology of the skylines assessment is based on firstly defining the features of skylines and then assess their potential sensitivity to development (See Figure 5.29). In order to apply this methodology, an adequate number of representative observation points at different heights should be selected. They should provide appropriate coverage of the significant views from a range of high and low, near and distant and resident and visitor observation points. Visual features of the skyline vary according to the observation point from which the skyline is observed so the topography influences the selection of the observation points during the assessment process.

The selected observation points to assess the skyline should be located in locations with greater importance where a large number of people congregate such as shopping centres, popular lookouts, beaches and reserves, major tourist and commuter roads.

The observation points may be also outside the area under investigation. Observation points are best determined in consultation with the community to determine their cultural and social importance. This recommendation is built upon Kevin Lynch's work on city image by asking people what skylines they prefer and why and what skylines mean to them.



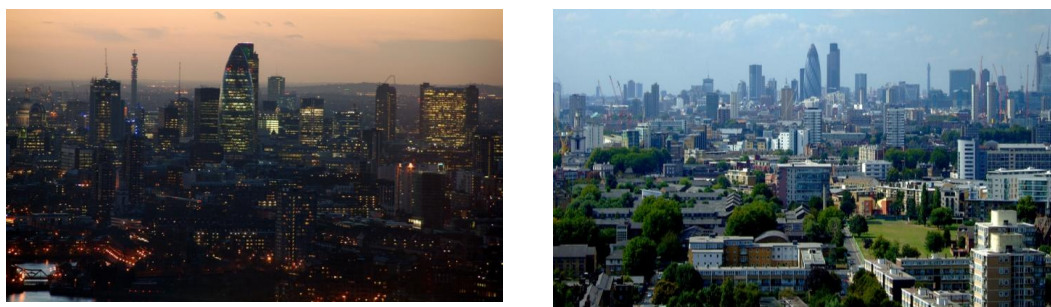
*Figure 5.29: Cairo Citadel dominates the skyline of old Cairo area (www.sacred-destination.com)*



Figure 5.30 demonstrates that showing skylines separately in silhouette and colour photographs helps to focus on different aspects of their forms. It helps in separating the man-made from the natural, allowing first the buildings to be assessed and then the relationship with their surroundings. This way allows facades and colours to be assessed independently of building massing, aiding in highlighting the specific successes and failures of a skyline with greater ease. Reducing skylines to Figure ground images helps in focusing attention on certain elements of the skyline such as heights and massing.



*Figure 5.30: The skyline of London, UK. Using coloured and Figure ground images of cities helps in analysing and assessing the elements of skylines (Booth, 2012, p:135)*



*Figure 5.31: The night images of skylines is affected more by the city lightening while the day images of skylines is effected by the colours of buildings and the amount of shadows. The skyline of London, UK (<http://forum.skyscraperpage.com>)*



*Figure 5.32: The comparison between the skyline of Oxford and Cairo shows that environmental pollution and the absence of the green elemnts affect the image of*

*skyline. Left: The skyline of Oxford, UK (www.aidan.co.uk). Right: The skyline of Cairo, Egypt.*

One of the most important points of skyline assessment is to examine the level of combination between old and new which gives the sense that the original town is still there and hasn't been obliterated (See Figure 5.33). City observers prefer to observe old buildings because their colours, materials, ornamentations and sizes provide a significant contrast to the modern buildings in the skyline (Booth, 2012). The assessment should determine how the contrast between the old and new objects improves the image of the skyline and provides a level of interest.



*Figure 5.33: The contrast between the old and new buildings in the skyline. Left: The skyline of Liverpool, UK (www.geograph.org.uk). Right: The green colour domains the proposed image of skyline of Beirut, Lebanon which makes the skyline more pleasant (http://www.greenprophet.com).*

- *Assessment of accessibility of spaces:*

The proposed assessment of public spaces in terms of accessibility is based on physical indicators such as assessments of pedestrian footfall by determining the range of public spaces which are accessible on foot. The minimum sense of separation between the public spaces and elevations of streets is an indicator of well visually-accessed spaces. The presence of large blocks with few choices of viewing the public spaces from the street is a negative indicator of visual accessibility.

✓ *Indicators of accessible spaces (URBED, 1997):*

- Mobility which refers to the time and cost of getting to the space by cars, bicycle, public transport, services vehicles is proposed to be analysed. Furthermore, the cycle and pedestrian routes is an indicator of well accessed area.

- Linkages or connections which include bus stations and rail stations. The location of public transport routes and the sitting of stops should be assessed according to the passenger convenience.
- Presence of pedestrian areas and semi pedestrian streets which are areas where the speed of vehicles is very low and where the larger part of the surface is reserved for pedestrians with parking limited to some restricted spaces.

The following questions are used to assess accessibility to and around the city centre (URBED, 1994)

- How quality is the floors and pavements?
- How easily navigable are routes for all people (push chairs, wheel chairs, with children etc)?
- Are there adequate and secure cycle routes?
- Are there good advertised local maps?
- Are there accurate and informative directional signs?
- Is there free parking or user friendly machines?
- *Assessment of amenity (URBED, 1994):*

The assessment of open spaces should consider how usable a space is. The value of amenity is something that contributes to an area's environmental, social, economic or cultural needs. Amenity can be assessed by examining/rating the frequent cleaning, effective lighting, greening and soft landscape, quality of life (noise, air pollution, ...) and the availability of sufficient car parks, praying areas, toilets and catering services. The capacity of existing facilities to service large events should be examined together with the ability to accommodate additional temporary facilities including their installation and removal and the cleaning and reinstatement of a space after a major event.

- *Assessment of vitality and viability:*

Pedestrian flow or footfall is one of the indicators about the viability and vitality of the image of city centre. It is important to stress that, pedestrian flow is about measuring

vitality rather than viability. To be useful as an indicator, it is essential that a number of counts are taken at different locations, not just in the prime shopping areas, and at different times of the day and evening (URBED, 1994). Pedestrian flow is measured by counting the number of people passing a particular point at a particular time. A paper produced by the Oxford Institute of Retail Management referred to footfall as “A direct indicator of the vitality of shopping streets” (Hristov & Reynolds, 1986).

*Measuring vitality and viability can be achieved by checking other key indicators as following (PPS6, 2005):*

- Diversity of main city centre uses in terms of number, type and amount of floor space).
- The amount of retail, leisure and office floor space.
- The potential capacity for growth or opportunities for centres to expand or consolidate which can be measured by the amount of land available for new or more intensive forms of city centre development.
- Retailer representation and intentions to change representation: existence and changes in representation of types of retailer including street markets.
- Proportion of vacant street level property such as vacancies in frontages and changes to other uses will also be useful indicator.
- Accessibility: ease and convenience of access by a choice of means of travel, including the quality, quantity and type of car parking, the frequency and quality of public transport services, the quality of provision for pedestrians, cyclists and disabled people and the ease of access from main arrival points to the main attractions.
- Regular surveys will help authorities in assessing the effectiveness of city centre in setting further priorities. Interviews in the city centre including the views of residents living in or close to the centre can be used to assess the vitality of the city centre.
- The night over-head images should be examined to assess the level of lighting and safety which support the vitality of the area during the night.

- *Assessment of variety and mixed uses:*

Diversity of spaces and functions provides the users with a range of experiences and choices of human activities. Land use documents cannot be the only indicator of the variety of an urban area but there are additional indicators such as:

- Flexibility and innovation of uses which respects that communities are dynamic and constantly undergoing change.
- Possibilities for using roofs for additional functions which can expand the range of activities and uses in the area.

Table 5.6 can be used to encourage the community to take part in the assessment of the functional qualities and the variety of uses which exist in the area of city centre. This type of assessment tool seems quick and simple for the public who are asked to assess the recent performance of the Ontario City Centre regarding some key roles and functions which are easy to be rated and do not need a special experience.

*Table 5.6: An example of assessment sheet used for examining the quality of the city centre in terms of variety of functions (<http://www.mainstreet.org>)*

ROLE/FUNCTION	Feelings about changes in IMPORTANCE of the current roles/functions of your community's downtown as compared to ten years ago.		
	Increased	Decreased	Stayed About Same
<b>Commercial/Economic Roles</b>			
Retail – stores (mix, quality of image)			
Retail services (quality of service, competitiveness)			
Commercial offices (quality of services, and mix)			
Restaurants & entertainment (variety, quality)			
Visitor accommodation & services (variety, quality)			
<b>Overall Commercial/Economic Roles</b>			
<b><i>Social and Non-Business Roles</i></b>			
Community meeting places: halls, parks, library			
Residential: diversity, and quality			
Arts & Culture, and recreational: theatres, galleries, arena, sports fields			
Institutional services: - government offices, post office - churches, service clubs			
<b><i>Overall Social &amp; Non-business Roles</i></b>			
<b><i>Overall Social &amp; Non-business Roles in relation to overall Commercial/ Economic Roles</i></b>			

### 5.2.3.2 Assessment of the streets network:

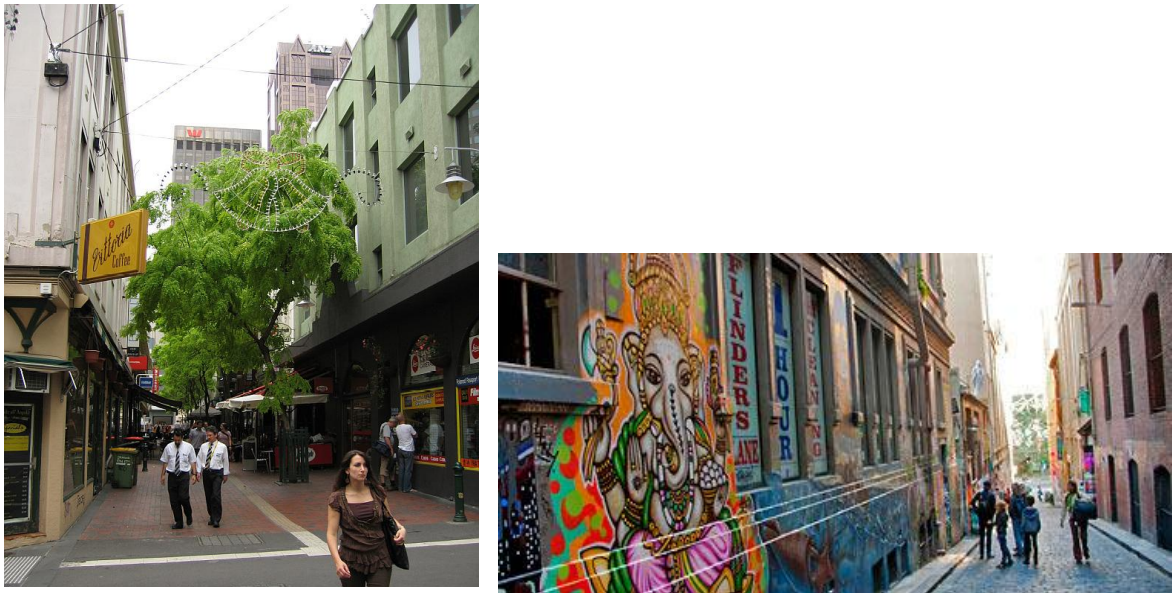
The image of streets network can be assessed against the criteria of legibility and permeability as follows:

- *Assessment of legibility of the streets network:*

Assessment of the streets network legibility depends on examining certain indicators related to:

- Natural and human-made landmarks and focal points.
  - Views, vistas and streetscape.
  - Clear and easily navigable routes.
  - Gateways to particular areas.
  - Edges and buffers.
  - The level of lighting.
  - Works of art and craft.
  - Signage and way-markers.
  - Opportunities for people to discover and experience the heritage and culture of the city through its streets.
  - The reflection of the community values such as privacy in the design of streets network.
- *Assessment of permeability of the streets network:*

As connectivity increases, travel distances decrease and route options increase, more direct travel between destinations and more accessible and resilient transportation system are created (TDM Encyclopedia, 2009). The existence of laneways is an indicator about the permeable streets network as shown in figure 5.34.



*Figure 5.34: laneways provide excellent permeability of the city centre. Laneways in Melbourne City Centre, Victoria, Australia. Melbourne's (<http://www.thatsmelbourne.com>)*

*Indicators of permeable streets network:*

- The permeable streets network provides easy access to key destinations for pedestrians. Excellent connectivity seeks to discourage car use by making local trips easier and more pleasant by foot than by car.
- The use of grid path network which is the most permeable form of networks and it can be attached by subdivisions based on pedestrian and cyclist movement as shown in Figure 5.35.



*Figure 5.35: Left: 800 metre radius walk in a compact neighbourhood, Right: 800 metre radius walks in a sprawling suburb (<http://www.walkscore.com>)*

- Highly interconnected streets network providing choice of walking and cycling routes that lead to local and regional destinations.
- Safe street crossings.

### 5.2.3.3 Assessment of buildings image:

The assessment of the image of buildings in this approach is based on assessing the physical features which influence the building quality (Nasar, 1994). The output of such assessment identifies built form characteristics that are deemed to foster the preferable urban settings as well as those that should be avoided. What makes the process more complex that the qualities of buildings are variable according to their locations.

The two most important criteria affecting the judgement of buildings are order and visual interest (Rapoport and Kantor 1967; Nasar 1994). The built environment provides stimulation of interest at three scales which are conceptualised as silhouette (complexity of the outline), form articulation (three dimensional scale) and surfaces (roofs and facades) (Stamps, 2000). This approach of assessment depends on examining the criteria of complexity, order, coherence, enclosure (Nasar, 1994). These criteria are more influential in the case of assessing the over-head images of built patterns at large scale. Coherence can be assessed at the scale of overall shape of building patterns. Generally, there are some indicators which can help in the buildings image assessment process as following:

- The relationship between building heights which affects the silhouette of the scene.
- Architectural style which affects the associational meaning.
- Colours, materials and finishes which affects the sensory perception and associational meaning.
- Compatibility of forms.
- Complexity which affects the level of visual interest and excitation. The range of harmony and contrast between the different forms existing in the city centre should be examined. Assessment of forms does not focus on the facades only but also on the forms of roofs which appear clearly in the over-head images.



- Scale in terms of appropriateness to human scale and the scale of built compositions within the image.
- Cleanliness and maintenance.
- Functions, activities and uses of buildings. How the buildings are used is also an indicator about their quality. This is particularly relevant to the use and activeness of ground floor level and the top roofs.
- Order in terms of continuity, dominance and diversity of built objects without contradictions (US FHWA, 1988, p.43).

While the adopted conceptions in many literatures focus on the technical, architectural, structural and economical distinction of tall buildings, their visual impact should be studied with more concern (See Figure 5.36). Tall buildings act as unique observation points which enable users to enjoy observing the city from the top. Additionally, high-rise buildings are the most visible buildings in the overhead images and they affect the urban grain, streetscape and amount of natural light and (Strelitz, 2005).

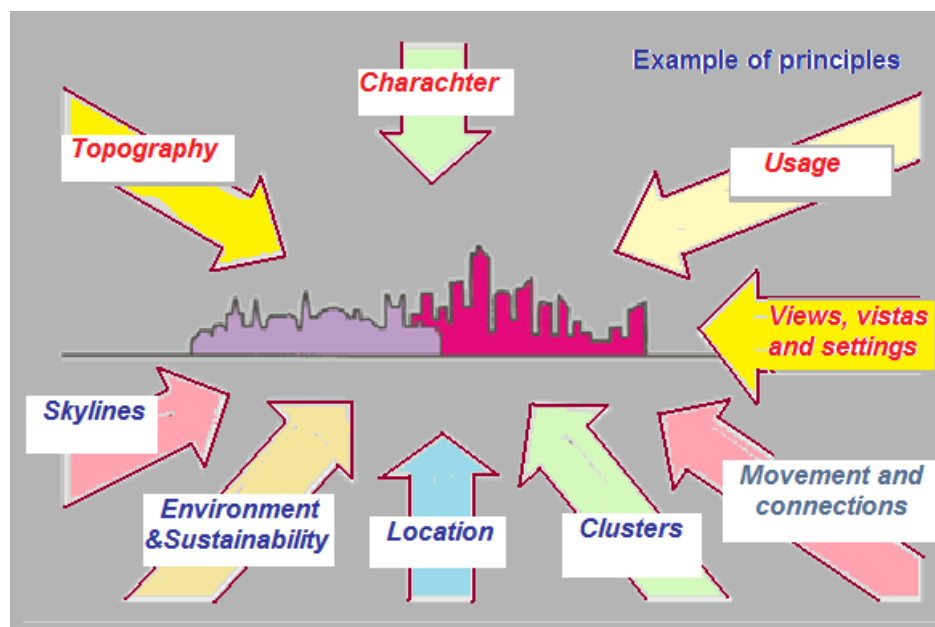


Figure 5.36: *The visual impact of tall buildings should be engaged with other functional and environmental impacts as a factor in the assessment process (LLDF, 2007: p.2).*

Regarding the tools of built objects assessment, photographic representation especially over-head photos would enable data to be generated efficiently. Such images help in conducting a comprehensive assessment through assessing the fronts, backs and roofs of built objects. This assessment process depends also on surveying people’s opinions to enable people’s aesthetic preferences to be understood and affect the decision making. Table 5.7 summarises the main aspects of the proposed assessment approach.

*Table 5.7: The main components of the visual image of the city centre and the key aspects of the proposed assessment*

<b>The components of the visual image of the city centre</b>	<b>The examined aspects and criteria</b>
<b>The assessment of the public spaces</b>	Location, size, attractiveness of the landscape, accessibility, amenity, variety and mixed uses, vitality and viability
<b>The assessment of the streets network</b>	Legibility and permeability of the streets network. Views, vistas and streetscape.  The level of lighting - Works of art and craft - Signage and way-markers- Opportunities for people to discover and experience the heritage and culture of the city through its streets - The reflection of the community values such as privacy in the design of streets network.
<b>The assessment of the built objects</b>	The visual order and the harmony between the built objects – Roofs and facades - Colours, materials and finishes - Compatibility of forms - Complexity which affects the level of visual interest and excitation – Scale - Cleanliness and maintenance – Locations of the high-rise buildings.

### **5.3 Third stage: Improving of the urban image of the city centre:**

As understanding of the needs of different types of city observers is a key issue for urban design, the city design should meet the requirements of observing the city from overhead in order to reduce the visual stress in the over-head images. Urban design should adapt to the recent changes in the techniques of city imaging and perception. Based on this principle, the approach of improving the city image should

take into account the integration between different methods of experiencing the city; from the street level and from overhead level. Many commentators now consider rethinking the image of the city as a tool for branding its places and attracting new investment. Many of these schemes which link the visual appearance of the city to the business issue prioritise the image from the street level and there is a little attention devoted to the other methods of observing the city.

Figure 5.37 illustrates the conceptual framework for improving the image of the city centre by starting with understanding the changes of the perceptual field and the way by which the city centre is perceived to introduce the demanded criteria. Then these criteria should be translated and applied through planned actions to achieve a qualitative image from different perspectives.

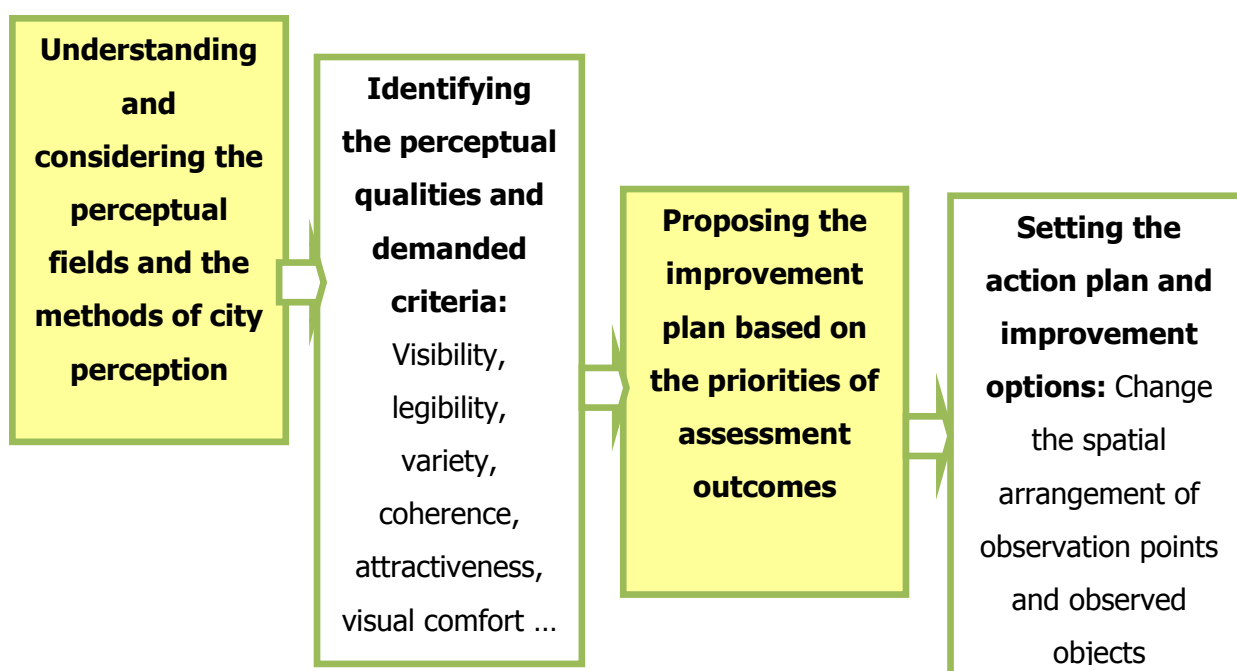


Figure 5.37: *The conceptual framework for improving the image of the city*

### 5.3.1 Proposed conceptual steps of improving the visual appearance of the city centre:

To fill the gap in the most of currently used approaches which focus on the image from the street level, the proposed approach attempts to develop the visual image of the city from overhead through two crucial steps:

- The determination of the visual points of interest or the most observed components within the overhead image.

- The identification of the appropriate techniques to utilize these components effectively in order to improve the quality of the visual appearance of the city.

5.3.1.1 Identification of the most observed objects:

From analysing many overhead and aerial images, the most observed objects in such images are illustrated in Figures; 5.38 and 5.39:



Figure 5.38: *The forms of nodes and intersections represent areas of interest in the over-head images (<http://www.boston.com>)*



Figure 5.39 : *The most observed objects in the over-head images (<http://www.webbaviation.co.uk>)*

5.3.1.2 Applying the criteria to the over-head image:

The second step is applying the urban quality criteria to the image of urban areas through the best utilization of the parameters or variables that affect each criterion. For example, the imageability of the city is affected more by landmarks, the form of the street network, the distinct edges and focal points. The visual comfort can be achieved through the harmony between the different components of the image, the rhythm, attraction, unity, richness and ordinance of different urban and architectural styles.

The proposed approach focuses on the criteria that related to the visual quality of the image of urban areas and how these qualities can be improved by controlling the parameters of each criterion. The following table lists the main criteria which affect the quality of the image of urban areas. These criteria are imageability, liveability, visual comfort, visual permeability, variety, order, coherence and linkage.

*Table 5.8: The qualitative overhead images: the required criteria and the parameters which affect each criterion*

<b><i>The criteria of improving the components of the visual image of the city centre</i></b>	<b><i>The parameters/variables of the visual quality equation</i></b>
<b>Legibility of the streets network and public spaces</b>	Landmarks, legible streets network, distinctive edges and focal points.
<b>Liveability of public spaces and buildings</b>	Liveable roofs and terraces, public spaces, nodes for social activities and the animated landmarks
<b>Visual comfort of built objects and streets network</b>	Harmony, rhythm, dominance, attraction, unity and order and the design of city lighting.
<b>Visibility and visual permeability of the streets network and buildings</b>	Locations of high buildings, open spaces, well designed lightening of the city centre and the availability of visual corridors and permeable streets.
<b>Variety, diversity and order of open spaces and built objects</b>	Variety of high observation points and variety of the desirable views (natural and man-made views)
<b>Coherence and linkages of open spaces and built objects</b>	Clear edges, compatible visual character, structured and linked objects of the image, visual and physical links between the different observed objects

- *Improving the diversity of the observation points:*

Diversity has a wide range of meanings but here it is focused on the diversity of the locations from where the city can be observed from different levels of vision. The qualitative approach for the city design should depend on the integration between different observation points from the street level and from higher levels. In addition to roof gardens, public terraces, flyovers and natural high locations, the high-rise buildings represent the dominant observation points in the contemporary cities especially in their central areas. Most of the city centre users or residents have the chance to observe the city from the windows or from the roofs of high mixed uses buildings. Tall buildings can be utilized in making a visual control on the city by studying carefully their locations related to the surrounding urban context. The following part discusses the role of tall buildings - as a high observation point - in improving the visual appearance of the city centre.

As skyscrapers dominate the city's skyline, it becomes important to identify how tall buildings could contribute positively to organize the image of the city as shown in Figure 5.40. Such buildings can make the city readable by marking focal areas such as city centres, infrastructural nodes, entrance points and certain venues (Klerks, 2009).

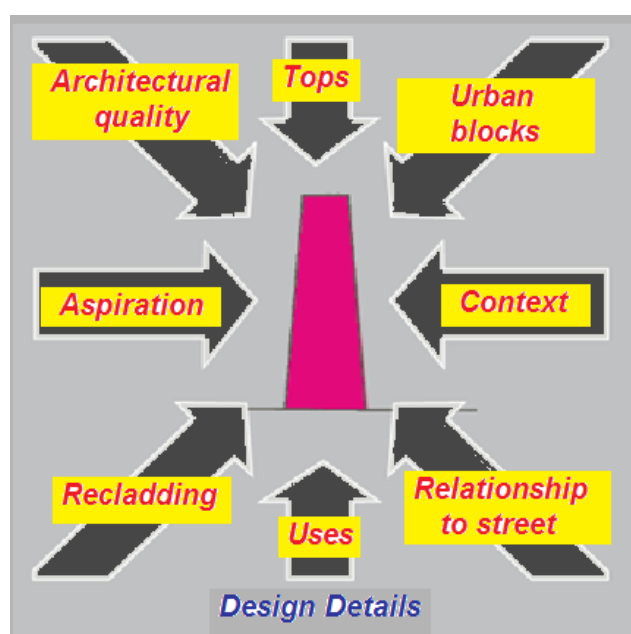


Figure 5.40: *The overall form and design detail are crucial parameters for improving the visual impact of high-rise buildings (LLDF, 2007: p.4)*

To emphasize the visual importance of tall buildings, we need to understand how this interaction is perceived through ground and overhead views. From the street level, the size, uses of ground floors and design of the facades has more of an impact than the other visual attributes. The relation between indoor and outdoor spaces through the different entrances and terraces at this level is crucial. On the contrary, from higher levels, the architectural details of upper floors, the entire height of the mass and its proportion, the senses of wealth, ambition, and dominance, both the icon and its background and the contribution of such buildings in composing the character of the area through its relation to the surrounding buildings are clearly captured.

The form of a tall building can be identified in the overhead images by its height, proportion and the top detailing. Therefore tall buildings should have distinguished design not only distinguished height (See Figure 5.41). “A tall building is not a low building that extruded vertically, but one that is differently designed” (Strelitz, 2005: p.9).

The locations of tall buildings and the distances between them are very important. Such buildings should be utilized visually to gain the most benefit from the surrounding views, prospects, panoramas, important local views, significant views of skyline and the overall townscape to enhance the legibility of the city image.

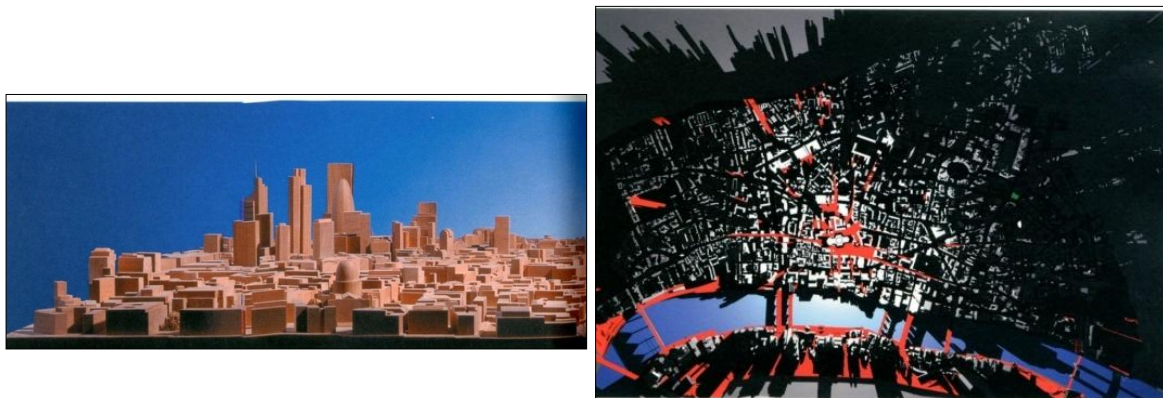


Figure 5.41: *Left: Examples of distinguished forms of high-rise buildings in Dubai (www.culturaenmovimientobolivia.org). Right: the over-head image of Raffles Dubai in Wafi city, Dubai, UAE (http://unusual-architecture.com)*

The creation of a High Buildings Map for the whole city which would control where tall buildings would be permitted is an effective tool to achieve the protection of skyline and the important views. This map should consider the effect of tall buildings on the view of general skyline and on a pre-determined listed buildings and views (See Figures 5.42 and 5.43).



*Figure 5.42: Left: a map of London which clarifies four clusters of tall buildings. Right: the over-head view of Canary Wahrf cluster, the major centre of London's financial services (Strelitz, 2005: p.14,15)*



*Figure 5.43: The physical model of the preferred location for new tall buildings cluster shown in the north eastern of London, UK (Strelitz, 2005: p.30,35)*

Designation of important views to create a list of strategic views or conservative views by the same way of identifying the listed buildings and conservation areas are strongly needed. Moreover, construction of tall buildings which threat these views by blocking them partly or completely should not be permitted. Any satisfactory heights policy should consider the maintenance of perception and views across the wide profile of the city and the historic skyline as primary consideration (Hartley and Taylor, 2009).



The active enclosed public spaces which can be created by grouping tall buildings in clusters can improve the liveability and vitality of the image (See Figure 5.44).



*Figure 5.44: The concept of grouping tall buildings in clusters forms readable and usable open plazas which can improve the public realm. The proposed development of Central Business District of Beijing, China (<http://www.e-architect.co.uk>)*

The extension and integration of the different activities from indoor to outdoor depend mainly on the urban design of the immediate area surrounding the tower. The height of tall building provides the surrounding area with a strong sense of enclosure and a great amount of shade which encourage human activities to take place. Moreover, appropriate uses of ground floors enable tall buildings to interact with users at street level. Figure 5.45 shows a comparison between two types of tall buildings; the first type is represented by a tower which is surrounded by open spaces and the second type is represented by a tower which is built very close to the surrounding low buildings. The first case is more successful because this building encourages the interaction between the building and the street life. Furthermore, locating tall building by this way open the views of and from the building. On the other hand, the second case represents a tall building which blocks the view from the street and does not respect the visual privacy of the surrounding buildings.

To improve the visual appearance of tall buildings, the freestanding boxy buildings is not the best solution. It should be deconstructed to many different forms of buildings as shown in figure 5.46. The top floors of the tall building should be carefully designed to create a distinguished end for the building as shown in Figure 5.47.



Figure 5.45: Left: A tall building surrounded by open spaces, Osaka, Japan (<http://www.flickr.com>), middle: The over-head view of the surrounding spaces from the upper floors of the mall ([www.colorcoat-online.com](http://www.colorcoat-online.com)). Right: The tower destroys the privacy of the adjacent buildings and lacks the interaction between first floors and the street life, MLC Centre, Sydney, Australia (<http://www.aviewoncities.com>)

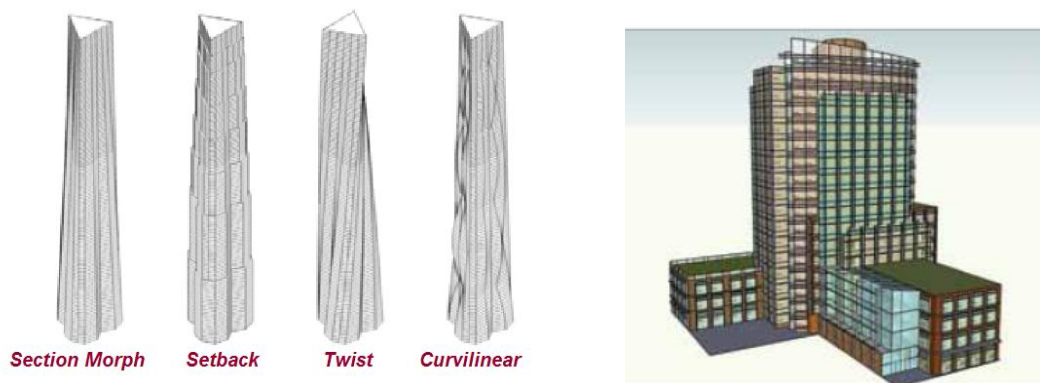


Figure 5.46: Freestanding boxy masses should be avoided in the proposed image of the tall buildings (Park et al, 2004) & (<http://www.victoria.ca>)



Figure 5.47: Left: The difference between the view of Chrysler Building , New York, USA with a distinctive architectural details in the top floors. Right: Trump World Tower with the same style in all floors is not recommended (<http://wirednewyork.com>)

Buildings design guidelines should deal with the three distinct sections of the building; the top section (skyline), mid-section and the base. The skyline of tall buildings is extremely important. The tops of tall urban elements must be articulated with architectural features which create an attractive skyline. They must have elements and embellishments which indicate human activities that take place in the upper floors and on the roofs. For the already existing buildings, it must be a rule/law which obliges the owners of buildings to keep their roofs clean and make the required regular maintenance for these roofs. For the future buildings, it is suggested to enact a law which regulates the forms of top roofs to be partly or completely inclined to prevent any kind of bad storages of old furniture and stuffs on these roofs. The inclination of the roof is preferred to be not visible from street level by using the typical form of fences surrounding the roof to keep the character and identity of the area. Regarding the design guidelines for the mid section of the building, they should consider the importance of windows and balconies as the most observed elements in this section. The solid facades are not preferred (See Figure 5.48).



*Figure 5.48: The effect of roof uses on the top section of the building. The windows and balconies play the greatest role in the design of mid section of the building*

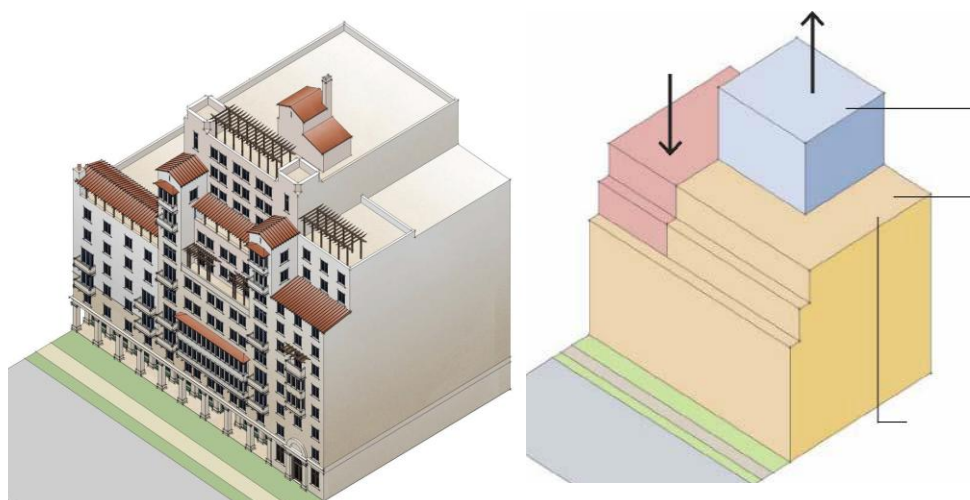
Eventually, setting design guidelines for third section of the building should consider the great effect of ground floors on creating vibrant streetscape. To achieve this goal, the base of the building should occupied by variety of active uses for the public. The use of ground floors arcades are visually and environmentally encouraged in the city

centre (See Figure 5.49). It is recommended to add shaded dining or gathering areas in the front of buildings but without affecting the area of the pavement. In large blocks which view two parallel streets, it should be a legislation that forces the owner to add a corridor or more that penetrate the base of the large building to enhance the visual and physical permeability. Also, the ground floors should be lightened in suitable way to enhance the attractiveness and legibility of the night image of buildings.



*Figure 5.49: The use of arcades is proposed to improve the quality of retail streets*

To ensure that the building mass provides the sense of human scale and adds a visual interest to the streetscape, it is important to decrease the volume of the mass by converting it into different vertical blocks. This means that any increase in the height should be accompanied by decrease in the volume of the mass (See Figure 5.50). Tall buildings and open spaces should be located in different angles as shown in Figure 5.51



*Figure 5.50: The increase of the building's height should be accompanied by decreasing the mass of building.*



*Figure 5.51: It is proposed to locate the towers and open spaces in different angles in order to impart dynamic light and shade across the site and to avoid blocking the views from the street level.*

- *Improving the visual comfort and visibility:*

The contemporary city faces a various problems regarding the visual comfort and visibility which are related to the amount of daylight, pollution and blocking views. The night image of the city also suffers from some problems related to the design of city lighting. In terms of visual comfort and visibility, the proposed approach focuses on the night overhead image of the city and the role of city lighting in improving the visual comfort. Santen considered the city as an outside interior which is greatly affected by the elements of light (Santen, 2006). This approach of improving the visual appearance highlights the idea that using light carefully could support the visual delight and compose a pleasant atmosphere which encourages the night life and reinforce the sense of liveability. This part of the proposed approach focuses on how the design of city lighting can improve the night image of the city when it is observed from overhead.

The legible night image of the streets network depends greatly on the materials and colours of floors and pavements. The soft materials with bright colours which allow much light reflection should be used to enhance visibility as shown in Figure 5.52.

The use of low lamp posts is suggested to highlight the image of landmarks as shown in Figure 5.53. Regarding lighting the buildings, lighting the corners is recommended rather than illuminating the whole buildings because by this way, the nodes and squares become more recognizable and these illuminated corners serve as visual gates for streets and squares (See Figure 5.54).



Figure 5.52: *Left: the use of dark floors. Right: The use of bright floors is more appropriate for lightening the steps and pavements.*

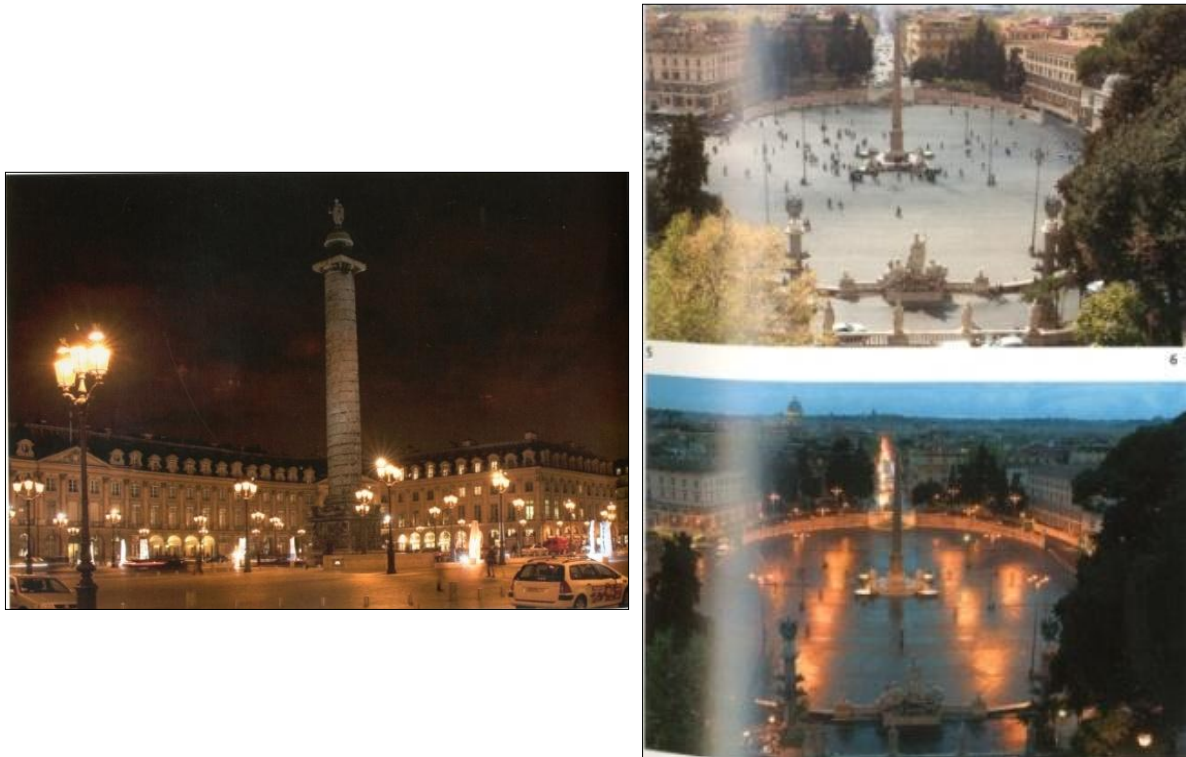


Figure 5.53: *Using low lamp posts and bright floors can improve the visibility of the space at night (Santan, 2006: p.13)*

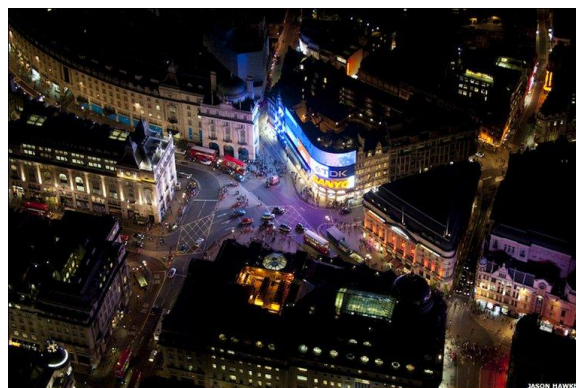
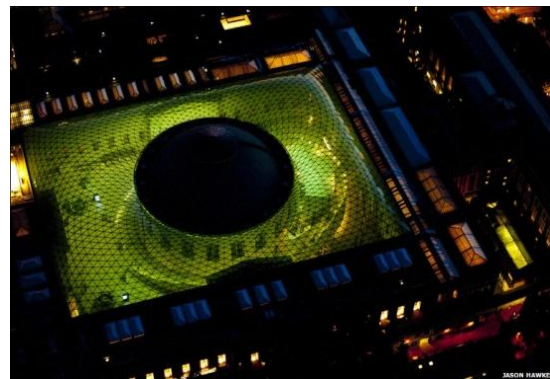


Figure 5.54: *Lightening the corners of buildings. Piccadilly Circus, London, UK (photograph by Jason Hawkes in his book London at night (<http://news.bbc.co.uk>))*

There is a preference for lighting buildings from inside instead of outside lighting in order to improve the visual comfort. Moreover, it is recommended that not to light all the building's floors by the same way. It means that the ground levels need to be bright to contribute in lighting paths and to highlight the uses of ground levels of buildings. The upper levels of the building need to be lighted to confirm the outline of the mass when it is seen from high levels as shown in Figure 5.56. In addition, roofs which are used for particular activities should be illuminated at night to advertise these uses in the night images as shown in Figure 5.55.



*Figure 5.55: Left: The lighting objects such as lamp posts should be engaged with other street furniture to create a harmonious atmosphere in the streetscape furniture. The University of Huddersfield in UK. Right: The illuminated roof of the British Museum, London, UK (Santen, 2006)*



*Figure 5.56: The way of lighting the ground and top floors. Left: Catalunya Palace, Barcelona, Spain. Right: Kurfuerstandem, Berlin, Germany (Santen, 2006:p.23 & 27)*

- Bottom: the City Hall- the headquarters of the Greater London Authority, GLA  
(Photo: Jason Hawkes, Merrell Publishers)

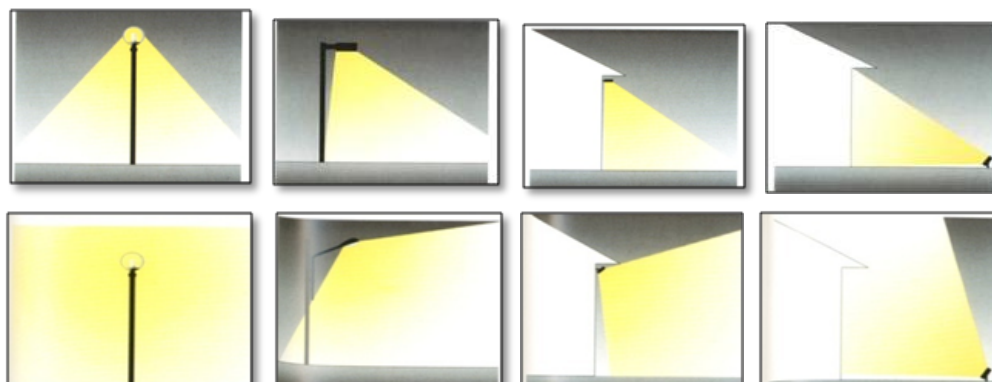


Figure 5.57: *The correct direction and amount of light are important to avoid light pollution (Santen, 2006: p. 123)*

Practically, it is difficult to put a condition for the minimum or the maximum luminance of the advertising hoarding, road lighting, buildings and displaying windows because there are many factors which control the level of lighting such as the lighting of the surrounding, the texture, height and colours of these billboards. High vertical advertisement boards are recommended as shown in Figure 5.58.



Figure 5.58: *Different images from Japanese Architecture show the impact of using the high boards with clear writing mostly in vertical direction to be more readable from the high locations (<http://www.japaneselifestyle.com.au>)*

The top roofs of small low buildings can be used as hoarding surfaces in the same way of using the sides of buildings for the purpose of advertising. The location of these surfaces should be selected carefully to ensure that they are visible from the surrounding tall buildings. Generally, excess of use of light which occurs by the excessive road lighting, over illuminated buildings or display windows should be avoided.



- *Improving the legibility and imageability:*

The design of landmarks is an important parameter which affects the legibility of the city image. Engagement of new considerations for designing landmarks to improve their function when they are observed from above is one of the aims of the proposed process of urban improvement. The quality of over-head image is not affected by the design of landmarks but also by their layouts. Therefore it is recommended here that landmark should be compared to the surrounding urban context to ensure the openness of the views and the multiplicity of perspectives.

The identification of the location of a landmark should be studied related to the axes of nearby landmarks and should respect the grid of main streets. The scale of surrounding buildings and spaces and the locations of high observation points should be considered (See Figure 5.59).

To improve the functional performance of landmarks, they should be observed through open views and from distant location. To achieve this aim, the surrounding spaces and view corridors should be studied. Furthermore, reinforcing the image and function of landmark by adding sensory input such as sound or motion can help to create a stronger cognitive map of landmarks (Salmi, 2008).



*Figure 5.59: The high building which is surrounded by low buildings act as a landmark for the city, the Gherkin Tower, London, UK ([www.london-attractions.info](http://www.london-attractions.info))*

The high vertical abstract landmarks are not preferred in modern cities because they lose their visual dominance when they are seen from high levels of vision. It is recommended that, the landmark should be deconstructed into multiple objects which construct a readable visual composition (See Figures 5.60 and 5.61).



*Figure 5.60: The overhead image is affected more by the design of open spaces which surround the landmark and the forms of their floors while the image from street level is affected mainly by the form of the landmark only. The powerful and impressive monument as the focal point of Ploshchad Pobedy (Victory Square), Leningrad, Russia (<http://www.saint-petersburg.com>)*



*Figure 5.61: The vertical landmarks lose their dominance when they are observed from high levels of vision. Left: Over-head view of St. Paul's Cathedral Piazza taken from the top of St. Paul's Cathedral (<http://zoomandgo.com>). Right: Mechanical metal Flower sculpture which opens and closes with the light just like a real flower, Recoleta, Argentina (<http://www.travelpod.com>)*

At the large scale, the city should include one or more districts which have a distinguished character according to their historical significance or central location. These districts should be observed from other neighbourhoods. The urban objects on the edges of these distinctive districts should be carefully placed to avoid blocking the views.

- *Improving of viability and liveability:*

Gardens and green space are important in keeping the city looking not only beautiful but viable as well (See Figure 5.62). Therefore urban roof gardens are recommended to be created to make the best use of the spaces on roofs and to incorporate more liveable spaces to the cityscapes.



*Figure 5.62: Japanese Architecture uses green facades which support the sense of nature and reduce the sense of rigidity of the image of contemporary cities, ACROS Fukuoka in Fukuoka City (<http://www.metaefficient.com>)*

The roof garden is not just a green layer on a concrete box however such garden improves the function and the liveability of the overhead image of the city. Locating roof gardens on the top of low buildings which are surrounded by tall buildings is more efficient in terms of safety, accessibility and the visual function as a view for the surrounding buildings (See Figure 5.63).



*Figure 5.63: However the wonderful views from the sky park, the public use of 200m height roof seems to be unsafe, uncomfortable and very expensive in comparison to using roofs of lower buildings. “Sky Park, Marina Bay Sands” is located on the 200-*

*meter height on the three skyscrapers in Singapore, the roof is used in many different entertainment and social uses Singapore (<http://just4dosti.com>)*

Partially or completely shaded roof garden is recommended to improve the sense of thermal comfort and privacy. The design of artificial lighting for these roofs is crucial to improve the visibility and safety at night and to encourage various human activities to take place on these roofs. Creating smooth links between the ground and the top roofs of low buildings improves the visual and physical accessibility from the street level, connects the roofscape with the urban context and softens the edges of buildings as shown in Figure 5.64.



*Figure 5.64: Left: the stunning green roofs that curve round and connect with the surrounding park area, Nanyang Technological University in Singapore. Right: Kyoai Gukuen University in Japan (<http://www.colourcoat.online>)*

- *Improving the coherence and linkages:*

From a physical point of view, cities are stocks of buildings linked by spaces (Hillier 2007). Over-head images reveal the interconnections and linkages between the different urban objects which allow them to be observed as a coherent whole. Therefore over-head images present legible layout more than legible objects. To make the image of the city more coherent, continuity and linkages between the different elements of the image should be perceived. Because the layouts and the order of different structures in the city are perceived clearly in the over-head images, the degree of regularity of the layout and the presence of Gestalt rules of “good configuration” should be improved.

A kind of order can be created in the layout by successive order of spatial elements in different scales and by clear physical and visual links between the different elements. Compact patterns are not always coherent because the consistence between the different compositions in the layout is more important than the form of

the patterns. Simple and geometric forms of the streets network configuration might be better retained in the mind of city users more than complex patterns (Shokouhi, 2003). Moreover, there are some considerations which can improve the coherence and linkages of the layouts such as:

- The clear distinction between public and private space by enriching the public places through colour, movement, texture and sounds.
- The hierarchical system of public spaces where the function and symbolic importance of the space is clearly perceived improves the sense of order and coherence.
- The respect to the concept of visual linkages through conservative or designated views which need to be kept open for observers and to be seen from different points of observation.

**Conclusion:**

It is concluded here that from reviewing the already adopted approaches for improving the visual images of the city centre, it is found that the concept of over-head imaging is ignored and not considered. This chapter introduces a proposed approach which aims to improve the visual image of the city centre. Urban design/improvement is a sequential system which starts with the urban analysis, urban assessment and ends with the actions plan for the urban improvement. The proposed approach aims to incorporate the concept of over-head imaging in the different processes of urban design and to set a conceptual framework with a group of guidelines to help in achieving an integrated urban analysis, assessment and improvement. The concept of over-head imaging is incorporated either as a physical tool or as a criterion or major factor. The proposed approach attempts to fill the gap in the adopted approaches by focusing on the integration between the image from the street level and from over-head. The proposed urban improvement of the visual appearance of the city centre focuses on introducing some recommendations or guidelines which can help to improve the over-head image of the central area. This because improving the image from the street level has been already covered in much of the reviewed approaches. The following figures and tables summarise the main aspects of the proposed approach for incorporating the concept of over-head imaging in analysing, assessing and improving the image of the city centre.

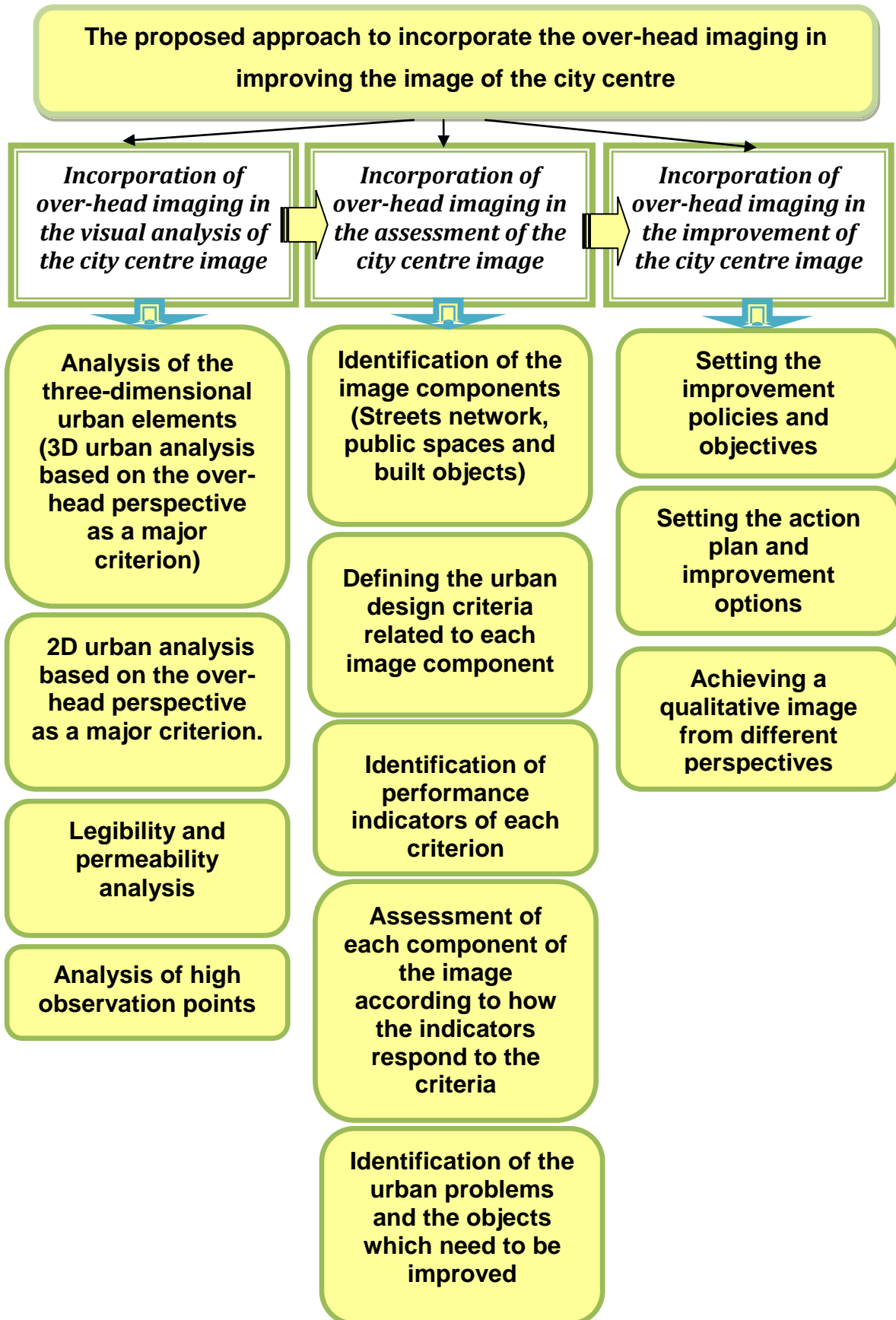


Figure 5.65: *The main objectives of the proposed approach to incorporate the over-head image in the analysis, assessment and improvement of the city centre.*

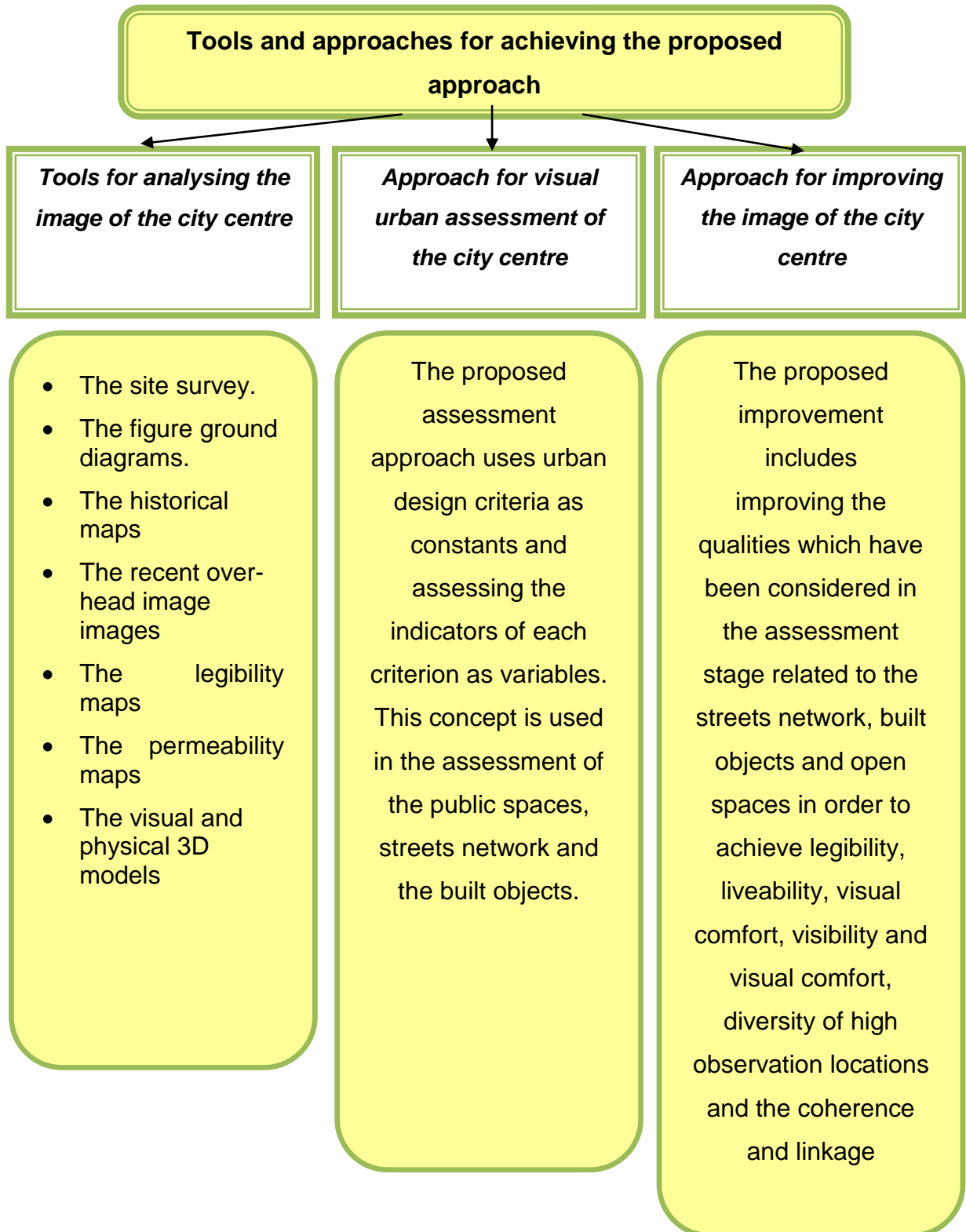


Figure 5.66: *Tools which can be used to achieve the proposed approach.*

Table 5.9: The guidelines for improving the components of the visual image

<b>The proposed qualitative components of the image of the city centre</b>	<b>Improvement guidelines</b>
<b>Legible streets network and public spaces</b>	<ul style="list-style-type: none"> <li>• Engagement of new considerations for designing landmarks and their layout to improve their image from the over-head.</li> <li>• To improve the functional performance of landmarks, they should be observed through open views and from distant location therefore they should be located carefully and their spatial relation to tall buildings should be considered.</li> <li>• Reinforcing the image and function of landmarks by adding sensory inputs such as sound or motion to create a stronger cognitive map of landmarks.</li> <li>• The high vertical abstract landmarks are not preferred in modern cities because they lose their visual dominance when they are seen from high levels of vision. It is recommended that, the landmark should be deconstructed into multiple objects which construct a readable visual composition.</li> <li>• At the large scale, the district of the city centre should act as a landmark for the whole image of the city.</li> <li>• Creation of distinguished design of landscape surrounding the edges of the city centre supports the imageability of this area.</li> <li>• Ensuring accessibility and visual permeability.</li> </ul>
<b>Liveable public spaces and streets network</b>	<ul style="list-style-type: none"> <li>• Incorporation of more liveable spaces to the cityscapes (Open markets, green areas, recreational services, social activities and on street events.)</li> <li>• Safe pedestrian areas.</li> <li>• Availability of well connected routes for public transport.</li> </ul>
<b>Visual comfort of built objects and streets network</b>	<ul style="list-style-type: none"> <li>• Using light carefully to support the visual delight and compose a pleasant atmosphere which encourages the night life and reinforce the sense of liveability.</li> <li>• Using soft materials with bright colours or floors to allow much light reflection should be used to enhance visibility</li> <li>• Lighting the corners of buildings is recommended rather than illuminating the whole buildings because by this way, the nodes and squares become more recognizable and these illuminated corners serve as visual gates for streets and squares.</li> <li>• Ground levels of buildings need to be bright to contribute in lighting paths and to highlight the uses of ground floors. The upper levels of buildings need to be lightened to confirm the outline of the mass when it is seen from high levels. In</li> </ul>



	<p>addition, roofs which are used for particular activities should be illuminated at night to advertise these uses in the night images.</p> <ul style="list-style-type: none"> <li>• Lamp posts should be engaged with other street furniture to create a harmonious pleasant visual atmosphere in the streetscape.</li> <li>• The correct direction and amount of light are important to avoid light pollution.</li> <li>• Reducing the negative visual effect of hoarding boards by improving their order and utilising the sides and roofs of low buildings in fixing these boards which can be observed from high observation points.</li> </ul>
<p><b>permeable streets network buildings</b></p>	<ul style="list-style-type: none"> <li>• The conservative or designated views need to be kept open for observers and to be seen from different points of observation.</li> <li>• Creation of distinguished skyline which keep the identity elements visible</li> <li>• Improve the visual permeability through adding visual corridors from the ground level and from higher levels in forms of public terraces.</li> </ul>
<p><b>diverse and ordered open spaces and built objects</b></p>	<ul style="list-style-type: none"> <li>• Integration between different observation points from the street level and from higher levels (roof gardens, public terraces, flyovers, natural high locations and high-rise buildings).</li> <li>• Utilisation of tall buildings with distinguished design and height to mark focal points and certain avenues in the city centre.</li> <li>• Grouping tall buildings in clusters to create active space with distinguished urban elements surrounded by these buildings.</li> <li>• Locating tall buildings in distant sectors from low buildings by creating spaces network and respecting the visual privacy.</li> <li>• Existing roof gardens and other forms of social places on the top of low buildings which are surrounded by tall buildings.</li> </ul>



# *Chapter 6*

**A practical example:  
Improving the visual image  
of Assiut City Centre**



# Chapter 6

## A practical example: Improving the visual image of Assiut City Centre

### *Introduction:*

Most of Egyptian towns have grown organically without a pre-determined urban form or fixed boundaries. Accordingly, many urban problems have appeared and become more complicated. Therefore, the Egyptian government took some steps for preparing action plans and masterplans for redeveloping critical areas in big cities. Some strategies have been already implemented and some proposed plans need more funding to be implemented. While some plans have been implemented but did not achieve the expected impact on the quality of the urban environments.

The scope of this research focuses on the Egyptian cities generally and on central districts specifically. For the purpose of this research, Assiut city was selected to be a study area for many reasons:

- **Location:** Assiut is located in the middle of Egypt and has links with all governorates in the country. Assiut city is the capital of Assiut governorate and of Assiut Region which includes Assiut and Al Wady Al Gaded governorates. Assiut is the most valued historical and cultural gate for Upper Egypt, and because of its important location, the city became a trade centre of the Upper Egypt region. Goods were brought from Sudan in the south via Al-Arbe'n Road and then transferred by ships to go north through the Nile (Refaat, 2009). The image of the city has a unique mix of Coptic and Islamic features. This city includes one of the greatest universities in Egypt and one of the biggest educational hospitals in the Middle East which makes Assiut a focal point to many visitors and helps to attract the inhabitants of other cities to come to live in Assiut where there are a wide range of services and a lot of chances for investment can be offered.

- **Dramatic changes:** Assiut has witnessed over the last 20 years dramatic changes which have extended the city in many directions. Assiut has grown radically surrounding the historical nucleus and linear toward North and south. Therefore new urban environment was established and a lot of development strategies were applied to some districts in the city to solve certain problems related to the traffic, transportation, land use and high density of population.
- **Ability of generalization:** Assiut has a visual image, natural features, climate, a style of building and land uses which can be found in many other big cities in Egypt especially in Upper Egypt. Therefore the selection of Assiut as a case study can achieve the criteria of generalization ability through a certain paradigmatic and critical case study.
- **Experience of the researcher:** The researcher has a wide experience about the study area where she lived more than 20 years. The availability of direct observations, Author's interest, academic background and her previous studies about the over-head images of Egyptian cities and about the city of Assiut specifically justify the selection of this city.

There is some essential information about Assiut City and the image of its centre should be introduced. The following paragraphs defines the urban features of Assiut City based on its historical and recent aerial and over-head images.

## **6.1 Introduction about Assiut City:**

### **6.1.1 Location of Assiut Governorate:**

Assiut lies between latitudes 13, 27 north and longitudes 14, 30 east as shown in Figure 6.1. The city of Assiut is located between two ranges of about 600m-mountains in both western and eastern sides. Assiut interestingly falls in mid Egypt and represents the major governorate in Upper Egypt with a capital of the same name. The governorate covers about 120 km along the western bank of the Nile River. The city of Assiut occupies about 23Km<sup>2</sup>, with such an area, Assiut comes first among Upper Egypt capital cities. The population of Assiut city represents 50% of the total population of urban region. It is predicted that the number of population of Assiut city in 2017 will be 458.000 and the population density will be 264

person/Acre (GOOP, 2000). The density of different districts in Assiut is shown in Figure 6.2.

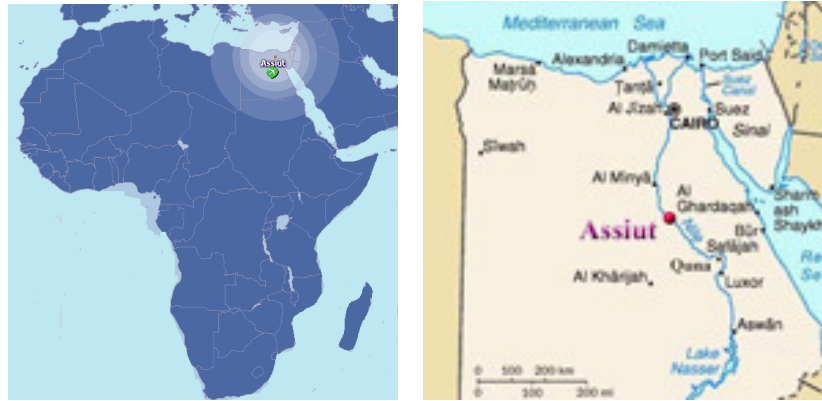


Figure 6.1: Assiut location in Egypt, North Africa.(www.skyscanner.net), (http://www.aun.edu.eg)

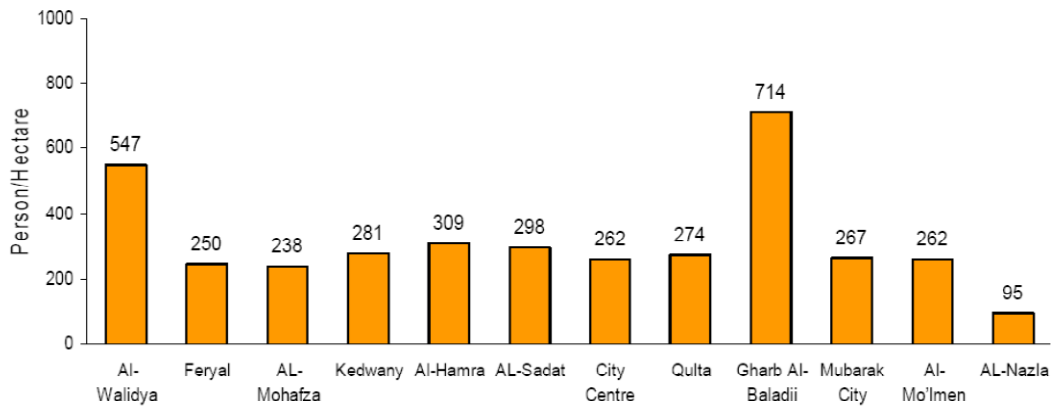


Figure 6.2: The density of different districts in Assiut (GOPP, 2000:p.58)

### 6.1.2 Accessibility and transportation:

Assiut, due to its national importance, is linked with all cities in Egypt through a network of roads, water transportation, and railways. Trains and buses travel from and to Assiut almost every hour for 24 hours. There is also an international airport about 35Km far from Assiut city.

Figure 6.3 shows that Assiut can be accessed by different routes through land, air and Nile River as following (Abdelwahab, 1994):

- Railway lines which connect Assiut with other cities in Egypt.

- Assiut Cairo Road (ACR): It is 389 Km in length and goes parallel to Al-Ibrahimya Canal. It is located 12-15Km west of Cairo Aswan road (CPAS, 2007).
- Assiut Aswan Road (AAR) with 650 Km in length.
- Desert Road from Assiut to Cairo.
- Desert Road from Assiut to New Valley (220 km).
- Nile River and Al-Ibrahimya Canal for water transport.

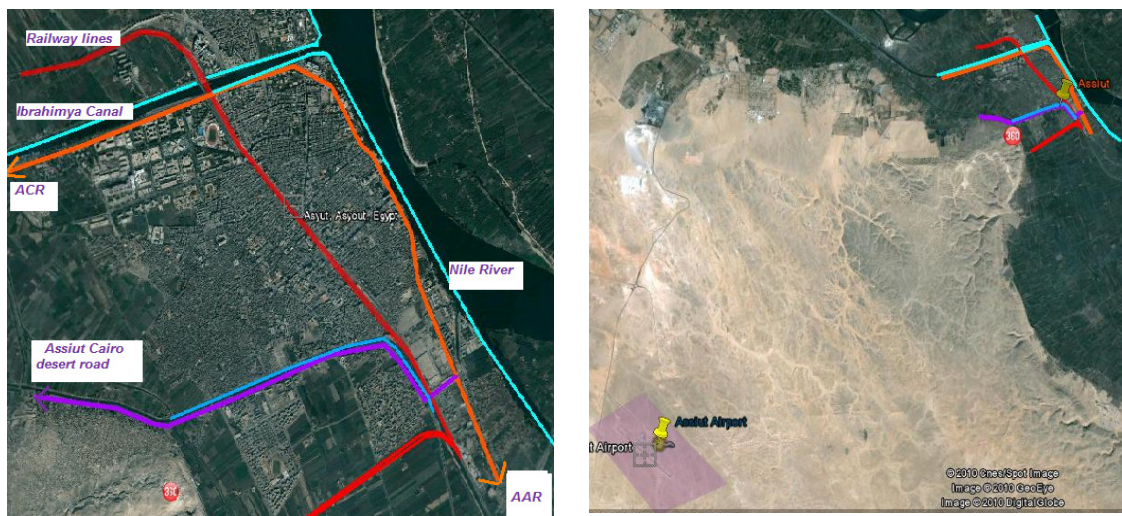


Figure 6.3: The axes of accessibility to Assiut city

### 6.1.3 Districts of Assiut City:

The city of Assiut includes 14 different districts (<http://www.absoluteastronomy.com>). The over-head images of Assiut show the difference between the districts in terms of their characters, visual features and urban properties (See figure 6.4). It is clear that some areas in the districts of Waledya and Gharb Al-Balad have approximately the same image with very high population density and many negative visual features. While the districts of Al-Mohafza and Feryal are rather new districts and have more developed urban and spatial configuration (See figure 6.5). Figure 6.6 shows that the old districts of Assiut City are located in the western part of the city such as Qulta district which goes back to year 1904 and this district occupied 11% of the whole area of Assiut. Qulta district has a unique character of historical buildings which reflect some western styles in their details of facades.

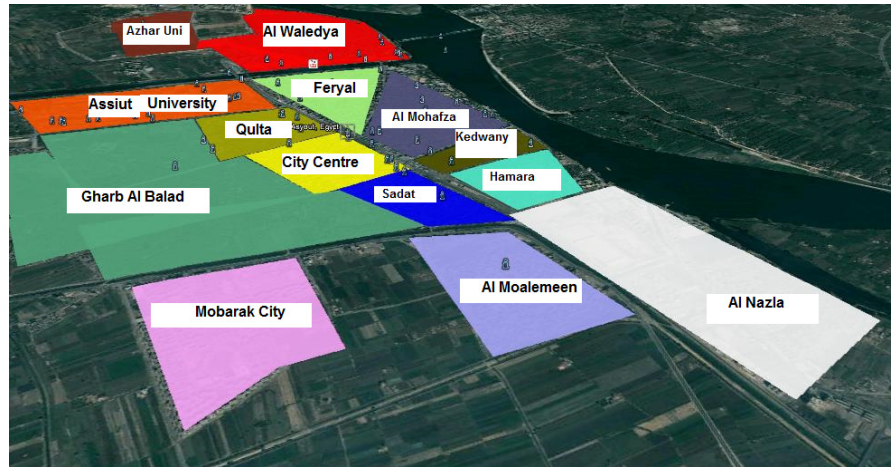


Figure 6.4: The spatial relationships between different districts in Assiut.



Figure 6.5: The difference between the new and old patterns in the city. Left: Over-head view of Feryal district. Right: Over-head image of Gharb Al Balad district.

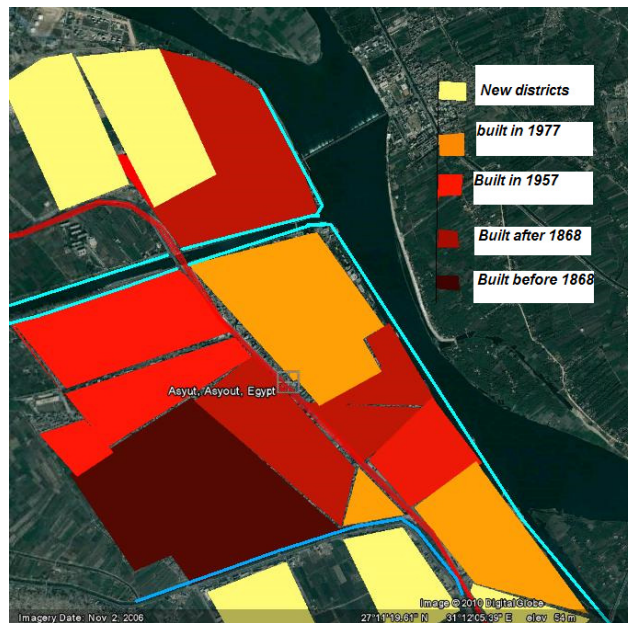


Figure 6.6: The old districts are located in the western part while the new districts concentrate in the eastern part of the city (Abdel-Wahab, 1994)

Figure 6.7 shows that the central core is parallel to the railway and to the Nile River and distinguished by its lengthy streets running from north to south and intersecting approximately at right angles, with short streets extend from east to west. Because of the relative similarity between the city centre and AL-Sadat district, the central core extended to the south to cover a large area of Al-Sadat district (Refaat & Brown, 2009).

It is not important to determine the proportion of the area of the central district to the area of the whole city but the most useful is to compare the quantity and quality of offices, retail and services which are available in the city centre with the other districts because city centre should be the most vibrant and dynamic district. Meanwhile the inner city from the social viewpoint is home to a huge diversity of lifestyles and human activities (Ravetz, 2000). Figure 6.8 illustrates the area of Assiut City Centre in compare to other districts in the city.



Figure 6.7: The adopted boundaries of Assiut City Centre (ACC) as it is determined by the Departments of Planning, Survey of Areas and Housing (Mahrous, 2000 and Refaat, 2009)

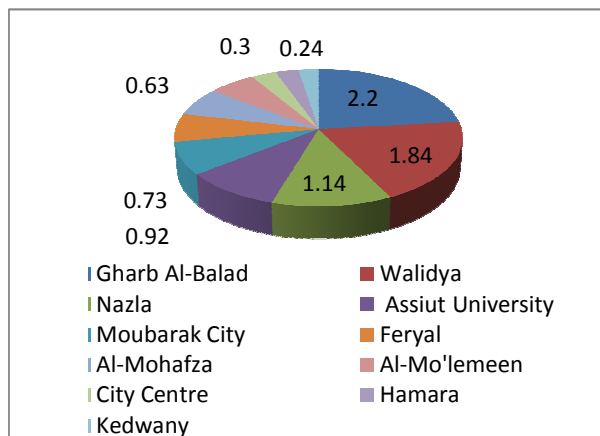


Figure 6.8: A comparison between the current area of Assiut City Centre (ACC) and other districts in Assiut



## **6.2 The proposed boundaries of Assiut City Centre:**

When we look at the Egyptian city, we find that the clear and well-determined centres have been lost in most of big cities which become unable to keep their traditional/initial forms and suffer from the deconstructive planning and uncontrolled urban extension and urban sprawl.

There is a study which has been achieved by the Supreme council for the planning and urban development according to the law Nr. 119 for the year 2008. This study putted some guidelines which can be helpful in identification of city centre's boundaries. The methodology depends mainly on studying Cairo, Alexandria and Al-Mansura city centres as case studies (The Supreme council of planning and urban development, 2010). The study concluded some factors and standards which should be taken in account to determine the central area of the Egyptian cities. These factors can be explained as follows:

- The function of the area
- Land value
- Location and the geographical characteristics
- Land uses
- Volumetric composition
- Importance of streets network

The current area of Assiut City Centre does not include the most valued land in the city. There is no significant historical area within the central area. Assiut City Centre represents a mix of uses and functions especially the commercial and residential uses but lacks the administrative and educational services. The area lacks the sense of stature and contemporaneity and it has a weak connection to the eastern part of the city. It is suggested here to extend the present area towards the east, where there is a variety of services and to the west, where there is the historical centre. It means that the proposed area expands from the present area along the main movement axes which are Al-Gesh, Yousry Ragheb and 26 July Streets. This extension in area allows more functions and activities to take place in this central area as shown in Figure 6.9.

The suggested central area has mainly three important approach axes. The first choice to access this area from outside the city is via the railway. The second available choice is through the Nile River by the boats or river buses.

The south entrance of Yousry Ragheb Street carries traffic movement from the Ring Road directly to the central area as shown in Figure 6.10. Assiut City Centre is linked also with Al-Ibrahimiya Canal and the northern parts of the city through Al-Gomhorya Street and Assiut Bridge. The area of city centre is also linked with the most districts in the city either by direct or indirect links.



Figure 6.9: The justifications for extending the current area of ACC



Figure 6.10: The different choices for accessing the area of ACC.

### 6.3 First stage: Urban analysis of the image of ACC:

#### 6.3.1 Three dimensional analysis of the image of ACC:

To conduct this analysis, the proposed area of ACC is divided into three different areas; the old area, the middle area and the eastern area as shown in Figure 6.11. These areas are analysed by using the over-head and aerial photos as a main tool.



Figure 6.11: Assiut City Centre consists of three area; the old area, the middle area and the eastern area.

##### 6.3.1.1 Analysis of the old area:

This area is distinguished by its random image in most of its parts. Basically, this image consists of high density of old buildings and linear narrow spaces in between.

Most buildings have deteriorated image especially their roofs which are not utilized at all. The area includes a few buildings which exceed six floors in height (5%). Most buildings are three floors in height. Lack of vegetation and landscape is very clear in the image of this area.

The image has lost its historical features in some parts because the heritage buildings and places have been replaced, restored or renovated. The image reflects a competition between the old buildings which maintain their sense of heritage and the new concrete buildings which exist in the same area and sometimes the two different styles exist within the same building. The result is a clear visual chaos. Unfortunately, a lot of interesting visual features which can give this area its uniqueness are hidden behind poor building materials which lack maintenance and hygiene. There is no variety in colours and textures of the built blocks because 57% of buildings are built by bricks and take the yellow and light brown colours except the new buildings. On the other hand, the commercial streets are distinguished by the colourful streetscape because of the way used in displaying goods in the streets.

*The visual properties of of old area can be summerised as following:*

- The existence of streets which are covered by deteriorated eyesore ceilings made of wood or textile.
- The existence of steps in pedestrian paths.
- The existence of the oldest mosques in the city.
- The absence of colours diversity.
- The dominance of human scale in all parts of the image (See Figure 6.12).
- This area reflects severe shortage of visual permeability because of solid facades, covered streets and dead end streets.
- Great vitality and liveability at night.
- The high density of informal commercial activities as shown in Figure 6.14.

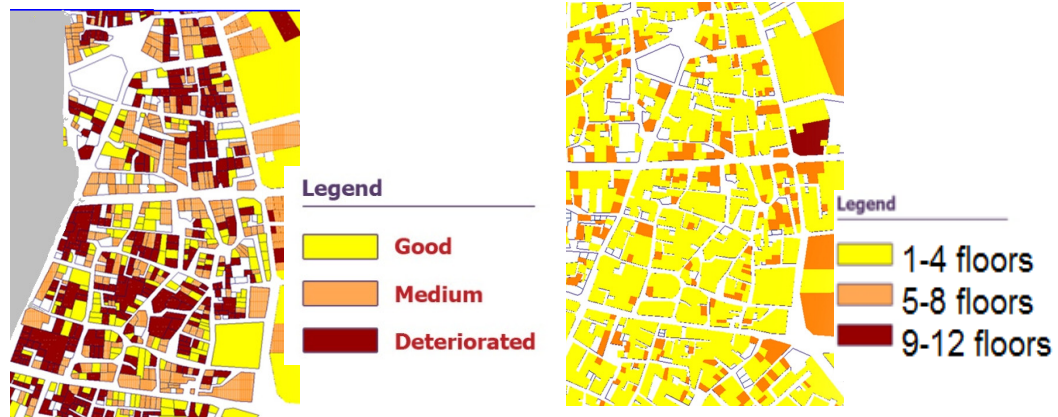


Figure 6.12: Left: The height of buildings in the old area. Right: The conditions of buildings (Mahmoud, 2005)

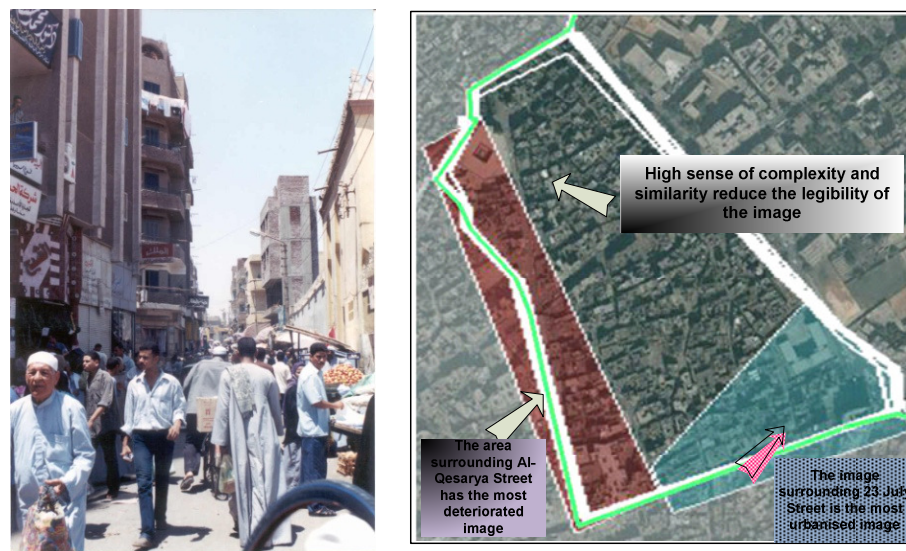


Figure 6.13: The visual features of the old area



Figure 6.14: Religious monuments which have lost their importance due to the accumulation of commercial activities and the shortage of maintenance and cleanness ([www.egyptianheritage.gov.eg](http://www.egyptianheritage.gov.eg))

6.3.1.2 Analysis of the middle area:

The image of the middle area seems more ordered and modern in compare to the old area. The middle area has three different images. The middle sector of this area has the most liveable image. The second image is represented by the northern sector where the mixture between old and modern styles of buildings and spaces (See Figure 6.15). The northern part of this area is distinguished by its orthogonal streets network. The third image is the image of the southern part which has not a certain character or style of buildings. There are no obvious differences between the heights, colours of buildings and shapes of roofs as shown in Figure 6.16.

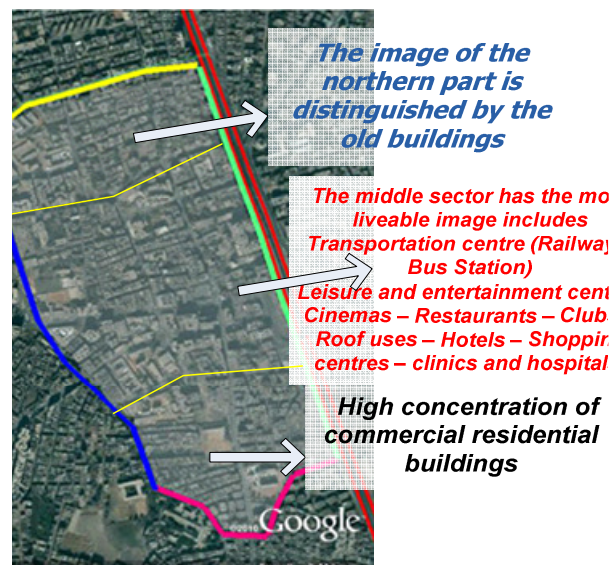


Figure 6.15: The visual features of buildings in the three sectors of the middle area



Figure 6.16: There is a great similarity in the buildings' colours which produces boring streetscapes

6.3.1.3 Analysis of the eastern area:

The sense of modernity and order is the prominent sense of the image of the eastern area. The most perceived components of this image are the tall residential buildings and the multi levels of streets network. The streetscape of the main streets are formed by buildings which have furbished facades. On the other hand, the buildings in the side streets have poor or unfinished facades as shown in Figure 6.17. comparing the middle to the old area, this area has few number of deteriorated buildings or paths (See Figure 6.18). The commercial uses in the eastern area are more ordered and take place in certain places with attractive frontages.

There is a variety of colours and textures which are used in the facades of buildings. Despite of this variety, there are no obvious contradictions or eyesores in the image of streetscape. The image of the streets has been affected by the construction of bridges. At the street level the bridges act as visual constrains which hide parts of the streetscape and at the high levels of vision, the bridges divide the image of the wide streets to narrow lanes and create two levels of movement which penetrate the residential areas and affect their visual privacy and increases the level of noise and pollution. The eastern area has a distinguished skyline which consists of large tall buildings and mixture of mosques' minarets and churches' towers as shown in Figure 6.19.



Figure 6.17: There are great differences between the character of main streets and side streets. Left: Al-Tarbya Wa El-Taaleem Street. Right: Al-Helaly Street.

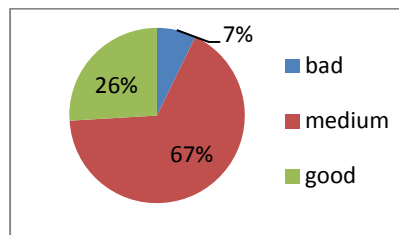


Figure 6.18: The most of buildings in the eastern area are in good situation



Figure 6.19: The skyline of the eastern area consists mainly of high minarets of mosques and tall modern buildings

### 6.3.2 Two dimensional analysis of the image of ACC:

#### 6.3.2.1 Analysis of urban patterns:

The dominant pattern in the old area is the organic meandering pattern, which is distinguished by its narrow alleys and dead-end streets as shown in figure 6.20. This area has a compact urban form with high percentage of deteriorated buildings and the rising commercial uses (Yousef and Mahmoud, 2007)

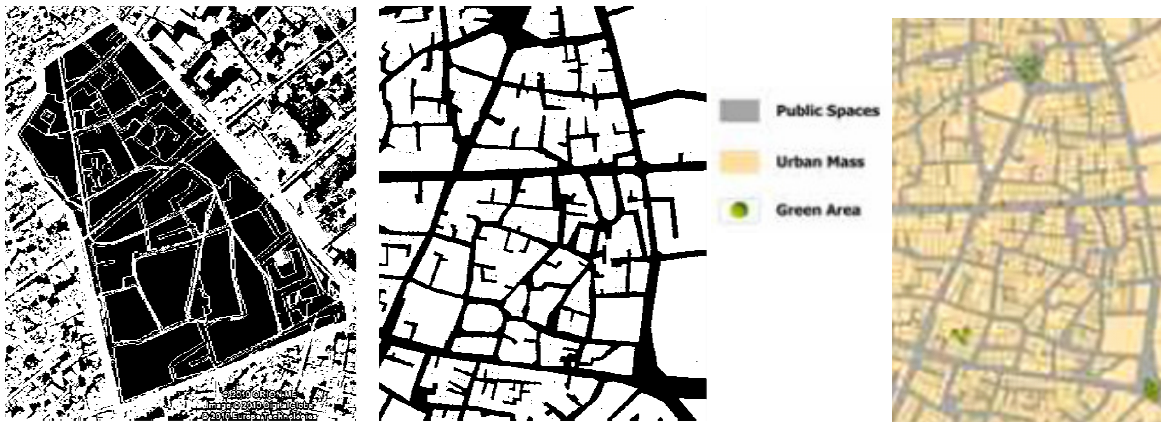
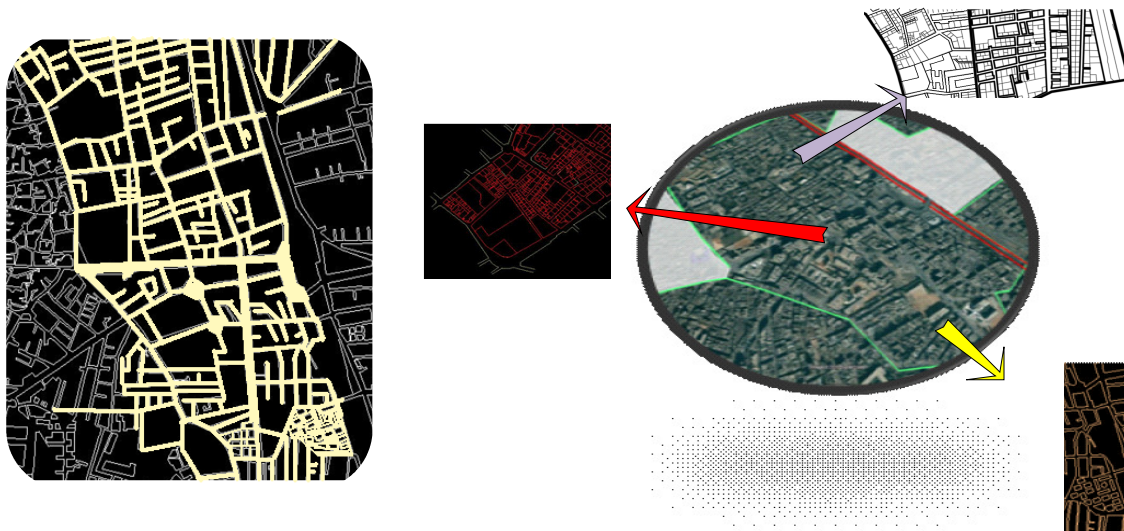


Figure 6.20: Left: The Ground Figure of the old area. Middle and right: The compact profile of the urban pattern shows narrow meandering pattern of spaces and high density of low and old built environment

Regarding the middle area, the majority of the built patterns are somewhat new and in a good situation. But the old urban pattern can be found obviously in the northern part of this area which is distinguished by its orthogonal streets network and old buildings as shown in Figure 6.21. Additionally, the deformed pattern and bullet pattern cover the southern part of this area. These several patterns increase the complexity of the image.





*Figure 6.21: Left: The Figure ground of the middle area shows the high density of built patterns. Right: The different types of urban patterns which cover the central area*

The image of the eastern part seems very ordered and homogeneous with dense patterns of relatively new buildings. The prominent feature is the compatibility of the urban patterns as shown in figure 6.22.



*Figure 6.22: The orthogonal pattern is the dominant pattern in the eastern area.*

**6.3.2.2 Analysis of land uses:**

The dominant land use in this area is the mixed commercial residential uses with percentage of 74% as shown in figure 6.23. There are a few pure residential buildings within this area which includes also heritage, religious and educational land uses. 3.5% of the total area is vacant land. The district is marked by a shortage in services such as the medical and entertainment services and facilities such as public transportation (Yousef and Mahmoud, 2007). The old area is remarkable for its traditional small industries and handicrafts which spread in many areas and streets.

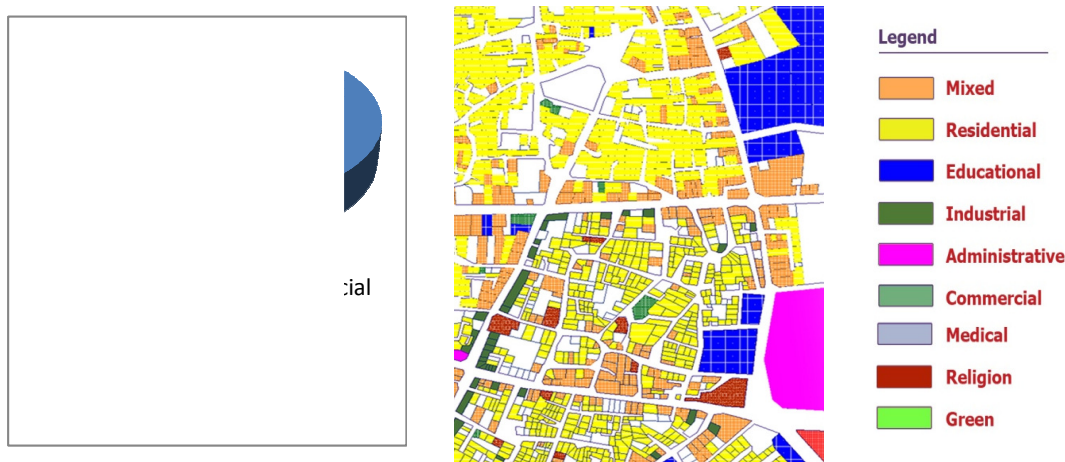


Figure 6.23: The different land uses of the old area, this statistic does not include the non-permanent commercial activities which represent a high percentage of total activities.

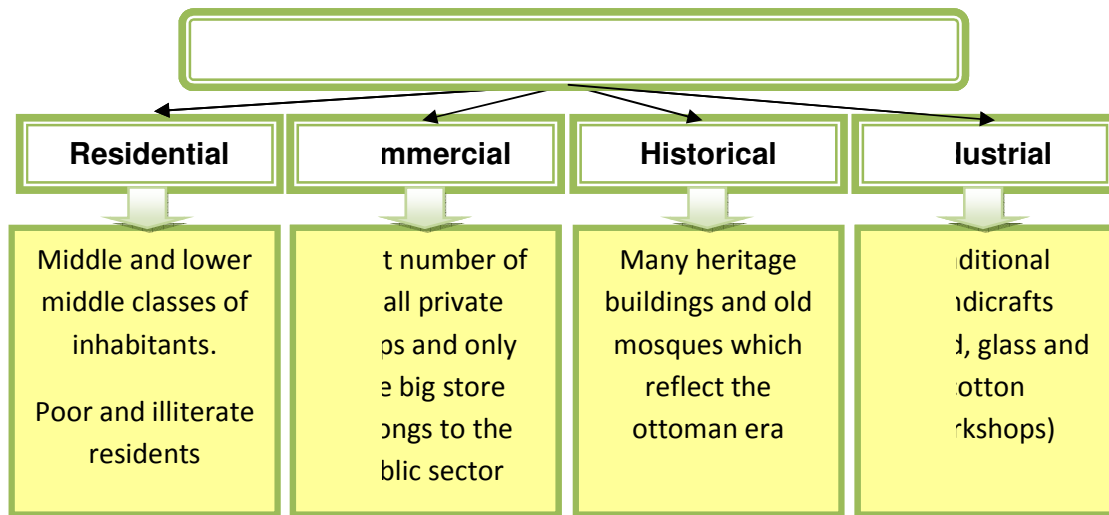


Figure 6.24: The main functions of the old area



Figure 6.25: Examples of commercial, educational and religious buildings which are located in the old area

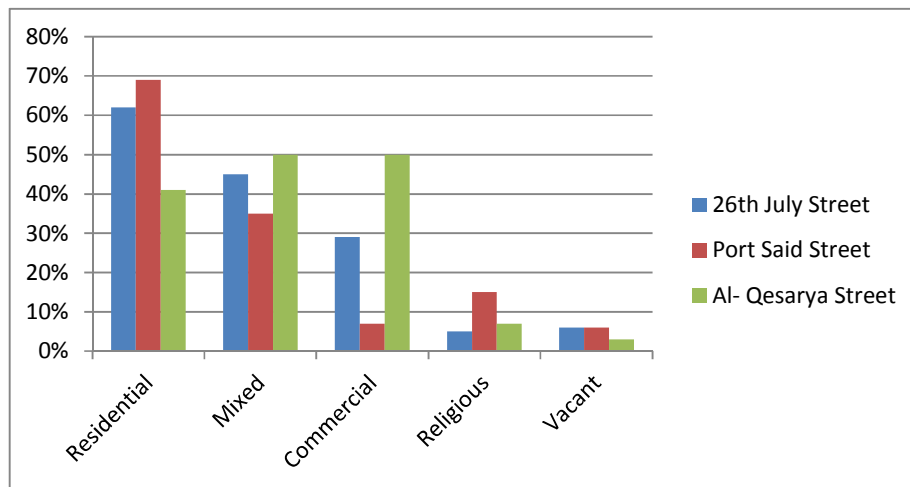


Figure 6.26 : Land uses in the main streets of the old area (Author based on Mahmoud & Youssef, 2007)

To analyse the land uses of the middle area, it has been divided to three different sectors. The first sector is the northern area which adjacent to Qulta district. This

sector is covered by residential and educational uses as shown in Figure 6.27. Figures 6.28 and 6.29 illustrate the land uses in the northern and middle sectors.

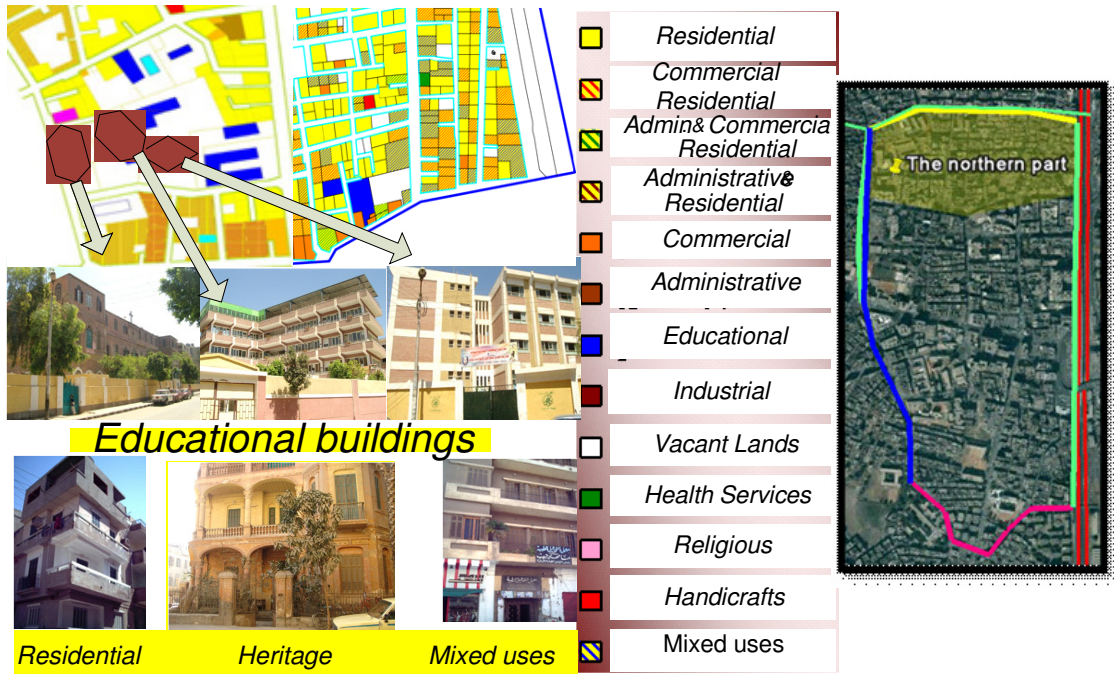


Figure 6.27: Land uses of the northern sector of the middle area are mainly residential and educational



Figure 6.28: Mixed uses buildings (Residential uses occupy the top floors and offices, shops, clinics and business uses occupy the bottom floors) cover the area between Al-Mahata Square and Al-Magthoob Square

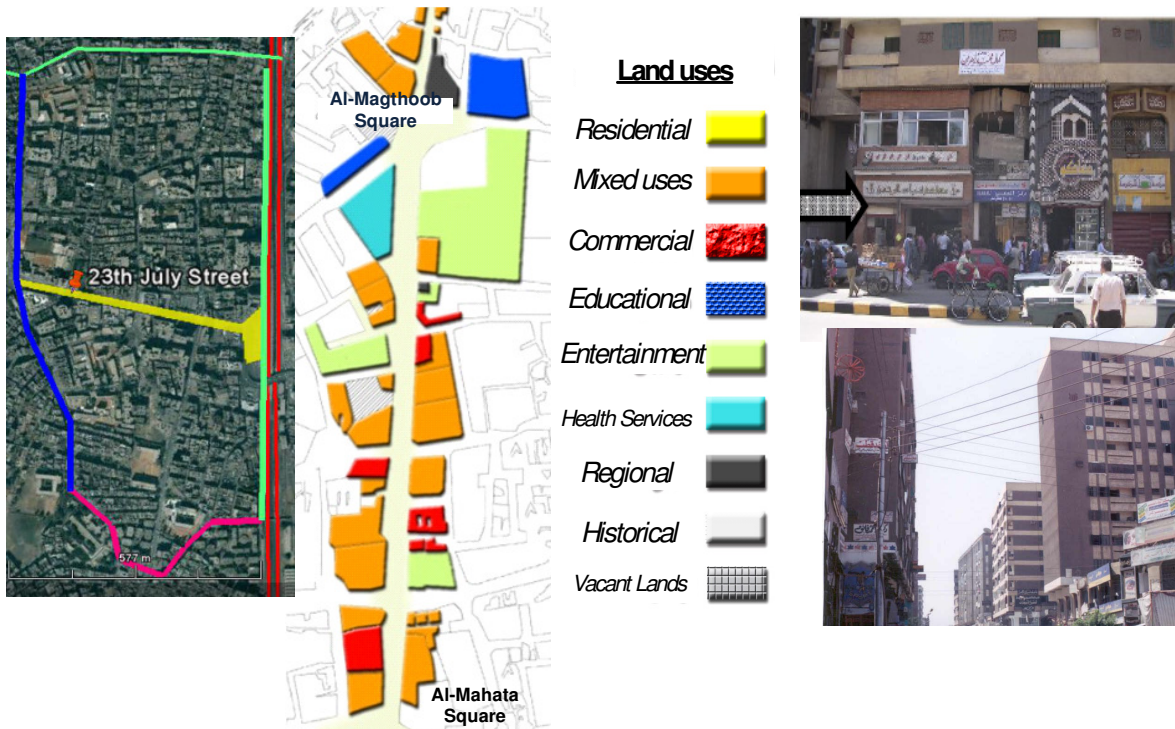


Figure 6.29: The land uses of the middle sector (Ministry of Housing et al, 2010: p.13)

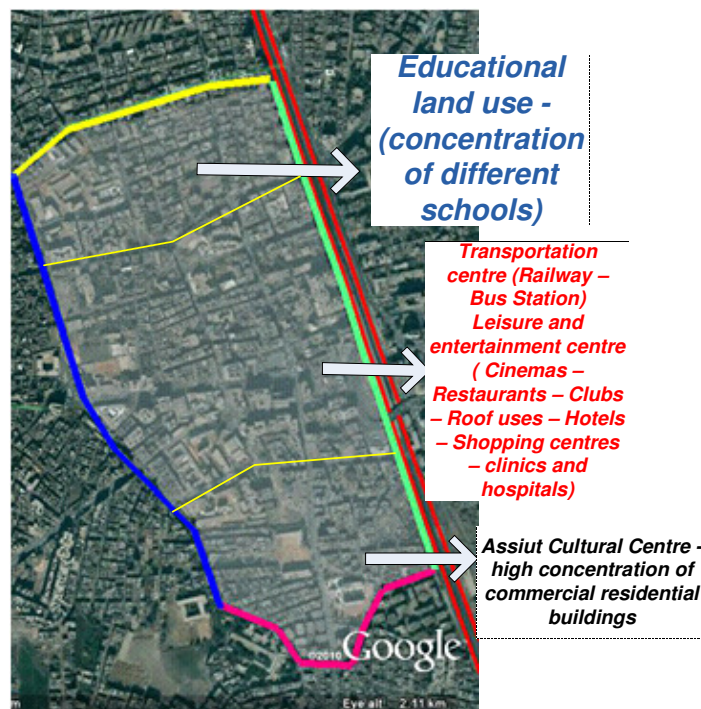


Figure 6.30: The distinguished land uses of each sector in the middle area.

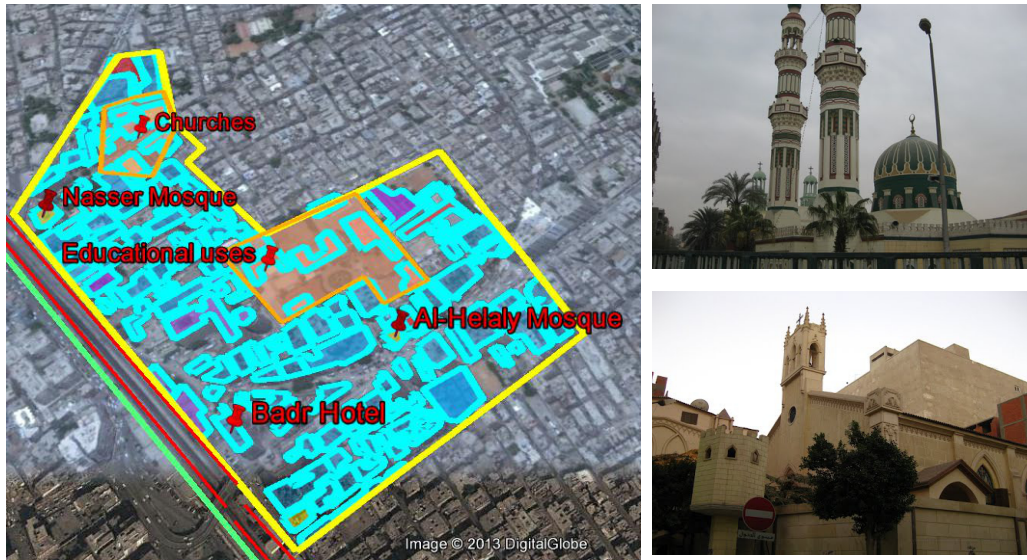


Figure 6.31: The variety of land uses in the eastern part of Assiut City Centre. Right above: Nasser Mosque in the entrance of Al-Nemies Street. Right bottom: Evangelical Church.



Figure 6.32: Above left: The Complex of Governmental Services, right: The commercial and residential uses. Bottom left: Bahethat Al Badia School, right: Khadega Yousef School ([www.panoramio.com](http://www.panoramio.com))

**6.3.2.3 The analysis of the streets network:**

It is very difficult to analyse or describe the streets network in the old area because the network is substantially random and does not belong to any system for streets planning. The main types of streets in the old area are clarified in Figure 6.33. The most dominant types of streets in old area are shown in Figure 6.34. Al-Magthoob Square is the most important focal busy point in the old area as shown in Figure 6.35.

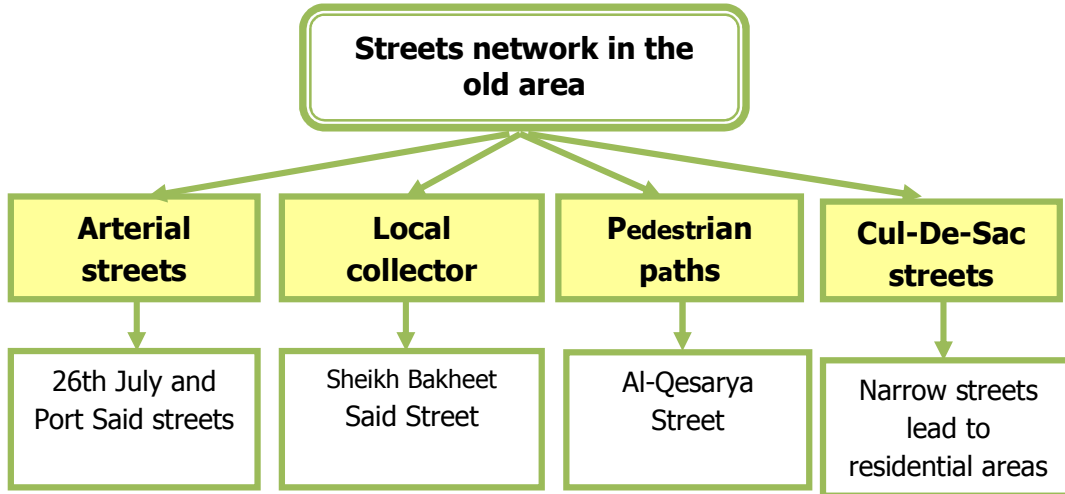


Figure 6.33: The main types of the streets network in the old area

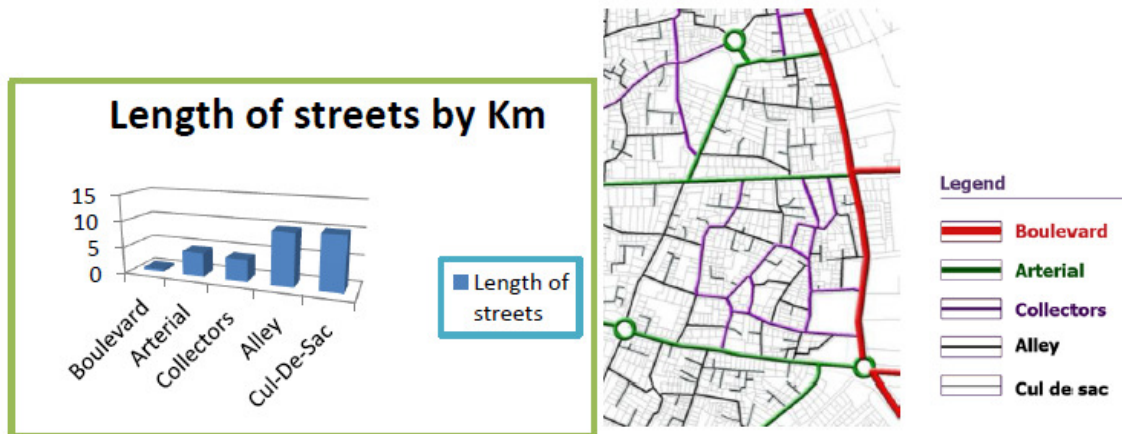


Figure 6.34: Cul-De-Sacs and alleys are the most dominant types of streets in the old area.

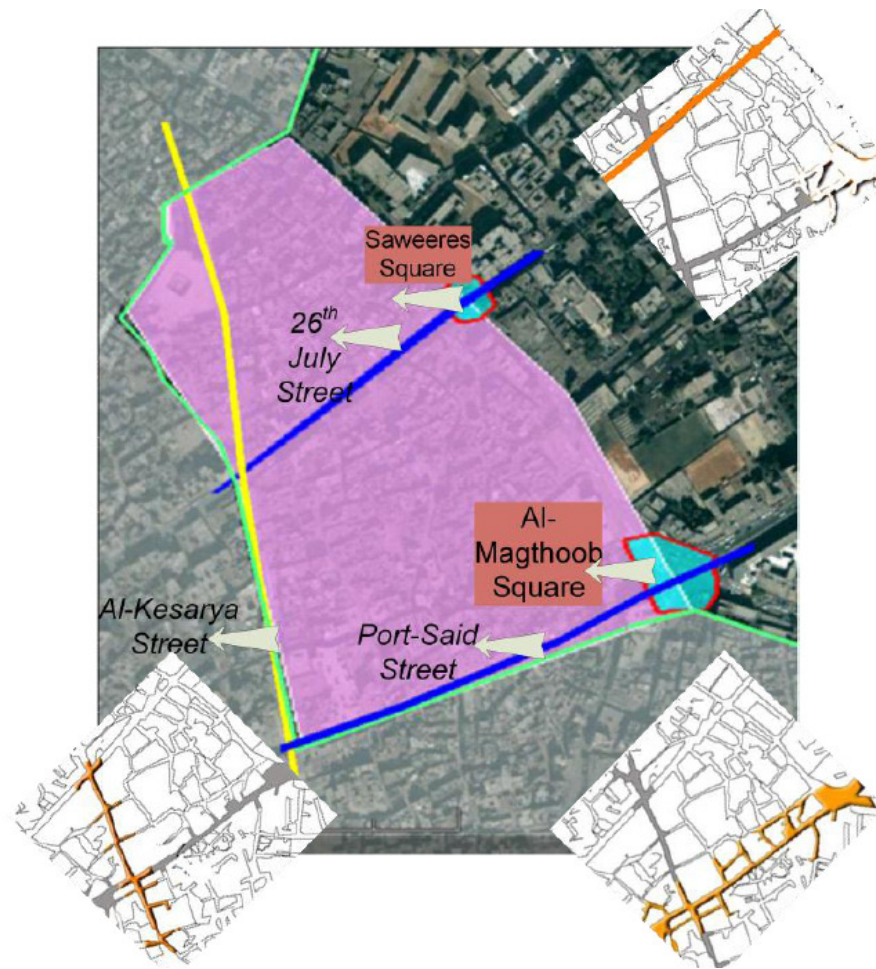


Figure 6.35: The main streets and squares in the old area

Car parking takes place alongside the street and there are no areas designated for car parking in this crowded district. There is no public transportation hub for buses, minibuses or taxis station.

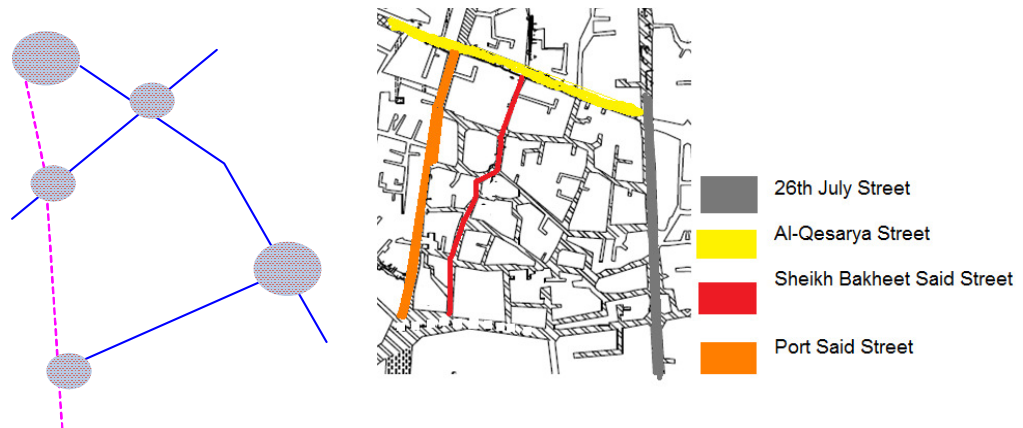


Figure 6.36: The mental image of the streets network in the old area



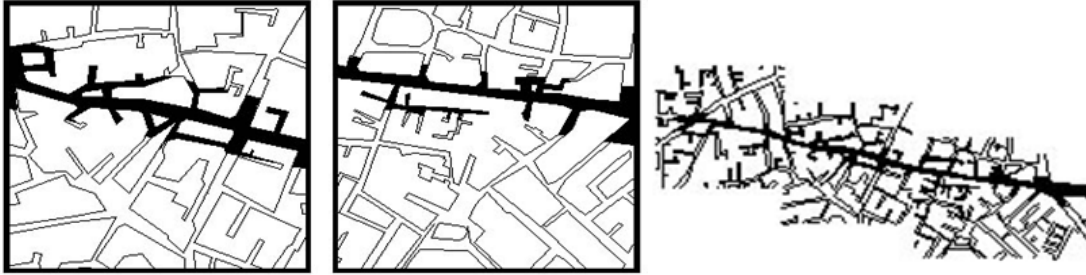


Figure 6.37: The main streets in the old area are distinguished by lot of intersections which reduce the sense of continuity of the paths

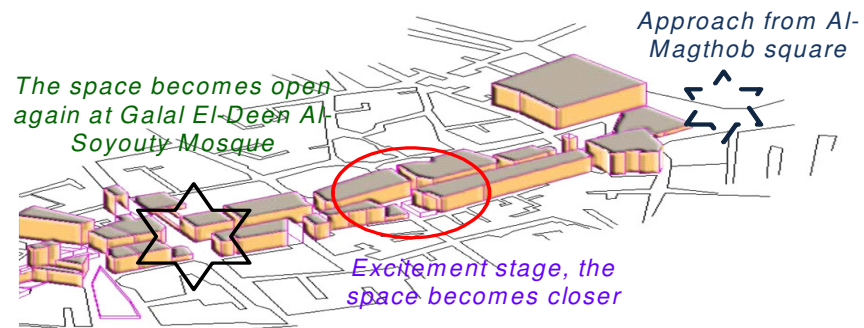


Figure 6.38: The visual sequence of Port-Said Street

- Al-Qesarya Street:

buildings which have been built by the system of bearing walls in addition to some neglected deteriorated heritage buildings which are used as storages or workshops (See Figure 6.39).



*Figure 6.39: The visual features of Al-Qesarya Street*

This area has a liveable image which is very rich in the variety of the activities that take place in its streets. Commercial activities are the dominant activities in the area, but there are also tourism activities. Additionally, there are some important events that occur at specific times of the year such as the celebration of the birth of Gala Al-Deen Al-Syouty as shown in Figure 6.40.



*Figure 6.40: 26th July Street, Al Qesarya and Port-Said Street have the most viable night image where there is many coffees and late night shopping.*

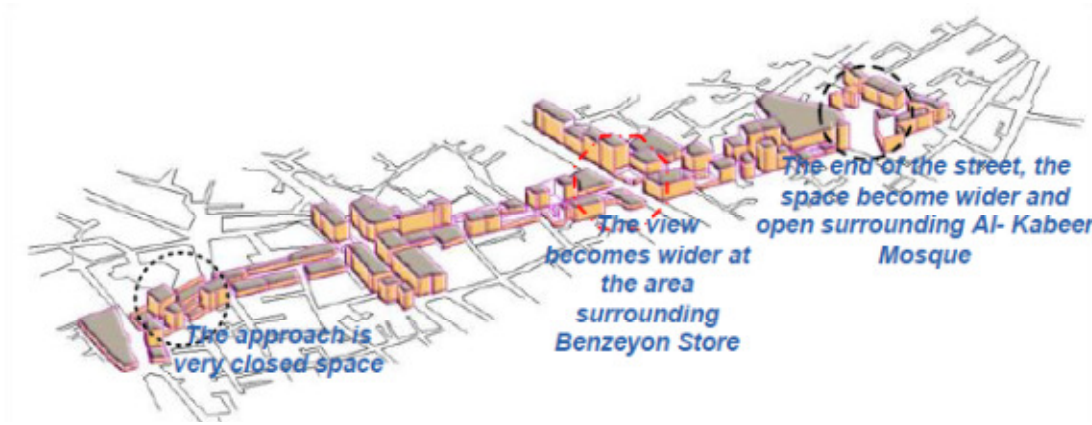


Figure 6.41: The unique visual character of Al-Qesarya Street

Regarding the middle area, it has a distinguished streets network. Its image composed mainly of railway lines, long crowded main streets, traffic congestion in the intersection points, a pedestrian bridge and short paths, three over bridges and a few closed end streets. Generally, the visual appearance of the middle area can be read as a group of long streets intersect in squares or focal points which are hidden from above by the bridges as shown in Figure 6.42.

The railway enters the city from the north and goes across Al-Ibrahimya Canal and then goes through the city between Al-Geesh and Al-Galaa Streets (GOOP, 2000). There are three types of intersections between the streets and railway lines:

- Junctions at the ground level (unsafe).
- Junctions under the ground (tunnels).
- Junction over the ground (bridges).

The streets network is planned by mixing the grid and circular systems with widths range from 5m to 20m. The streets in northern and southern parts of the middle area are not well paved and lightened. On the other hand the middle sector includes the long well paved and lightened streets. The hierarchical approach of streets planning is not applied in this area so the image seems to some extent random.

*There are different types of streets which can be found in the middle area as following:*

- Main streets such as Yousry Ragheb, 23th July Street and Al-Methaq Street.

- Collectors such as Thabet Street.
- Cul-De-Sacs such as some closed ended streets are concentrated in the northern part of the central area due to the oldness of street patterns in this part.
- Pedestrian paths which are concentrated in three commercial areas. They have an eyesore visual image due to the unclean and unsafe floors which have steps in some areas. In addition the walk ways do not include any kind of street furniture or vegetation. The width of these pedestrian ways is ranging between 4.5 to 6m but the paths are occupied by street vendors and unofficial commercial activities. These walk ways have a very viable image during day and night.



*Figure 6.42: The entrance of Al-Helaly Bridge from Al-Mahata Square going to the East*

*The properties which distinguish the streets network in the middle area can be summarised as following:*

- Parking on both sides of the road (on street parking).
- Occupation of the pavements by street vendors.
- No specific ways for bikes.
- Good level of lighting in most streets.
- Spread of telephone cabinets and absence of other kinds of street furniture.
- High density of traffic.

- The most crowded long streets are located in the middle area such as Yousry Raghib Street, 23th July Street, Thabet Street and 26th July Street (See Figure 6.43).
- The wide range of human activities \_ shopping at the first stage\_ improves the liveability of the area during day and night and on the other hand increases the level of noise in the middle area.

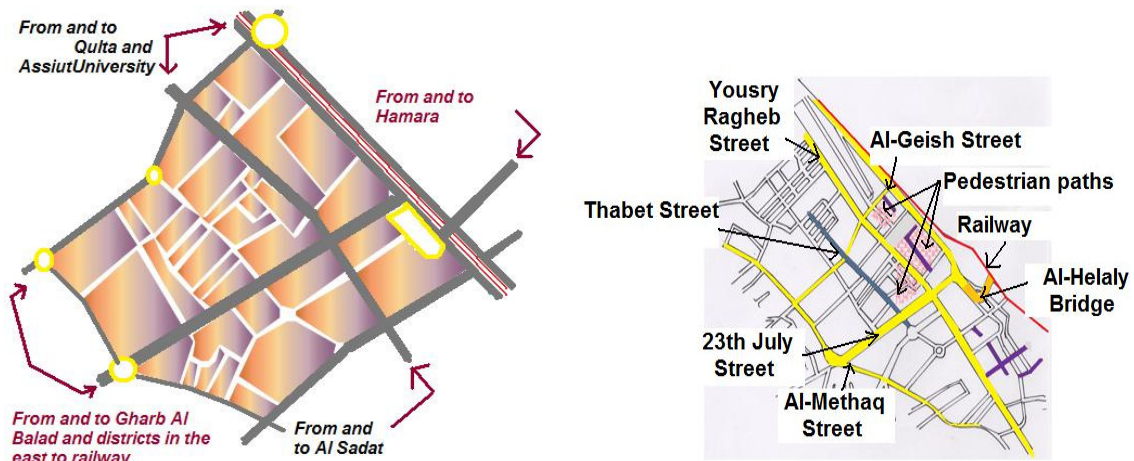


Figure 6.43: Left: The main approach axes to the middle area from Al Sadat, Quita, Al- Hamara and Assiut University. Right: The main streets, bridges and pedestrian paths in the middle area.

The main streets in the middle area are analysed in the following paragraphs:

- *23th July Street:*

This is the main street which links between the most important squares in the city of Assiut; Al-Mahatah and Al-Magthoob squares. In addition, 23th July Street intersects with the banks square as shown in Figures 6.44 and 6.45.



Figure 6.44: Banks, petrol stations and residential towers are the main buildings along 23th July Street



Figure 6.45: 23th July Street connects between Al-Mahatah Square and Al-Magthoob Square and intersects with Thabet Street and Banks Square

- *Yousry Raghieb Street:*

The concentration of commercial uses, the mixture between old and modern styles of facades, the mixture between the Coptic and Islamic landmarks, the irregular width of the street and the absence of street furniture are the main urban attributes of Yousry Raghieb Street (See Figures 6.46 and 6.47).

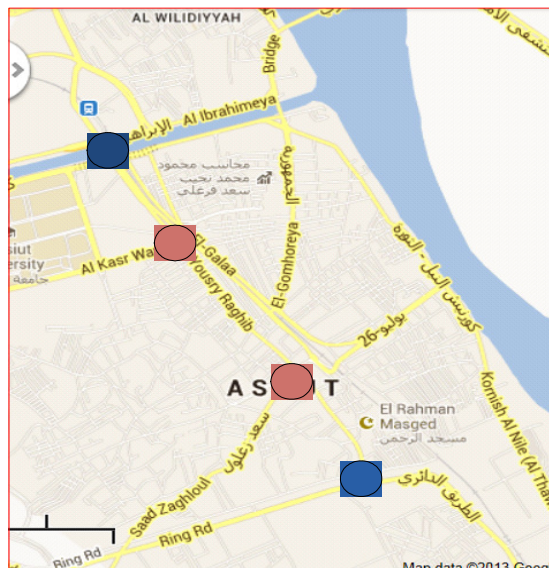


Figure 6.46: Yousry Raghieb Street is a long street which extends from the Ring Road to Korneesh Al-Ibrahimya, Assiut



*Figure 6.47: Left: Yousry Raghieb Street: Entrance from Al Mahata Square. Right: The middle part of the street where the first intersection between Yousry Raghieb and Thabet Streets. Al Togareen Tower is one of the landmarks along this street.*

- *Al-Geish Street:*

It has 18m width for traffic and 3m pavement from each side (studies of Assiut University, 2006). Al-Geish Bridge occupies a part of Al-Geish Street which can be considered as the main approach axe for Assiut University as shown in Figure 6.48.



*Figure 6.48: Left: Modern towers and street furniture are the main features of Al-Geish street (<http://www.panoramio.com>). Right: Al-Geish Bridge occupies Al-Geish Street to reduce the traffic cognition in this street which is one of the approach axes to Assiut University.*

Regarding the eastern area, the tall huge buildings and the existence of bridges increase the sense of narrowness of streets and make them out of human scale (See Figure 6.50). This area has a legible streets network because of applying the hierarchical system which highlights the main streets in addition to the distinguished character of main streets which differs from side streets.

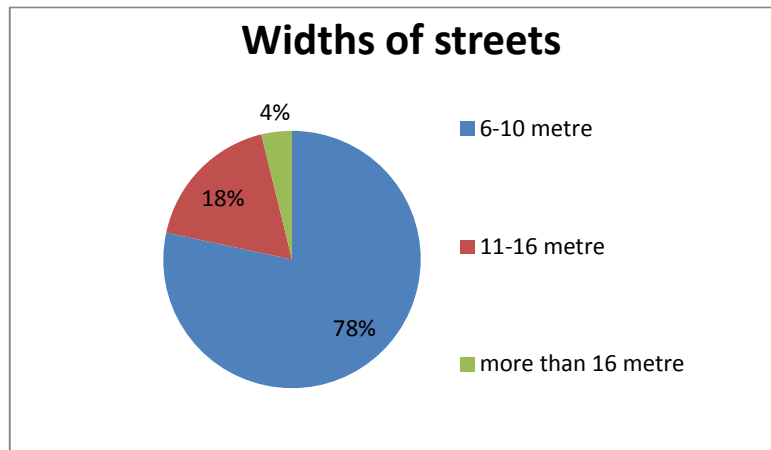


Figure 6.49: The widths of streets in the eastern area range from 6 to 20metre (Ministry of Housing et al.,2010)



Figure 6.50: The effect of adding bridges to wide streets (Al-Helaly, Al-Gomhorya Street) which divides the streets to narrow lanes which are not suitable for the size of pedestrian and traffic movements.



Figure 6.51: The main components of the streets network in the eastern area of ACC.





Figure 6.52: The religious and historical buildings form a part of streetscape



Figure 6.53: Above: The old and unfurnished buildings form the streetscape of the side streets such as Nageeb Al Rehany Street and Al-Tarbeya Wa Al-Taaleem Street. Bottom: The tall and modern buildings form the streetscape of the main streets such as Al-Helaly and Al-Gomhorya Street

#### 6.3.2.4 Analysis of the edges:

The old area is surrounded by Port-Said Street from the south, Al-Qesarya from the west, Al-Methaq Street from the east as shown in Figure 6.54. The old area has not any natural edges



Figure 6.54: The edges of the old area of Assiut city centre

In the middle area, the railway lines act as the most legible edge for the middle area of Assiut City Centre which has no natural edges. Figure 6.55 shows that this area is surrounded by two long edges which are Al-Geish Street and Al-Methaq Street. These edges are perceived with more ease when the area is observed from high observation points.



Figure 6.55: Railway lines, Al-Geish Street and Al Methaq Street are the most legible edges for the middle area of Assiut City Centre

The railway lines are considered as the most perceived edge in the image of the eastern area. This area has not any natural edges but the main streets are the most visible boundaries for this area as shown in Figure 6.56.

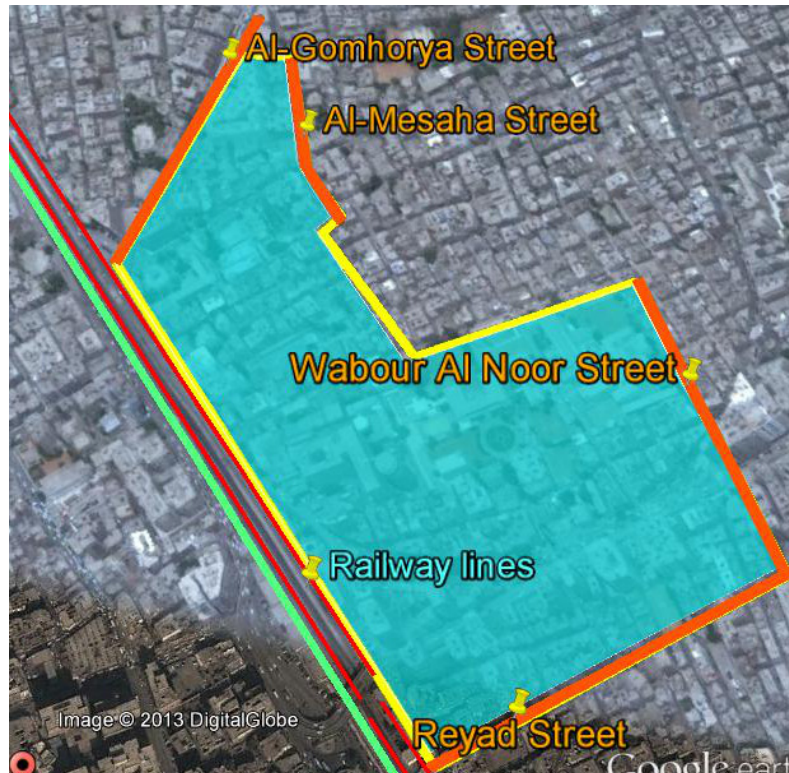


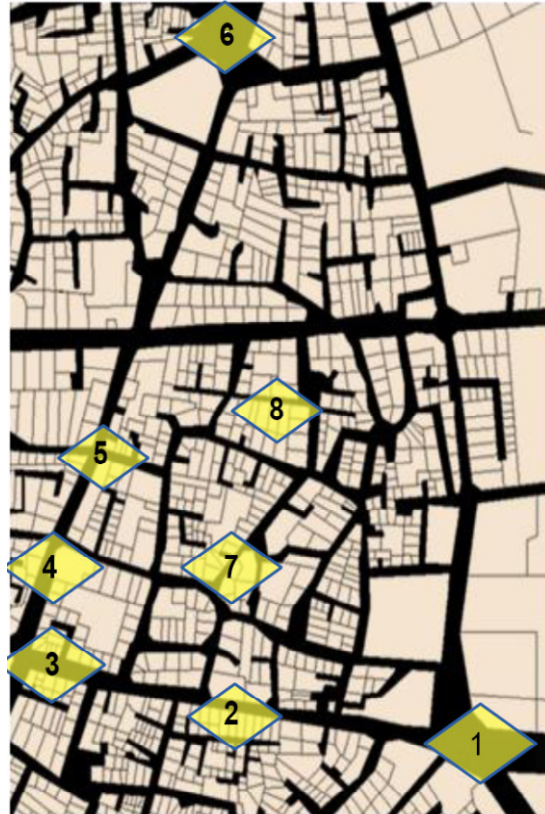
Figure 6.56: Railway lines and main streets are the edges of the eastern area of Assiut City Centre

### 6.3.3 Legibility analysis of ACC:

#### 6.3.3.1 Legibility analysis of the old area:

Analysing the legibility of any area includes the identification of natural landmarks and focal points, views and view corridors, clear and easily navigable routes, gateways to particular areas, edges and buffers and lighting. Legibility of old area is shown in Figure 6.57.

1. Legible approach to the area from Al-Magthob Square. The contrast between the high buildings and Al-Magthob Mosque forms a strong key gate for the area. Al-Magthob square is also a readable node from the top.
2. The irregular width and the large number of intersections reduce the sense of continuity of the most of main streets.
3. Illegible node at the entrance of Al-Qesarya Street from Port Said Street and surrounding Benzeyon Store.
4. High density of human activities during the day and night affects the legibility of the area from the street level.
5. Shaded Streets with deteriorated materials affect the legibility of the area from the top.
6. Legible node at Al-Kabeer Mosque when it is seen from the top but the shortage of landmarks affects the legibility from the street level.
7. Complexity of the urban pattern, similarity in the height and materiality of the buildings reduce the legibility.
8. Legible streets network due to the hierarchical system which highlights the main streets when they are seen from the top.



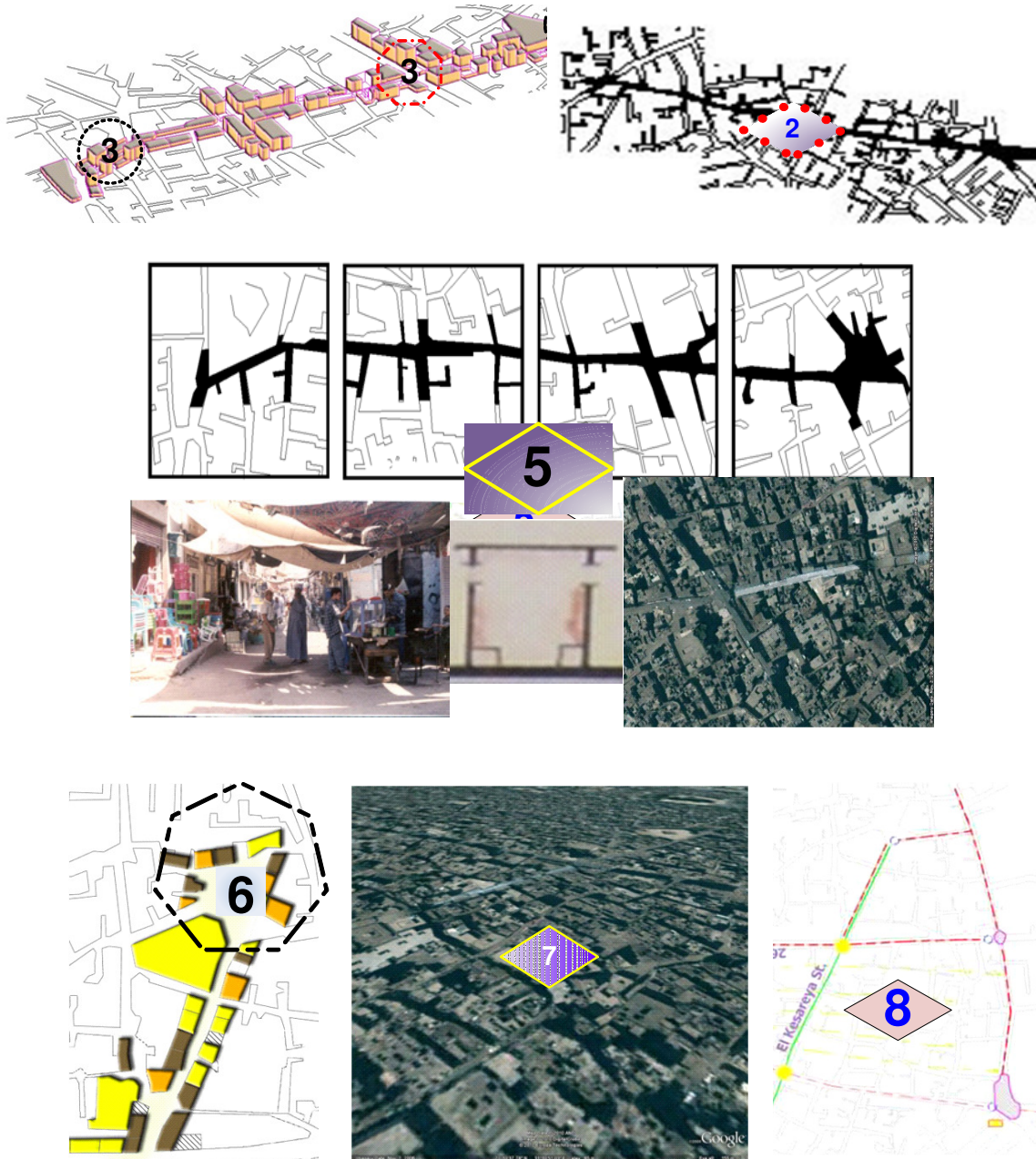


Figure 6.57: Legibility analysis of the old area

6.3.3.2 Legibility analysis of the middle area:

The streets network is the most legible part of the image despite of the absence of guiding signs and street furniture. On the other hand the pedestrian paths are not legible due to the absence of legible visual or physical gates which determine the entrances and exits of the pedestrian areas as shown in Figure 6.59. The use of the same colours of buildings along the streets reduces the legibility and increases the confusion between buildings. The construction of bridges affects the legibility of

streets and squares, interrupts the skyline and hides the focal points and landmarks of the area as shown in Figure 6.60.

Although the middle area includes the most important squares and streets in the city centre, there is no unique character which can distinguish important streets and squares from the other components of the image. The image does not include in most of its parts legible urban details, vistas and landmarks which act as visual stimuli that catch the attention of the observer as shown in Figure 6.58.



*Figure 6.58: Different views of Yousry Raghieb Street demonstrates that there is no unique character along the street due to the absence of legible urban details*



*Figure 6.59: There is no legible entrance for the pedestrian area in terms of visual or physical gates.*



Figure 6.60: The effect of constructing bridges on the legibility of squares. Al Mahatah Square, Assiut City Centre



Figure 6.61: The repetition of the same colours produces boring streetscape and makes it difficult to perceive a distinguished character for each street. Thabet Street and right 26th July Street



Figure 6.62: Left: The fountain is used as a landmark for Al-Manfath Square. Right: Talaat Harb Statue as a landmark for Banks Square



*Figure 6.63: Religious buildings; mosques and churches are considered as landmarks for the middle area of Assiut City Centre*



*Figure 6.64: The use of wall painting in Al-Mahatah Square gives the square a distinctive character.*

### 6.3.3.3 The legibility analysis of the eastern area:

This area has a legible streets network because of applying the hierarchical system in addition to the distinguished character of main streets which differs from side streets.. The existence of bridges affects the legibility of streets. The existence of large number of tall buildings affects the legibility of the historical buildings in the eastern area and closes the views from the street level (See Figure 6.65).





*Figure 6.65: The visual effect of tall buildings in closing the view from the street and reducing the legibility of the surrounding historical buildings.*

The over-head image highlights the area of schools around Kedwany and Al-Tarbya Wa Al-Taaleem Streets because this area has a distinguish character with the existence of low buildings and open spaces which cannot be found in other parts of the image as shown in Figure 6.66. The railway lines are the most legible edge for the eastern area.



*Figure 6.66: Aerial images of schools area which is recognised to be different from surrounding areas.*

The architectural objects such as fountains and statues have not a significant role as landmarks for squares in this area. On the other hand, some important buildings act as more legible landmarks for streets and squares as shown in Figure 6.67.



Figure 6.67: Above: The Cathedral of the Archangel-Michael and Nasser Mosque as landmarks of Al-Nemies Street. Bottom: The Bird Statue as a landmark of Abu Al-Fotouh Square, The fountain of Al-Manfath square which is affected by the construction of bridges

### 6.3.4 Permeability analysis of ACC:

#### 6.3.4.1 Permeability analysis of the old area:

Permeability stands actually between accessibility and visibility therefore it could be analysed physically and visually. As it was mentioned before in this chapter that the old area has a permeable streets network with a large number of intersections and alternative offers for movement even though the existence of many closed end streets (See Figure 6.68).

This analysis focuses on the visual permeability. Analysing permeability includes analysing feasibility, variety of heights, roof lines, activeness of frontages, feeling of enclosure or openness of different spaces and the level of lighting (natural and artificial). The existence of internal open courts in most buildings is a unique feature which supports the visual permeability from over head.



*Figure 6.68: Left: The continuity and gaps of roof lines at different sections in Port Said Street, 26th July Street and Al-Qesarya Street (Mahmoud, 2005). Right: Shaded streets, Cul-De-Sacs and the strong sense of enclosure affect the visual permeability.*

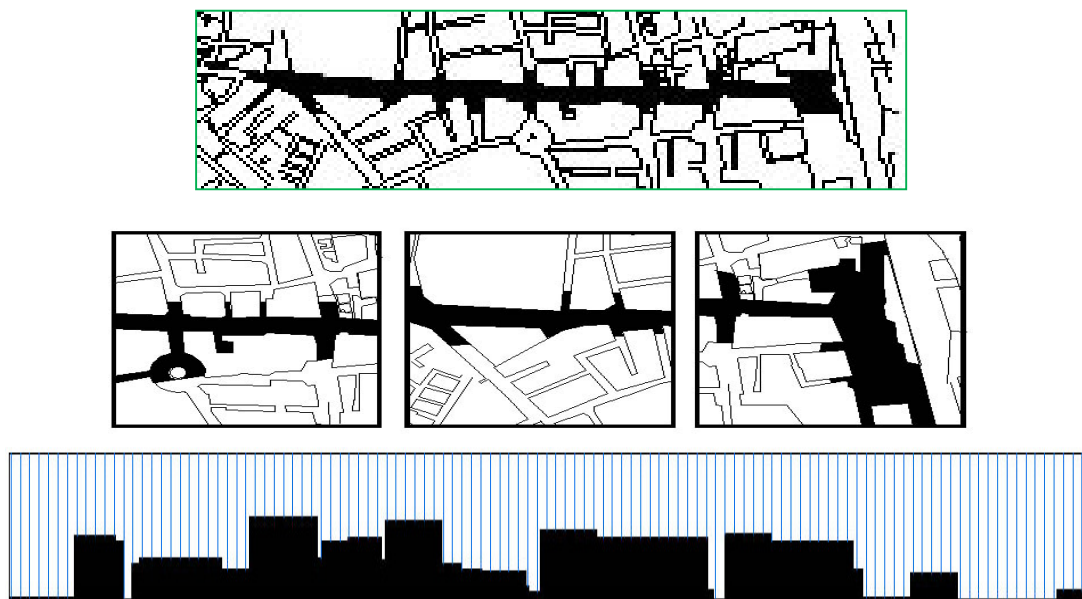
#### 6.3.4.2 Permeability analysis of the middle area:

It is difficult to decide to what extent the middle area is permeable because there are different patterns which cover this area. The over-head images of the middle area demonstrate that the grid and circular system of streets planning dominate the middle area (See Figure 6.69).

Furthermore, the hierarchy system of planning streets has not been applied in the middle area. Therefore the area seems physically permeable. But in terms of visual permeability, there is a general observation that most buildings which exist in this area are large blocks which have no view corridors in their facades and no obvious differences in the heights of buildings as shown in Figure 6.70. The image of the middle area reveals a concentration of bridges in order to connect the different streets to the railway and to solve the traffic problems. These bridges play an important role in opening the view angle and support the visual permeability.



*Figure 6.69: Applying the grid and circular system of planning streets and the absence of hierarchical planning system in the middle area support the visual and physical permeability*



*Figure 6.70: 23th July Street represents a high level of physical permeability through the various intersections along the street. The variety of buildings heights which is perceived along 23th July Street increases the visual permeability*

#### 6.3.4.3 Permeability analysis of the eastern area:

Although the grid and circular system of streets which is applied in the eastern area is permeable and the existence of bridges opens the views and improves the visual permeability, there are some reasons which reduce the permeability of this area:

- The streets network includes Cul-De-Sacs and narrow lanes.

- The image of the built objects shows that the large high blocks are the prominent form of buildings in the eastern area. Therefore, there are limited choices or links between the streets. Furthermore, there are no visual corridors through the ground floors as shown in Figure 6.71.
- There are no great differences between the heights of buildings which reduce the visual permeability and close the views from the streets and from higher levels of vision.
- There are only two choices for connecting the eastern area to the middle area as shown in Figure 6.72.



Figure 6.71: The large high buildings in Al-Helaly Street without visual corridors or links through the ground floors reduce the physical and visual permeability.



Figure 6.72: The limited links between the middle area and the eastern area. The two areas are linked by Al-Helaly Bridge and Al Manfath Square. Above: Right: Al Manfath Square, Assiut City Centre. Bottom: Al-Helaly Bridge and its stairs.

### 6.3.5 Visual analysis of the high observation points in ACC:

#### 6.3.5.1 Analysis of high observation points in the old area:

The compact pattern with narrow streets and the use of load bearing walls in constructing most of the old buildings have a fundamental effect on the limitation of height of buildings in the old area. 26<sup>th</sup> July Street includes most of the high buildings in the area while Port Said Street stands as the second as shown in Figure 6.73. On the other hand, Al-Qesarya Street does not include any buildings that exceed 4 floors in height. This analysis considers that high buildings are those buildings which exceed 6 floors.

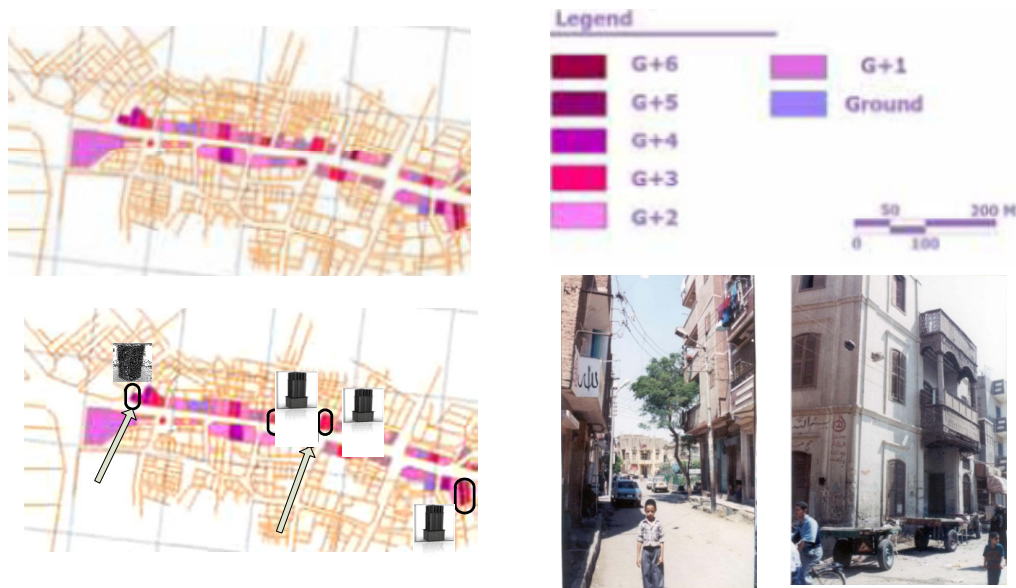


Figure 6.73: Port Said Street includes a few high buildings which are located mostly on corners and over look the surrounding small nodes and the adjacent low buildings



Figure 6.74: 26th July Street includes the most of high buildings in the area which are concentrated in its redeveloped northern side

Three focal points have been analysed in terms of the views from and of these nodes from high observation locations.

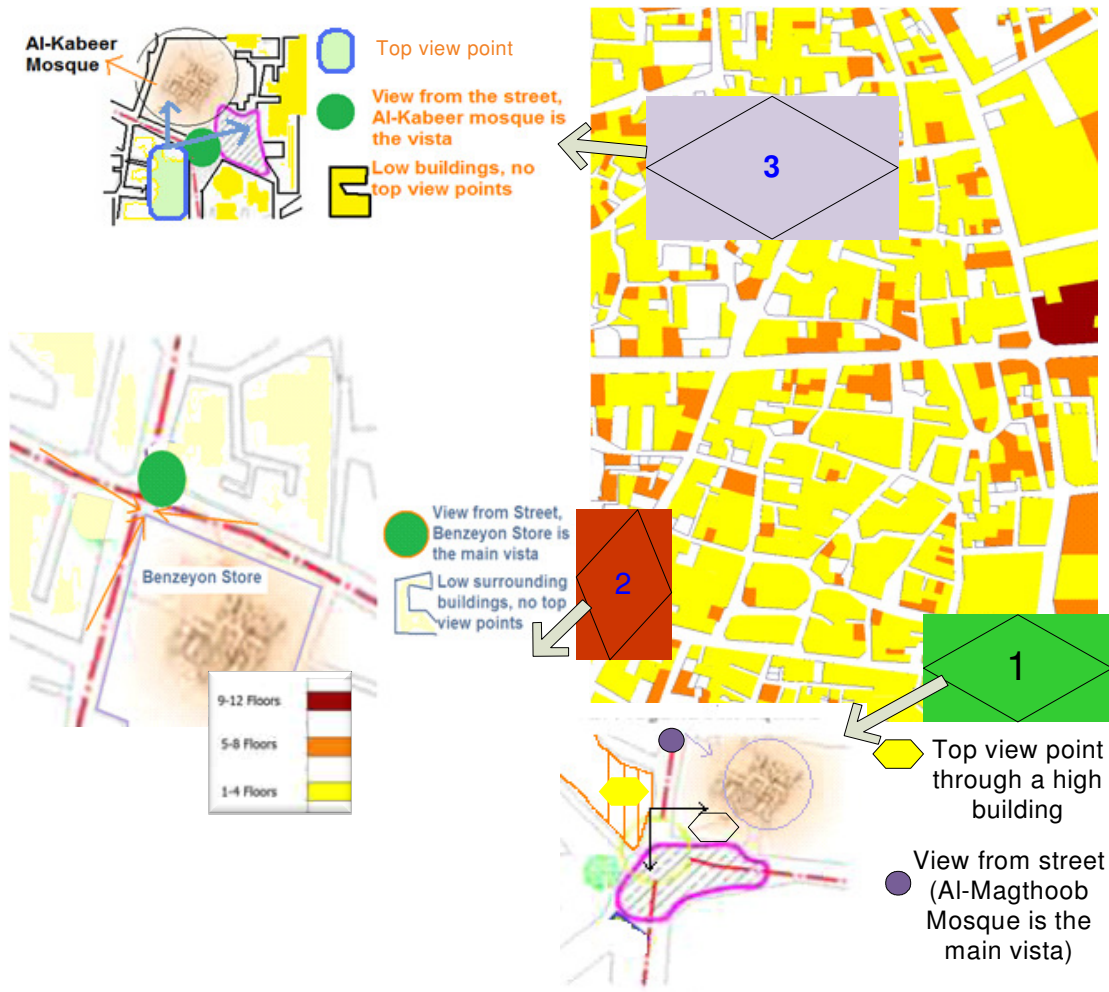


Figure 6.75: Analysis of observation points from street level and from higher levels of vision (Mahmoud and Youssef, 2007)

6.3.5.2 Analysis of high observation points in the middle area:

The middle area of ACC includes the greatest number of high observation points in comparing to the old and eastern areas. The existence of a great number of high buildings provides the users of the city centre with the chance to observe the area from over-head. Figure 6.76 shows that, most buildings in 23th July Street are constructed by the structural system which allows increasing the height of buildings as shown in Figure 6.77. The middle area is distinguished by the existence of long bridges which helps in observing the area through panoramic view angles as shown in Figure 6.78.

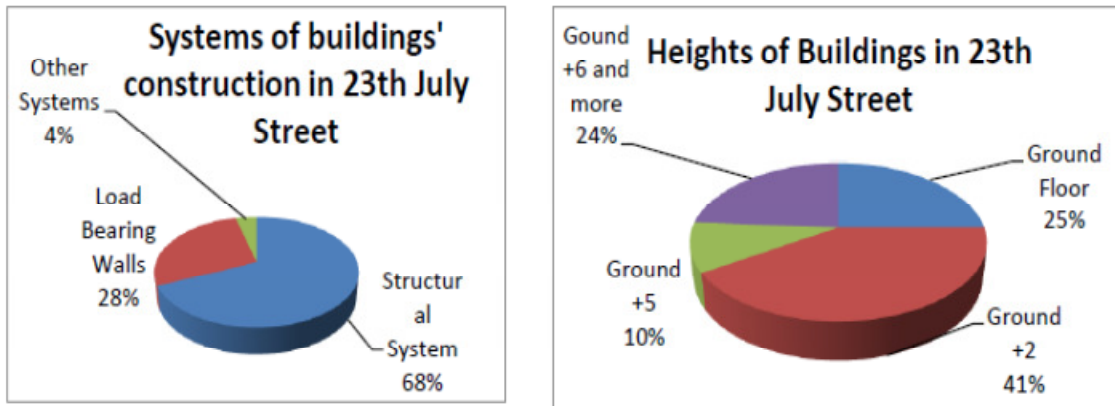


Figure 6.76: The impact of using structural system on the heights of buildings in the middle area

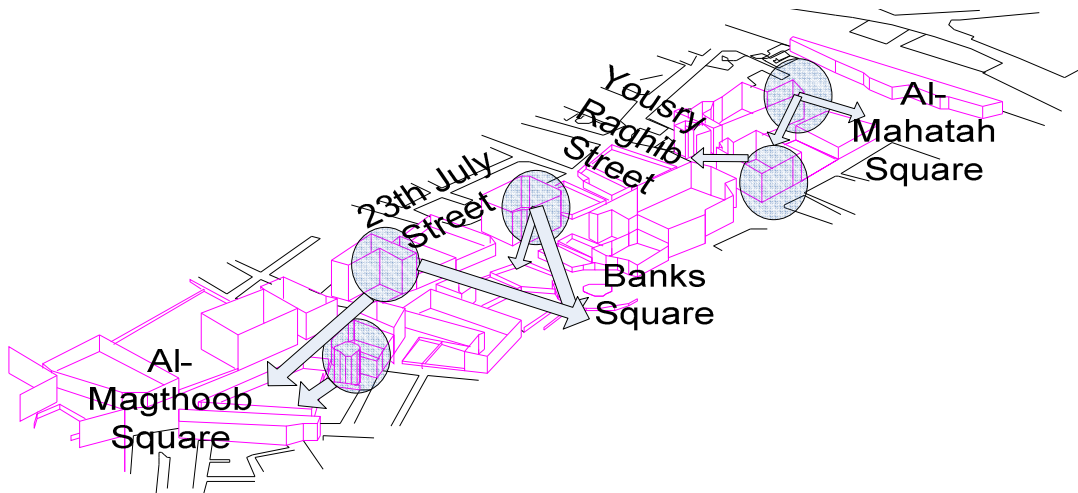


Figure 6.77: The locations of high observation points along 23th July Street which are represented by commercial residential towers (Al-Safa and Al-Awkaf Towers) that have over-head views for the surrounding squares and low buildings.



Figure 6.78: The over-head images of Al-Mahatah Square from Al-Mahatah Bridge and from the stairs of the bridge





Figure 6.79: Most tall buildings in the middle area of ACC have over-head views of the surrounding old low buildings

6.3.5.3 The analysis of high observation points in the eastern area:

As it is argued in Lynch analysis of this area, the high buildings are the prominent form of buildings in the eastern area (See Figure 6.80). Therefore, the availability of observing the area from high levels of vision is very wide. The tall residential towers provide their users with the chance to observe the surrounding streets and adjacent low buildings. While the bridges open the view angle and enable the users to observe changeable images during movement as shown in Figure 6.81.

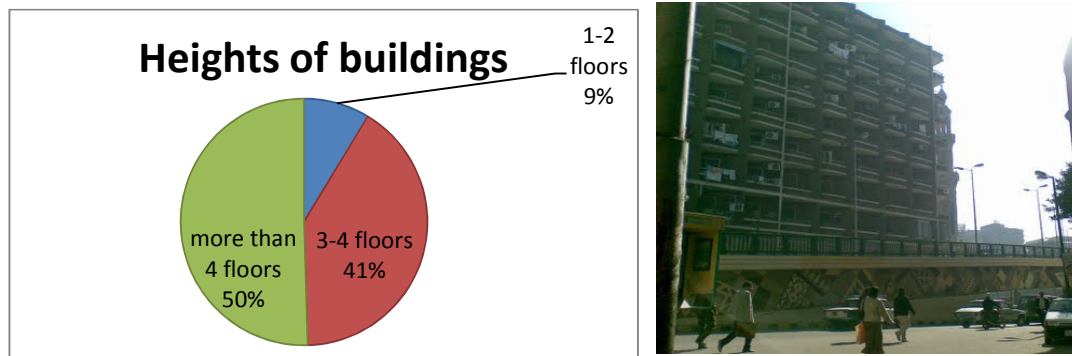


Figure 6.80: 50% of buildings in the eastern area are more than four floors which means that the eastern area includes the greatest number of high observation points



Figure 6.81: Over-head views of Abu-Al-Fotouh Square from high buildings in Al-Helaly Street (1). Over-head views of Al-Manfath Square from high buildings in Al-Gomhorya Street (2). Over-head views of Al-Mahatah Square and Railway Station from high buildings in Al-Galaa Street such as Badr Hotel and the Complex of Governmental Services (3).

#### 6.4 Second stage: Assessment of the image of ACC:

The image of ACC is assessed here by applying the proposed approach of image assessment which has been clarified in the previous chapter. To what extent the image of ACC responds to the criteria of legibility, amenity, variety of uses and diversity of views and observations points is determined based on the visual indicators of the area. Identification of the problems and the shortage of certain qualities is an initial step for making decisions about improving the image of Assiut City Centre.

Table 6.1: Identification of the problems of the old area of ACC image in terms of the indicators of the visual image components and the related shortage of criteria

The components of the old area's image	The negative indicators	The shortage of criteria
<b>Streets network</b>	<p>The existence of Cul-De-Sacs reduces the visual permeability.</p> <p>The irregular width of streets, a lot of intersections and the small width of pavement constrain the ease of movement for pedestrian and affect the sense of path continuity.</p> <p>The poor floors of collectors and alleys compose unpleasant image.</p> <p>There is no clear entrance of Al-Qesarya Street.</p> <p>There is no obvious well-designed street furniture.</p> <p>Most streets are not lightened well which reduce the safety and legibility at night.</p>	<p><b>Permeability</b></p> <p><b>Walkability</b></p> <p><b>Attractiveness</b></p> <p><b>Legibility</b></p>

	<p>The absences of visual sequence, landmarks, clear in and exit points and guidance signs.</p>	
<p><b>Public spaces</b></p>	<p>The existence of unused spaces and vacant lands or buildings which are fully or partly derelict. These vacant sites become a depository for litter of various kinds and quantities.</p> <p>The absence of open spaces, water elements and attractive robust planting affects the quality of the environment negatively. The nonappearance of the green colour in the image</p> <p>Social places or centres, entertainment facilities and health centres cannot be found in this area because the high concentrations of commercial activities which affect the variety of the old centre.</p> <p>Poor facilities for children and teenagers.</p> <p>Poor standards of cleanliness and lack of proper maintenance increase the visual problem.</p> <p>This area lacks the public services and the basic requirements for public</p>	<p><b>Attractiveness</b></p> <p><b>Amenity</b></p> <p><b>Variety</b></p> <p><b>Safety</b></p>

	<p>amenity and safety such as public toilets and police stations.</p>	
<p><b>Built objects</b></p>	<p>The poor use of the top roofs and internal courts which are observed clearly from the surrounding high buildings.</p> <p>The random visual profile of the frontages of buildings</p> <p>Visual contradictions between old and new buildings which affect the identity of the area</p> <p>The valuable buildings in terms of historic or architectural aspects have been lost. For example, the closed unused Hammams which sometimes are used for animals' husbandry.</p> <p>The existence of high buildings in a pattern of narrow streets reduce the concept of privacy especially for low buildings with internal courts.</p> <p>The use of non-appropriate materials in restoration works for old buildings. For example, the use of concrete columns in restoring Wekalat Thabet</p>	<p><b>Visual permeability</b></p> <p><b>Attractiveness</b></p> <p><b>Visual order</b></p>

	<p>which has been built by stones carrying walls and some wooden structures.</p> <p>The lack to any rules which can control the addition of new floors and uses especially for the old buildings. Furthermore, there is no control on the industrial uses which sometimes occupy the pavements or parts of old buildings.</p> <p>However the old area has attractions for tourism, it does not include any hotels or information centres or guidance signs.</p>	
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Table 6.2: Identification of the problems of the middle area of ACC image in terms of the indicators of the visual image components and the related shortage of criteria

The components of the middle area's image	The negative indicators	The shortage of criteria
<b>Streets network</b>	<p>Shortage of parking areas and the problem of through movement.</p> <p>Illegal commercial activities and on-street trades.</p> <p>The width of some streets such as Thabet Street is not enough for the traffic size and high density of human activities</p> <p>Collector streets and alleys</p>	<p><b>Permeability</b></p> <p><b>Legibility</b></p>

	<p>are not safe for movement and lack the lighting and hygiene.</p> <p>Pavements could not be used properly by the pedestrian because of the great number of commercial activities and street vendors</p> <p>On-street parking, congestion and mix of pedestrian and vehicular movement.</p> <p>The entrances and exit points of streets and pedestrian area are not clear.</p> <p>There is no certain character for squares and main streets in the area.</p>	
<p><b>Public spaces</b></p>	<p>Absence of basic public amenity and services.</p> <p>Unused areas under the bridges.</p> <p>Illegible nodes and focal points which lack the variety of street furniture and amenity requirements.</p>	<p><b>Amenity</b></p> <p><b>Legibility</b></p>
<p><b>Built objects</b></p>	<p>The functional and visual situation of most heritage buildings in the area.</p> <p>The deteriorated roofs of low buildings.</p> <p>The repetition of using the same colours for most buildings which produces boring streetscape.</p>	<p><b>Visual permeability</b></p> <p><b>Attraction</b></p> <p><b>order</b></p>

Table 6.3: Identification of the problems of the eastern area of ACC image in terms of the indicators of the visual image components and the related shortage of criteria

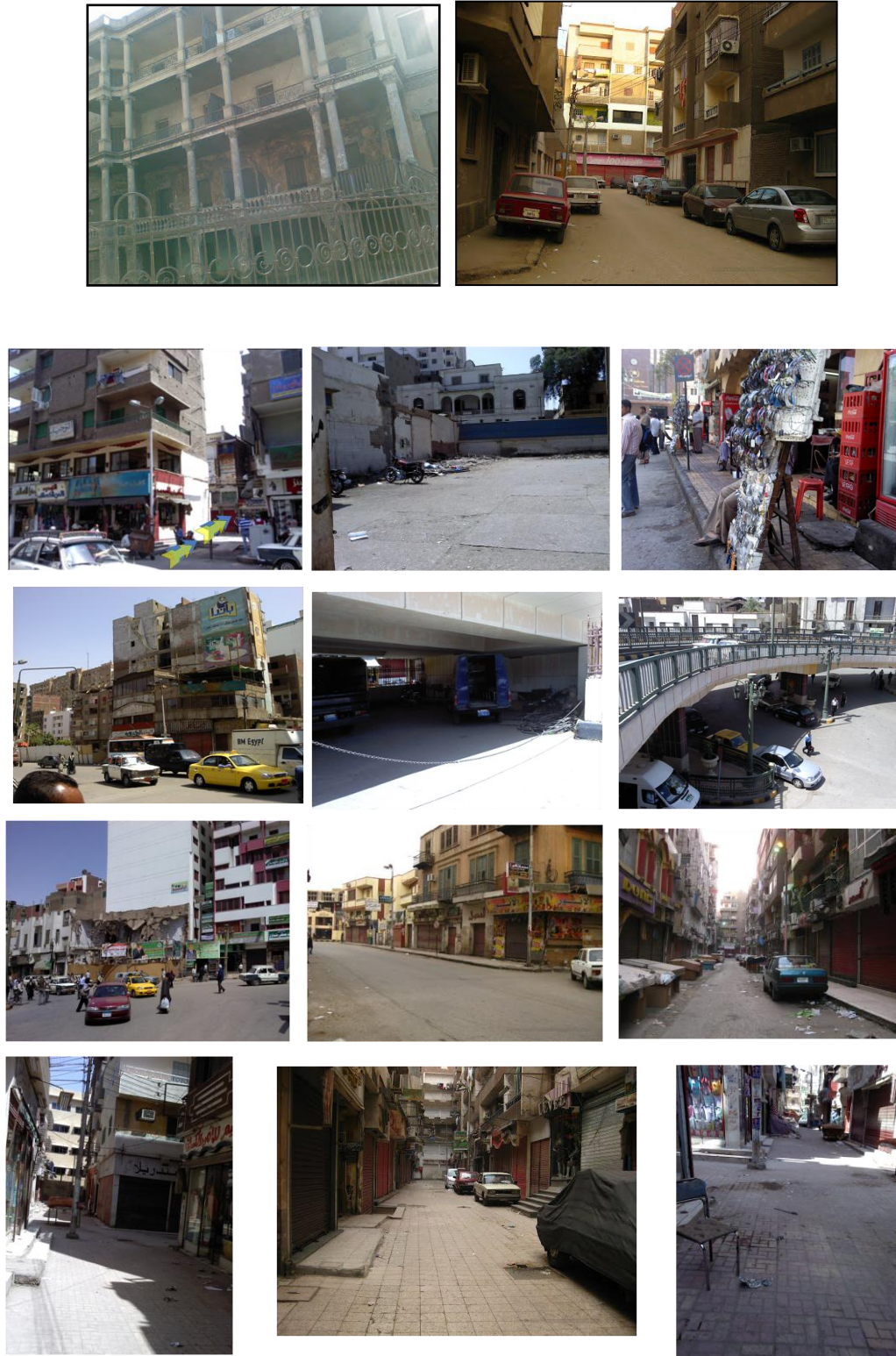
The components of the eastern area's image	The negative indicators	The shortage of criteria
<b>Streets network</b>	<p>Illegible nodes and focal points which lack the landmarks and street furniture.</p> <p>The streets network includes some Cul-De-Sacs and lanes</p> <p>The bridges pass through the residential areas and affect the visual privacy of these areas.</p> <p>Air pollution, high level of noise in the main streets and the absence of cleanness in side streets and alleys.</p>	<p><b>Permeability</b></p> <p><b>Legibility</b></p>
<b>Public spaces</b>	<p>The area has not any natural edges or views.</p>	<p><b>Attraction</b></p>
<b>Built objects</b>	<p>The bousing views from the high buildings because the roofs of low buildings are not utilised in any uses.</p> <p>The deteriorated historical palaces and villas affect the streetscape of Al-Gomhorya Street and Al-Nemeis Street.</p>	<p><b>Visual comfort</b></p>



➤ **General problems of the area of ACC:**

- There are three different institutions which are responsible for regenerating this area; Monuments Institution, Municipality and Ministry of Environment which lead to contradicted decisions and slowness of implementation. All the last regeneration plans concentrated on regenerating Port-Said Street and they did not depend on the public participation in making decision about their area.
- The problem of on-street parking especially for the vans which bring goods to the shops which makes the pedestrian movement so difficult.
- The use of non-appropriate materials in restoration works for old buildings. For example, the use of concrete columns in restoring Wekalat Thabet which has been built by stones carrying walls and some wooden structures.
- The residential use of heritage buildings or adding some floors without any respect to the infrastructure of the area. These floors are constructed using different materials which conflict with the original visual profile of the buildings
- The level of noise and air pollution is very high because of the industrial uses and cries of street activities. Furthermore there is no kind of regular monitoring for the environmental quality of the area.
- The absence of any rules or laws that can control and maintain the visual profile of the old buildings. Furthermore, the available fund to restore or renew the deteriorated buildings is not enough.
- The pavements could not be used properly by the pedestrian because of the great number of commercial activities and street vendors who occupy most of the pavements.
- The absence of any rules or laws that can maintain the visual profile of the old buildings. Furthermore, the available fund to restore or renew the deteriorated buildings is not enough.
- The majority of inhabitants are not aware of the importance of maintaining the image of heritage buildings. Furthermore they do not have the environmental culture that encourages them to keep their area clean.

The absence of human scale in the main streets in the eastern part of ACC due to the large number of tall buildings, the existence of bridges and the absence of street furniture. *Figure 6.82 demonstrate the negative aspects of ACC:*



*Figure 6.82: Different photos show the negative aspects of the image of ACC*

### 6.5 Third stage: Improvement of the visual image of ACC:

Urban improvement is the response to the opportunities and challenges of urban areas. The urban assessment of Assiut City Centre clarifies that its current condition is a mixture of physical and visual problems that are getting worse as the city continue to grow. The disconnection between policy aspiration and practical delivery increases the decline of the area and reduces the effect of previous improvement programmes. The urban improvement program is based not only on the identified problems but also on the opportunities and strength points of the area (See Figure 6.83).

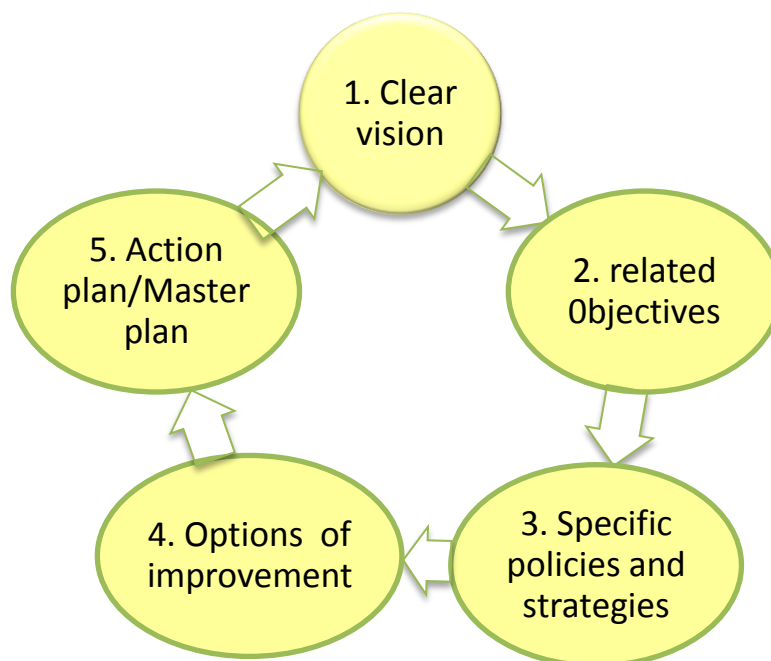


Figure 6.83: The sequence of the urban improvement process.

#### 6.5.1 Vision of the urban improvement of ACC:

The proposed vision here is to make Assiut City Centre legible, accessible, and well connected area through the establishment of more green and walkable streets and linkages between the different quarters in the whole centre. Creation of a distinguished mix of land uses in a beautiful landscape that mixes the old with the new buildings and a comprehensive visual improvement that adapt with the continuous changes of the city form is also included in the vision.

### **6.5.2 Objectives of ACC urban improvement:**

To achieve a really transformational vision for the city centre, clear objectives for urban regeneration process should be identified. Expertises and stakeholders should be involved in this process. The suggested objectives are as follows:

- To bring a comprehensive improvement to the physical appearance of the area from the street and overhead levels and to create a strong sense of ACC as the hub and heart of Assiut City.
- To promote effective collaboration between local authorities and other agencies and to engage wider range of people and organisations outside the local authority taking advantage of their ideas and innovative thinking.
- To build a great public realm and inviting pedestrian environment; streetscapes, urban squares and parks. This objective would support the criteria of liveability and walkability.
- To enhance the civic presence and amenity in the city centre with additional public facilities that can be accessed by all kind of users. This objective would support the criteria of amenity and liveability.
- To seat unique retail centre that is pedestrian friendly, vibrant more arts and culture activities in the city centre and concentrate high quality restaurants and leisure centre to create a critical density of activities in the central area. This objective would achieve the diversity and variety of uses.
- To create a welcoming centre by improving gateways and providing a consistent image of the area and making sure that people's first impression about the central area is positive. This objective would support the legibility and imageability.
- To reconnect places and to improve visual and physical permeability with particular focus on the area around the railways in order to enhance the coherence and permeability.
- To make the movement easier by providing smoother pedestrian and vehicles flow, locating appropriate landmarks and giving wayfinding information where it is needed in order to support the legibility and walkability.

- To control the height and volume of buildings through buildings laws and rules in order to improve the streetscape and skyline and develop distinguished over-head image of the area to achieve the visual comfort and the visual permeability.
- To engage the roofs of large buildings in the pattern of public spaces in ACC to support the liveability of the area.
- To innovate solutions in order to accelerate the delivery of urban regeneration actions to meet the challenges of the area.
- To develop the area to be usable and more safe.
- To enhance the skyline design through the upper portion of the building to promote visual interest and variety in the city centre skyline.
- To integrate parking facilities and incorporate architectural treatments or suitable landscaping for improving the safety and comfort of public realm.

### **6.5.3 Urban improvement policies:**

This section outlines the key strategies which are relevant to the improvement vision. Because of the shortage of financial resources, this proposal is based on reforming and reconstructing and utilising the existing patterns of buildings and spaces. The improvement stage starts with the identification of the general policies which can be translated to detailed actions or interventions in order to improve the area of ACC. These policies are summarised as following:

- Restructuring and consolidating the existing physical and spatial form of the city centre.
- Developing a policy for buildings heights which respect the predominant character of each area in terms of existing land uses, buildings size, types of streets and the form of skyline and the over-head views from these high buildings. This policy should be flexible and not to be applied to all areas in the same way.
- Avoidance of unsightly “left over” sites and vacant pieces of land by accelerating the use of these lands in temporary or permanent activities.

These vacant sites and buildings should be monitored to ensure their maintenance and clean appearance.

- Providing additional parking areas wherever possible with focus on the middle area and around the rail station. A Multi stories car parking is recommended to be built in this area to adapt with the future growth in traffic and parking demands.
- Maximising the use of public transport and cycling by providing the central area by safe and distinct circulation lines, parking areas and stop points for public transport.
- Engaging of multiple partners such as the public, businesses, stakeholders and the city council or local government reduces the effect of the state's aims on the regeneration process.
- Establishing a positive identity for the area of ACC either by focusing on the existing heritage buildings and spaces especially in the old area or by creating attractive cultural buildings in the middle and eastern areas.
- Maximising the role of the image of the old area in branding the whole area of ACC in order to encourage more visitors and tourists to navigate and explore the urban features of this distinguished area. In this context, it is important to develop and update a list of designated buildings which should be restored and monitored to prevent any change or deterioration in their uses or appearance. This list can be prepared by the collaboration between the governmental institutions, university and heritage experts.
- Establishing more mixed uses buildings and spaces where people can live, work and walk to access the different services. The mixed development cuts down the travel time and distance and it is a good solution in terms of environmental development.
- To improve the quality of public realm, the area of ACC needs provision of public amenities in order to facilitate the use of the area.
- Applying the concept of design coding in the proposal of ACC urban improvement. This concept has a great role in reducing the sense of visual chaos because it sets some standards for architectural and urban elements to

be more organised and connected. The central area of Assiut should have its own design codes which give the area its character. Generalising these codes through the city districts is not a good solution.

- Setting specific design guidelines for tall buildings which are located in the city centre. ACC should have its own guidelines that may be not applied or used in the other districts. Actually, at the present we have not a clear map of institutions and partners which can achieve this task in efficient way. So it is required to distribute the different tasks and roles between experts in urban design and the institution which is responsible to set the laws and rules which control the building process in the city. This distribution of tasks should be done in a logic way according to the specialisation of each part in the system. It is important to consider the collaborative approach during the urban improvement process to avoid any conflict in the decisions and to avoid the gap between what is already decided and what is implemented in real. Regarding the height of buildings in ACC, it should be a limit for buildings height according to the location of the building, the surrounding urban context, the type of the street and the function of the building.
- Finding locations for core parks in ACC seems to be difficult so the proposed types of green areas are; street gardens, green areas and roof gardens.
- In the case of ACC, special urban design and/or architectural treatment may be necessary to create recognizable landmarks within and between the three areas of the ACC. To ensure the visibility and perception of landmarks, they should be located in a highly recognizable location. In the case of the present ACC, this is only three specific places that are recommended as landmark locations. Mainly, Al-Mahatah Square, Al-Magthoub Square and Al-Manfath Square are the most appropriate locations for landmarks. The design of landmarks should respect the design guidelines which have been clarified previously in this research and focused on the avoidance of using the absolute vertical tall landmark which has no visual meaning when it is observed from the surrounding high observation points.
- ACC area needs more focusing on improving the cultural dimension. The proposed area should add cultural uses to ACC area by locating a theatre and

small culture centre to form with the already existing cinemas a cultural node which could not be found in other districts in the city.

- There is a great demand for providing ACC area with signs that state the names of streets and squares and the time it takes to wander from any given point A to point B in the area. It is realised that multiple languages could make signage much more accessible. The goal here is to improve the legibility and walkability especially in the old area of ACC.
- The area of ACC should be provided with adequate lighting. To promote a sense of security during night time, it is required to create appropriate levels of lighting on the building facade, around street furniture, in merchandising display windows, on roofs of the buildings, in squares and green areas and on signage.
- The area of ACC should be provided with the public facilities such as toilets, seating areas, bus stops and other public services. It is a very urgent invention in order to fulfil supportive functions related to the health and well-being of the citizens of ACC area. Such services should be easily accessed by all kinds of users including people with disabilities, elderly and children to reinforce the quality of public realm.
- The negative visual impact of the over bridges on the image of the area should be reduced by adding suitable treatment. The urban design of the areas under the bridges at the street level should be reconsidered in order to utilise these vacant shaded area in active uses or as organised parking areas.

#### **6.5.4 Proposed interventions for improving the image of ACC:**

There are three strategic development areas in Assiut City Centre. These areas are: The old area, the middle area and the eastern area.

*The proposed approach for improving the image of ACC clarifies:*

- The potential pattern of land uses.
- The proposed regeneration of streets network.
- The proposed regeneration of landmarks and nodes.
- The potential uses of roofs and the vacant lands.



- The proposed regeneration of historic buildings and spaces.
- The potential improvement of public realm.

6.5.4.1 Improving the image of the old area:

According to the proposed approach for improving the visual image of the city centre which is clarified in chapter five, there is a group of qualities which should be achieved. These qualities are; imageability and legibility, diversity and livability, visual permeability and coherence and linkage.

In order to improve the variety of uses and liveability of the old area, the proposed main zones of the potential land uses keeps the historic character of the area and improves the variety of uses as shown in Figure 6.84. The proposed zoning keeps the residential uses in the safe zone, improves the mixed-uses instead of the pure commercial uses and moves the industrial zone away from the streetscape of main streets such as Port Said Street and Al-Qesarya Street. Regarding the improvement of the legibility of the image of the streets network, Figure 6.85 clarifies the suggested interventions.

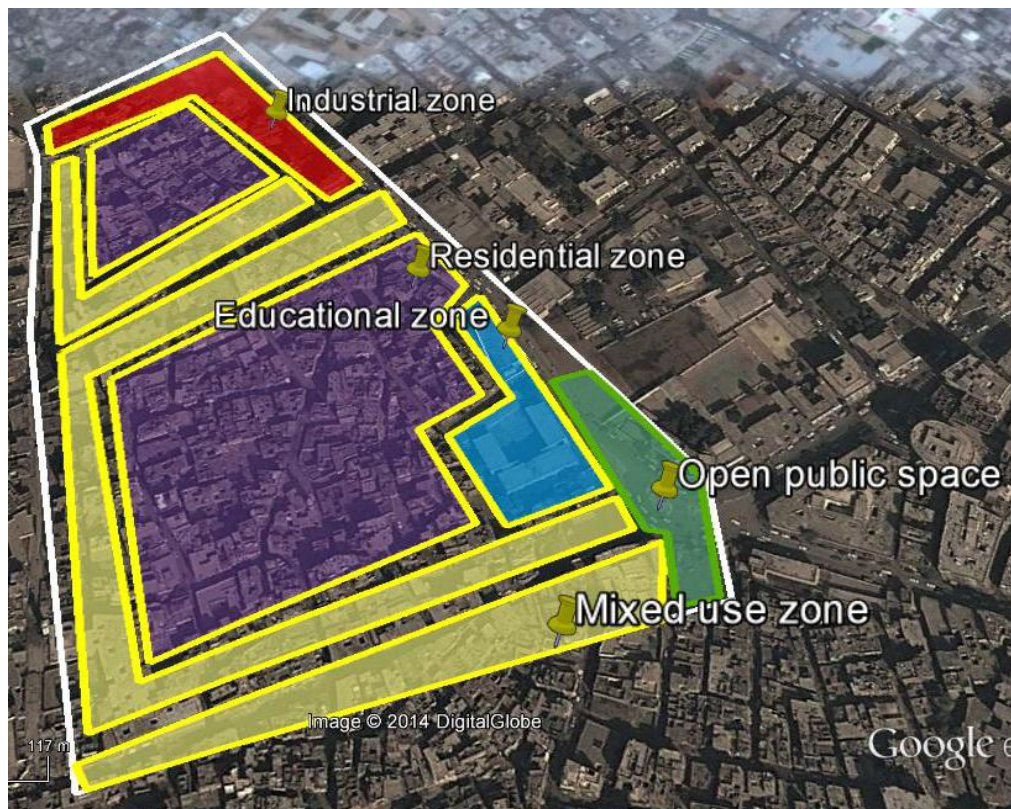


Figure 6.84: The potential land uses in the proposed old area of ACC



*Figure 6.85: The proposed action plan for regenerating the street network of the old area*

Figure 6.86 introduces the proposed image of Al-Magthoub square. This square is considered as the most important open spaces in the old area. There is a wide range of buildings which surround this square including Al-Shamla Hospital, Assiut Post Office, Assiut Call Centre and Al Magthoub Mosque.

The addition of green and water landscape improves the attraction of the square and increases the sense of thermal comfort. The utilisation of vacant land to improve the public realm and to extend the available parking area is clear in the proposed image of the square. The back yard of “Al-Shobban Al-Moslimeen Building” can be converted to a public swimming pool that is surrounded by shaded sitting areas and public amenities such as toilets and catering services. In order to improve the overhead image of the square, the roof of the low building that views the square can be utilised as a roof garden, restaurant or public space for social events. Because Al-Magthoub Square is considered as the entrance for the historic area, the proposed image includes a gate to Port Said Street. This gate respects the Islamic style in its design.

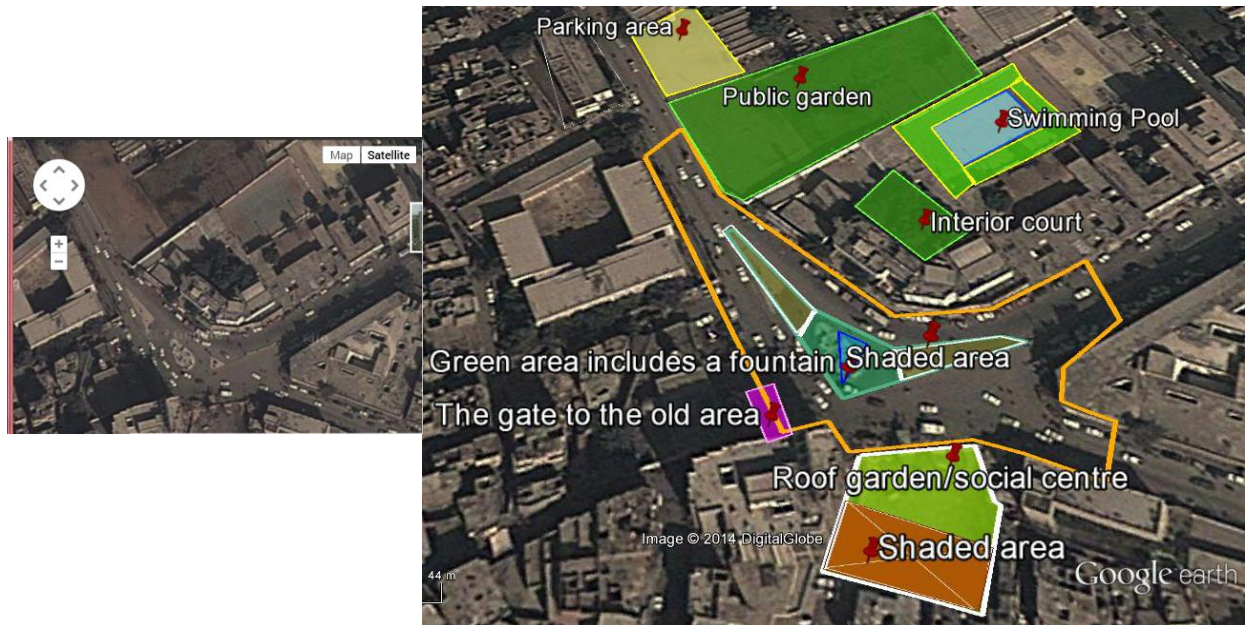


Figure 6.86: Left: The current image of Al-Magthoub Square before the urban regeneration. Right: The proposed image of Al-Magthoub Square.

Figure 6.87 clarifies the addition of a distinguished landmark to act as attractive vista to Port Said Street and to approach the main pedestrian area (Al-Qesarya Street). The pedestrian path starts with a distinguished gate that determines the entrance of the path. To give this street a unique character and to improve its legibility, it is proposed here to replace the current deteriorated shading materials with light wooden ceiling that improves the quality and comfort of public movement through this path.

Restoration of Galal El Deen Al Soyoty Mosque is an important action in order to improve the visual quality of historic buildings and to attract more tourists to the area. In this context, the restoration of wekalahs and hammams is also important. The reuse of these public buildings as tourism attractions, cultural uses or as art galleries is considered to be crucial action in the regenerated area. The proposed open market is located in an unused site in order to locate the street vendors and to maintain the streets and pavements clean and organised. This action contributes also in reducing the level of noise in the old area. To provide the area with more spaces for offices and commercial uses, it is proposed that the building of Benzion store can be extended vertically to create a mixed use building which dominates the streetscape and provides the old area with additional services, leisure and amenities. Accordingly the liveability and variety of uses will be improved (See Figure 6.87).

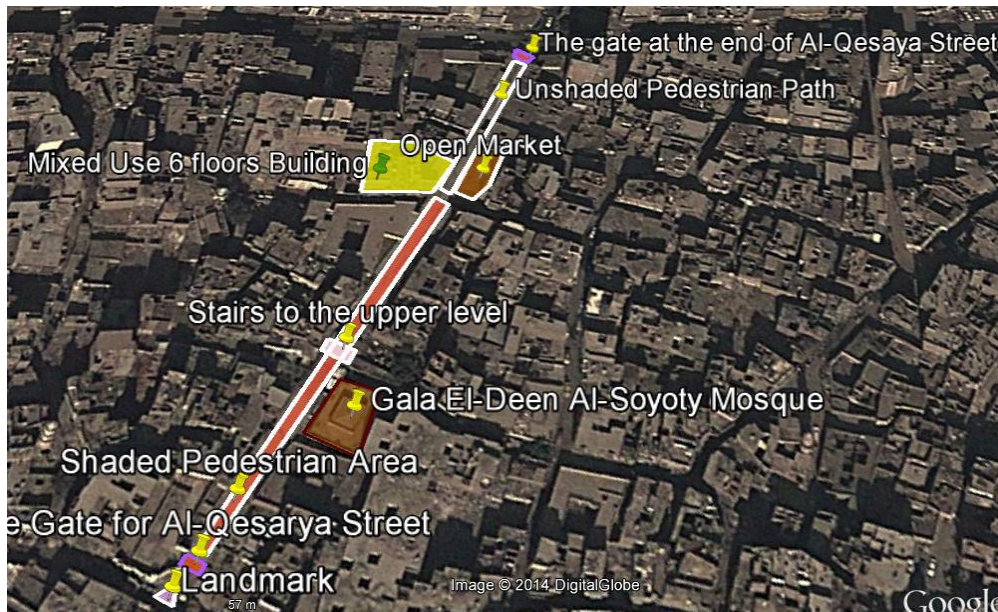


Figure 6.87: The proposed image of Al-Qesarya Street which represents the pedestrian path in the old area.

Regarding Port Said Street, The proposed streetscape is formed of wooden arcades style which improves the sense of rhythm and makes the best utilisation of pavement. The following Figure illustrates the proposed image of the public space at Al-kabeer Mosque. This square represents the end of the visual sequence of Al-Qesarya Street, therefore the proposed action utilises this space to create legible and visible public focal point by adding a central fountain that is surrounded by shaded area as shown in Figure 6.88.

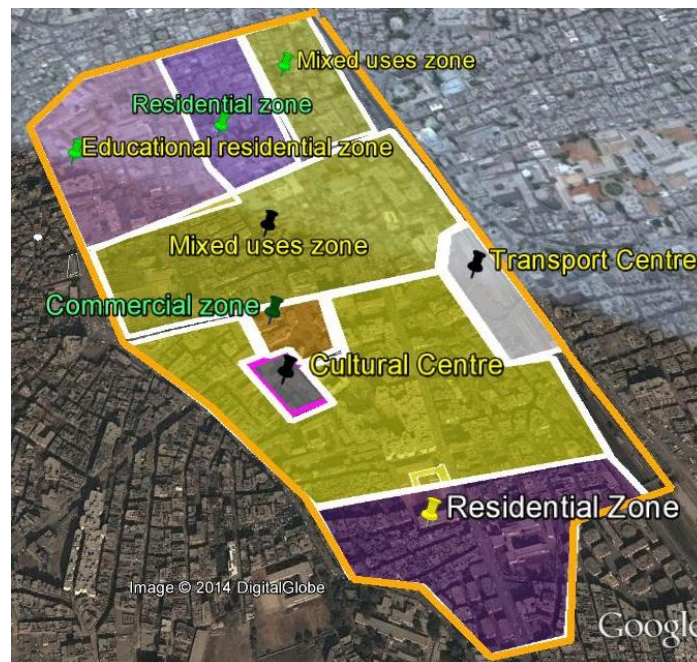


Figure 6.88: The proposed image of Al-Kabeer Square

6.5.4.2 Improving the image of the middle area of ACC:

The proposed improvement of the image of streets network focuses mainly on improving the streetscape of main streets, provision of parking areas and reimagining the squares and focal points. There are some simple interventions that can improve the visual and functional aspects of the main streets in the middle area. According to the urban analysis of this area, this area includes wide long streets with many intersections. The proposed zoning of land uses is clarified in Figure 6.89.

Improvement of the pavements' quality by making them wider and clear from any occupancy is proposed in the regenerated area. Wide streets in particular should have the 2 levels pavement; the first level can be one metre wide in front of shops and the other level can be two metre wide. The use of two levels pavement allows the shops to display their goods only on the top level of the pavement because the bottom level is advocated to pedestrian movement. This form of pavement can be used by another way in the streets which do not include so much retail activities. In such case, the lower level of the pavement should be the same level of the street to be used for on street parking. The top level is used for pedestrian movement and provided by clear safe access points. The maintenance of the pavement's floor is an important action to improve the safety and comfort of movement (See Figure 6.90).



*Figure 6.89: The proposed land uses zoning demonstrates the wide variety of uses and activities which makes the middle area the most liveable area in the proposed ACC*



*Figure 6.90: Left: The use of two levels pavement in the retail and mixed use streetscape. Right: The use of two levels pavement in the residential streets. All pavements should have safe access points that are suitable for all kinds of users*

The proposed image of the main streets includes the basic streets furniture such as lampposts, signposts, simple shaded seats and streets' baskets. One of the negative effects of the previous attempts to improve the visual image of the streetscape is the effect of unifying the colours of buildings along the main streets. The repetition of crème and dark red facades in Thabet Street and of white and dark red facades around Al-Mahatah Square is the result of this decision. It is proposed here that the harmony between the colours of buildings is demanded rather than the unification approach which leads to the sense of misplacing and monotony. The colours unification approach can be applied to the advertisements boards in order to improve the sense of order and visual comfort instead of the current eyesores chaotic use of such boards (See Figure 6.91).



Figure 6.91: It is proposed to apply the unification of the colours of hoarding boards  
Top: The repetition of the same colours along Thabet Street. Bottom: The chaotic use of hoarding boards in the middle area of ACC (www.panoramio.com)



Figure 6.92: Top: The current image of the entrance of Yousry Ragheb Street demonstrates the demand for creating an attractive landmark building. Bottom: The proposed leisure cultural building which includes sport centre, reading and learning centre, art gallery, kids play zone, children library and theatre.

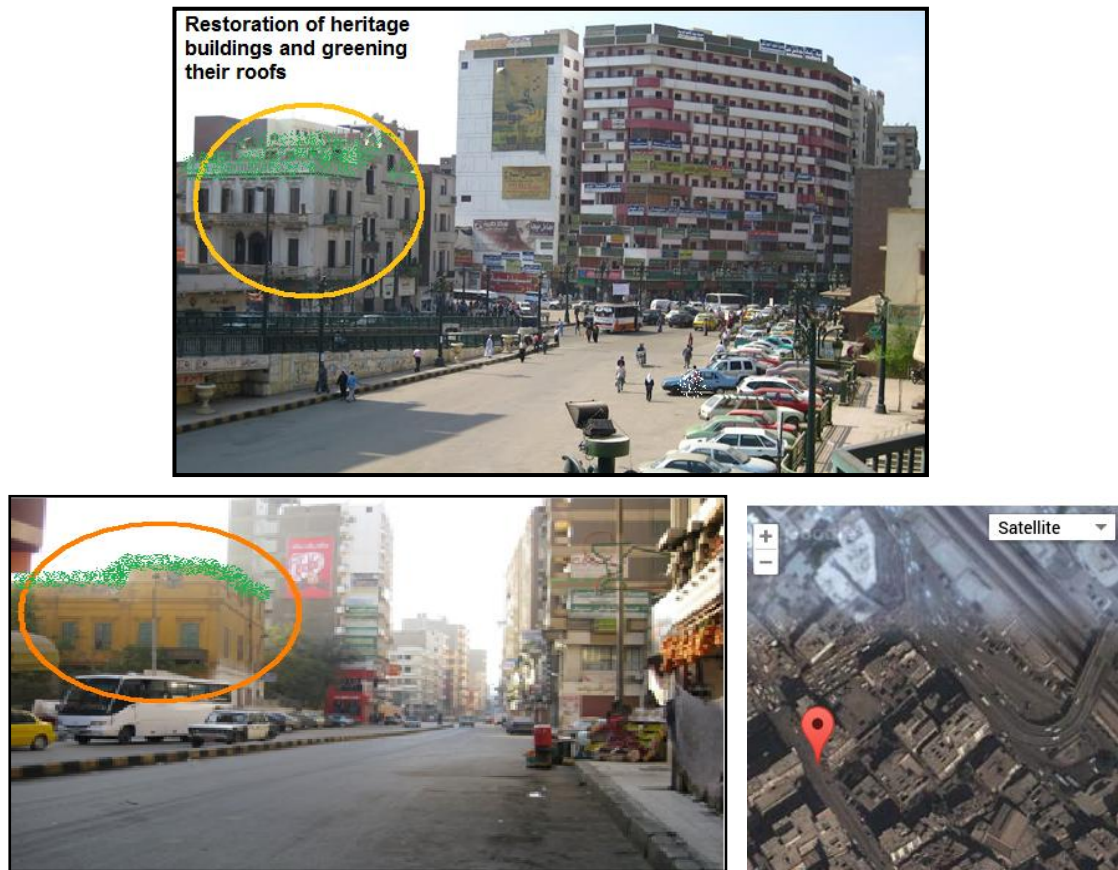


Figure 6.93: Heritage buildings at Al-Mahatah Square and in Yousry Ragheb Street should be restored and their roofs should be attractive views for the surrounding tall buildings



Figure 6.94: Removing the deteriorated streets furniture and providing the intersections with traffic light and safe crossing areas is proposed to improve Thabet Street





Figure 6.95: Left: The middle area includes unused sites which have strategic location such as the vacant land at the intersection between Yousry Ragheb and 26<sup>th</sup> July Streets. Right: The proposed temporary use of this land either as open market or parking area by providing the site with suitable shades



Figure 6.96: Left: A clear view of Talaat Harb Statue at Banks Square. Right: The importance of removing all advertisement boards which block the view of landmarks

The following Figures show the potential enhancements to the pedestrian environment in the middle area. However it is difficult to extend the small area which is advocated to pedestrian movement in this area, the urban quality can be improved by specific actions. The potential regeneration actions focus on the visual appearance of the pedestrian area and how to create attractive usable pedestrian realm in the middle area. According to the urban analysis, there are two main pedestrian areas in the middle area of ACC as shown in Figure 6.97. The retail and commercial activities dominate these areas either through shops or street vendors. The movement in these areas should be comfortable and safe so it is proposed here

to replace the current floors by more suitable floor that encourages the movement in these areas. The proposed form of floors is shown in Figure 6.98 is penetrated by small green areas in order to improve the attractiveness of these paths.

Removing all forms of street vendors and occupancies which increase the noise level and obstacle the flow of pedestrian movement is an important priority. The provision of public amenities such as public toilets, information maps, suitable catering services and corners for kids contributes in improving the urban quality of these pedestrian areas. Regarding the perception of the pedestrian areas, it is proposed here to create attractive entrances or gates to these areas to catch the attention and improve the legibility and accessibility of the pedestrian areas. The proposed pedestrian area includes the demanded street furniture to enhance the public amenity. From over-head perspective, it is not recommended to shade these areas completely to avoid blocking the over-head views of the pedestrian areas. These narrow areas are already shaded by the surrounding buildings.



Figure 6.97: The spatial context of the two main pedestrian areas in the middle area

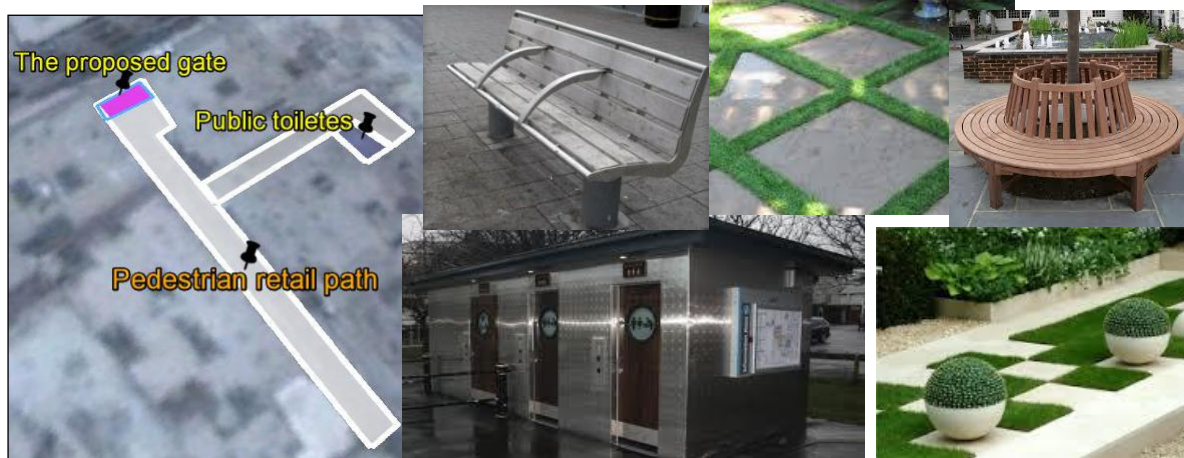


Figure 6.98: The proposed actions to improve the image of the pedestrian areas (<http://blogpreston.co.uk>), ([www.outmc.com](http://www.outmc.com)), ([www.cluboutfitter.com](http://www.cluboutfitter.com))

Street lighting is a key organizing streetscape element that defines the night visual environment in urban settings. On wide streets, light fixtures is proposed to be located on both sides of the street, and can be staggered or directly opposite depending upon light level and uniformity considerations as shown in Figure 6.99. In general, providing sidewalks with a minimum luminance of 0.5fc allows pedestrians to detect obstacles, stay visually oriented, and recognize faces from a distance of 4.5 metre, a minimum distance that brings comfort with regard to normal social contact (Hampshire Environment Department, 2010). Table 6.4 includes guidelines for designing the street lighting according to the type of the streets.

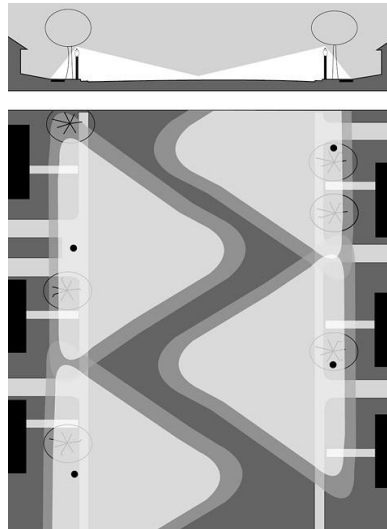


Figure 6.99: The lighting guidelines for wide streets. Locating lighting poles in both sides of streets either staggered or directly opposite (Hampshire Environment Department, 2010)

Table 6.4: The design guidelines of streets lighting (Hampshire Environment Department, 2010)

Type of Road	Minimum Ra Value	Column Height (max)	Bracket/Luminaries inclination %
Strategic Route, traffic flow > 15,000	20	12 to 30m	0.5/5
Footway	60	6m	0/5
City/Town Centre	60	10m	0.5/5

The improvement of the image of Al-Mahatah Square is required in order to increase the legibility and attractiveness of this important square and to activate a public place with distinct image. This action can be achieved by providing the square with distinguished landmark, street garden, public amenities, safe crossing points, information boards and enough parking area as shown in Figures 6.100 and 6.101.



1. Recreation area includes green area with trees and water elements.
2. Public plaza includes shaded seating areas on a linear platform surrounded by lightening columns.
3. A landmark in a well observed location from various observation points.
4. Safe and clear crossing area provided by traffic light and observed by small security and information office.
5. Green island to separate the two ways of the streets.

Figure 6.100: The proposed image of Al-Mahatah Square

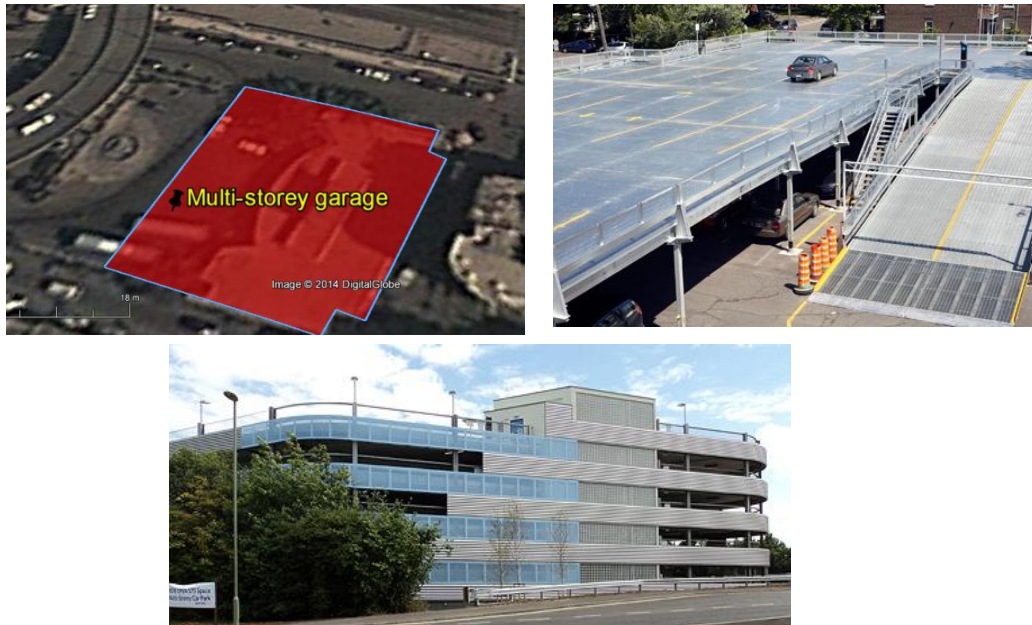


Figure 6.101: Top: The proposed location for building a multi-storey car parking.  
Bottom: The two options for adding parking spaces to Al-Mahatah Square  
(<http://steelparking.com>)

#### 6.5.4.3 Improving the image of the eastern area of ACC

The urban analysis of the eastern area shows that this area is the most legible, usable and organised area in ACC. Therefore, it does not need great intervention to be improved. The following points clarify the proposed action to improve the image of the eastern area:

- Ensuring the variety and integration of land uses zoning which includes mixed-uses, residential, educational, commercial and administrative zones (See Figure 6.102).
- Highlighting the area surrounding the main civic building in ACC by creating shaded pedestrian path surrounded by parking areas for the workers and users of the administrative building as shown in Figure 6.103 .
- Providing the eastern area with a pedestrian commercial path. This path occupies a part of the main commercial street which is called Reyad Street. It is recommended to provide the pedestrian path with gates to catch the attention to this area (See Figure 6.104).
- It is recommended here to close the ground-level intersections between the railway lines and main streets which influence the safety of the east-west axes

of movement completely and to focus the pedestrian movement through the stairs parallel to Al-Helaly Bridge. These stairs should be maintained, lightened and monitored by cameras or security people to be used safely and to prevent any commercial activities on the stairs. It should be an alternative link available for people with disabilities. The area under Al-Helaly Bridge should be utilised as parking area for the surrounding residential buildings. Another huge bridge in the eastern area is the one which goes parallel to the railway to decrease the cognition level in Al-Manfath square by providing another level of movement. This bridge is called Al-Galaa- Al Gomhorya Bridge. There is a wide shaded platform under this bridge which should be provided by street furniture to create a usable public space. Seats, bins and green elements can give this area the sense of public space.



Figure 6.102: The proposed land uses in the eastern area of ACC  
([www.panoramio.com](http://www.panoramio.com))



Figure 6.103: Highlighting the main administrative building in the image of the eastern area

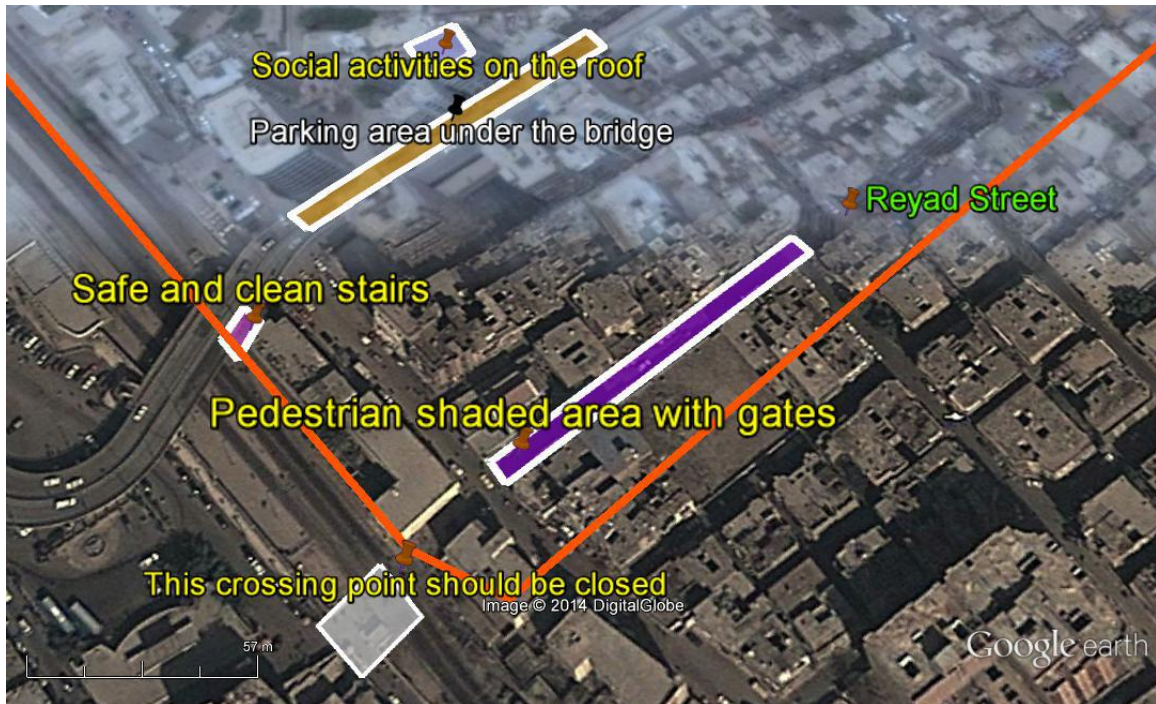


Figure 6.104: Creating a shaded pedestrian area with gates occupies a part of Reyad Street

- The area includes old unused buildings which are located in Al-Helaly Street and Al-Nemies Street. It is important to give life to these buildings by locating cultural uses in them. For example, the heritage building near Al-Helaly Mosque as shown in Figure 6.105 can be utilised as public library and art gallery.



Figure 6.105: The utilisation of unused heritage building in cultural uses  
([www.panoramio.com](http://www.panoramio.com))



- The minarets of mosques and towers of churches play an important role as landmarks in the eastern area of ACC. To keep the identity of this area, it is recommended to keep these landmarks well observed from various observation points.

On the other hand, the landmark in Abu-Al-Fotouh Square which takes the form of a golden bird needs to be more legible. It is recommended to add height to the current landmark in order to adjust its scale related to the scale of surrounding high buildings. The following Figure illustrates the current scale of this landmark and suggests adding vertical objects to the current golden bird statue as shown in Figure 6.106. As a result, a group of vertical and horizontal elements will be observed from distant.

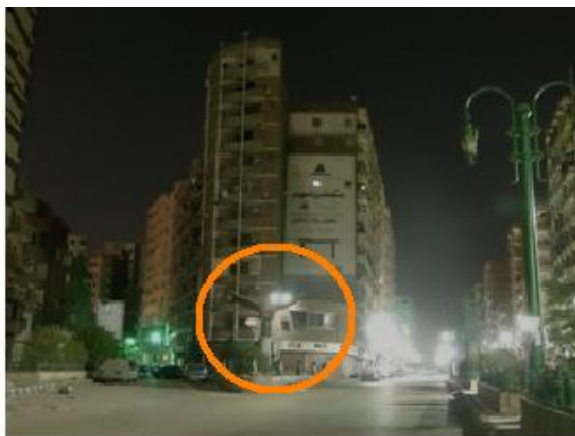


Figure 6.106: The addition of vertical elements to form with the current golden bird a well observed landmark

- Creating a unit of multi public amenities which include public toilets, restrooms, information displays and public telephones. This unit is located in the front of the pedestrian path instead of the ground level crossing point which is recommended to be closed (See Figure 6.107).



Figure 6.107: Adding a multi public amenities unit near the pedestrian retail path.

Table 6.5: The proposed interventions for improving the image of ACC

The proposed improvement interventions	The components which are improved	Criteria that are considered
1. The proposed zoning keeps the residential uses in the safe zone, improves the mixed-uses instead of the pure commercial uses and moves the industrial zone away from the streetscape of main streets	Built objects and open spaces	<b>Variety and liveability</b>
2. lightening the residential streets and closed-end streets	Streets network	<b>Safety and legibility</b>
3. The use of two levels pavement in the retail and mixed use streetscape.	Streets network	<b>Order</b>
4. The unification of the colours of hoarding boards rather than the unification of buildings' colours.	Built objects	<b>Order and consistence</b>
5. Creating an attractive landmark building at the entrance of Yousry Ragheb Street. The proposed leisure cultural building includes sport centre, reading and learning centre, art gallery, kids play zone, children library and theatre	Streets network and Built objects	<b>legibility, variety and amenity</b>

<p>6. <i>Heritage buildings at Al-Mahatah Square and in Yousry Ragheb Street should be restored and their roofs should be utilised as attractive views for the surrounding tall buildings</i></p>	<p>Built objects</p>	<p><b>Legibility and visual comfort</b></p>
<p>7. <i>The temporary use of vacant land at the intersection between Yousry Ragheb and 26th July Streets either as open market or parking area by providing the site with suitable shades.</i></p>	<p>Open spaces</p>	<p><b>Amenity and variety</b></p>
<p>8. <i>Develop a clear view of Talaat Harb Statue at Banks Square and remove all advertisement boards which block the view of landmarks.</i></p>	<p>Built objects and Open spaces</p>	<p><b>Legibility and visibility</b></p>
<p>9. <i>Removing the deteriorated streets furniture and providing the intersections with traffic light and safe crossing areas for pedestrians.</i></p>	<p>Streets network</p>	<p><b>Attraction, safety, accessibility and amenity</b></p>
<p>10. <i>Creating a recreation area includes green area with trees and water elements in Al-Mahatah Square</i></p>	<p>Open spaces</p>	<p><b>Attraction, amenity and identity</b></p>
<p>11. <i>Creating Public plaza includes shaded seating areas on a linear platform surrounded by lightening columns in Al-Mahatah Square.</i></p>	<p>Open spaces</p>	<p><b>Attraction, amenity and identity</b></p>
<p>12. <i>Creating a landmark for Al-Mahatah Square in a well observed location from various observation points.</i></p>	<p>Open spaces</p>	<p><b>Legibility, attraction, accessibility and imageability</b></p>
<p>13. <i>Develop a safe and clear crossing area provided by traffic light and observed by small security and information office in Al-Mahatah Square.</i></p>	<p>Streets network</p>	<p><b>Amenity and safety</b></p>
<p>14. <i>Building a multi-storey car parking in order to add parking spaces to Al-mahatah Square and to the whole middle area.</i></p>	<p>Built objects</p>	<p><b>Amenity and accessibility</b></p>
<p>15. <i>Focusing the pedestrian movement through the stairs parallel to Al-Helaly Bridge and closing the ground level crossing point completely. These stairs should be maintained, lightened and monitored by cameras or security people to be used safely and to</i></p>	<p>Streets network</p>	<p><b>Attraction and safety problems</b></p>

<i>prevent any commercial activities in the stairs. It should be an alternative link available for people with disabilities. The area under Al-Helaly Bridge should be utilised as parking area for the surrounding residential buildings.</i>		
<i>16.The wide shaded platform under Al-Galaa- Al Gomhorya Bridge should be provided by street furniture to create a usable public space. Seats, bins and green elements can give this area the sense of public space.</i>	Streets network	<b>Attraction and amenity</b>
<i>17.Ensuring the variety and integration of land uses zoning in the eastern which includes mixed-uses, residential, educational, commercial and administrative zones.</i>	Built objects	
<i>18.Highlighting the area surrounding the main civic building in the eastern area by creating shaded pedestrian path surrounded by parking areas for the workers and users of the main administrative building in the area</i>	Open space	<b>Accessibility and legibility</b>
<i>19.Providing the eastern area with a pedestrian commercial path. This path occupies a part of the main commercial street in the eastern area which is called Reyad Street. It is recommended to provide the proposed pedestrian path with gates to catch the attention to this area.</i>	Streets network	<b>Safety, amenity, variety and accessibility</b>
<i>20.Rescaling the landmark of Abu-Al-Futuh Square related the scale of surrounding high buildings by adding vertical objects to the current golden bird statue. As a result, a group of vertical and horizontal elements will be observed from distant.</i>	Open spaces	<b>Legibility, attraction and imageability</b>
<i>21.The heritage building near Al-Helaly Mosque can be utilised as public library and art gallery.</i>	Built objects	<b>Variety and attraction</b>
<i>22.Building a unit of multi public amenities which include public toilets, restrooms, information displays and public telephones. This unit is located</i>	Built objects and open spaces	<b>Amenity</b>

<i>in the front of the pedestrian path (Reyad Street) instead of the ground level crossing point which is recommended to be closed.</i>		
<i>23. Using of suitable floor, applying the arcades style for shops, removing the obstacles of movement and provision of maps and signposts and public amenities in the pedestrian paths in the middle area of Assiut City Centre.</i>	Open spaces	<b>Amenity, attraction and safety</b>
<i>24. Relandscaping the focal point viewed by Al-Kabeer Mosque in the old area of Assiut City Centre.</i>	Open spaces	<b>Legibility and attraction</b>
<i>25. Restoration of heritage buildings and greening their roofs to be utilised as views for surrounding tall buildings.</i>	Built objects	<b>Attraction</b>
<i>26. Provision of gates, landmarks and shades for Al-Qesarya Street in the old area of Assiut City Centre.</i>	Streets network	<b>Accessibility, legibility and attraction</b>
<i>27. Reimaging the area of Al-Magthoub Square and improve the approach axis to the old area of Assiut City Centre</i>	Open spaces	<b>Imageability, legibility, attraction and accessibility</b>
<i>28. Creating an open market in the old area of Assiut City Centre.</i>	Open spaces	<b>Order and liveability</b>
<i>29. Creating a roof garden on the top of a low building which views Al-Magthoub Square</i>	Built objects and open spaces	<b>Attraction and legibility</b>

#### **6.6 The public respons to the ACC improvement proposal:**

It is recommended here to prepare a governmental report or document which includes the illustrations of the proposed interventions. This document can be available on the governorate website and can be distributed as free printed copies through the cultural centres, the university and the civic buildings. This document surveys the thoughts of the public users about these actions and gives them the chance to evaluate the action plan and suggest additional improvement options to be considered in the preparation of the final masterplan.

#### **Conclusion:**

This chapter tries to apply the proposed approach for improving the image of the city centre which is clarified in the previous chapter to the study area which is Assiut City

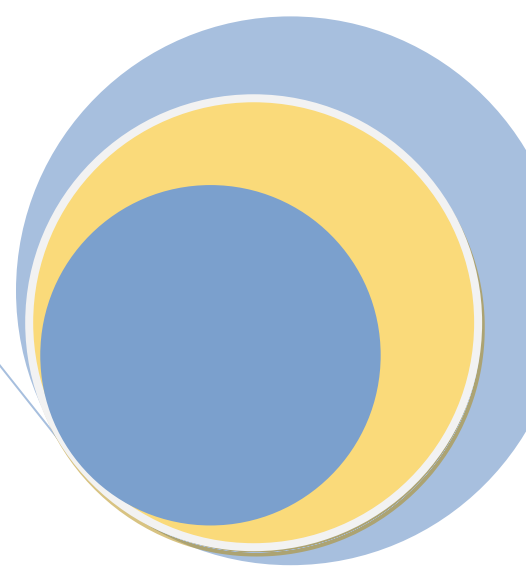
Centre (ACC). It is suggested here to extend the area of ACC which is already adopted by the governmental documents to add a range of uses and values which should exist in the central area. To apply the proposed approach easily, the area of ACC has been divided into three main areas; the old, middle and eastern areas.

As it is proposed in the suggested approach, the analysis of the study area is the first stage in the improvement process. ACC has been analysed in terms of three dimensional aspects (The heights of built objects, the image of the streetscape,.....), two dimensional aspects (Urban patterns, land uses, the image of the streets network,....), legibility analysis, permeability analysis and analysis of high observation points. The outcome of the analysis helps in understanding all the details of the image of ACC. In order to assess the image of ACC, the extent to what the image of ACC responds to the criteria of legibility, amenity, variety of uses and diversity of views and observations points is determined based on the visual indicators of the area. The assessment of streets network, built objects and public spaces highlights a shortage of certain qualities in the three areas of ACC.

The third stage includes making decisions regarding the required interventions to solve the already determined problems. This process begins with the proposed vision to make ACC legible, accessible, and well connected area through the establishment of more green and walkable streets and linkages between the different quarters in the whole centre. Creation of a distinguished mix of land uses in a beautiful landscape that mixes the old with the new buildings and a comprehensive visual improvement that adapt with the continuous changes of the city form is also included in the vision. The objectives of the proposed improvement have been determined and translated to certain policies which can help to improve the visual appearance of ACC from the street level and from overhead perspective. This part of research suggests a group of improvement interventions which can help to achieve a qualitative image of the study area. Some of these actions consider improving the legibility of the image of squares and focal points such as Al-Mahatah and Al-Magthoob squares. Improving the variety of uses and rezoning the different uses in the area is also suggested. Regarding Al-Qesaryah Street and other pedestrian paths in the area, this approach suggests to improve the legibility, walkability and safety of these paths by creating gates and landmarks, reusing of the old buildings and clearing all the illegal commercial uses in this area. Some commercial and leisure buildings have been

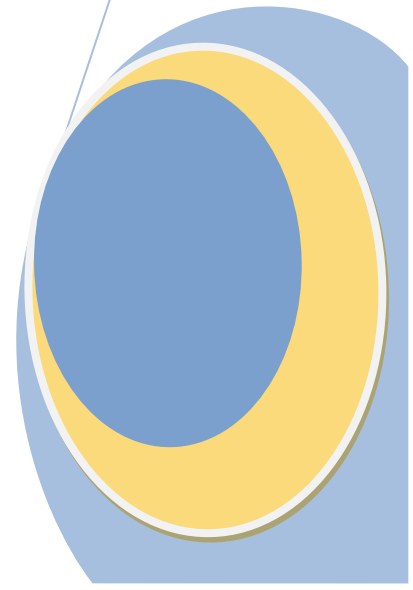
suggested to be added and some roof gardens have been created on the top of low buildings which are overviewed by the surrounding tall buildings.

To activate the public participation in the process of improving the image of ACC, the research suggests to prepare a governmental report or document which includes the illustrations of all the proposed interventions and be available on the governorate website and can be distributed as free printed copies through the cultural centres, the university and the civic buildings.



# *Chapter 7*

**Conclusion: Contributions,  
results and  
recommendations**





# Chapter 7

## Conclusions: Contributions, results and recommendations

### ***7.1 Major findings:***

This thesis confirms that, to produce a holistic and integrated approach for improving the city image, the concept of over-head imaging –as a way of city perception- could not be ignored. Furthermore, this thesis demonstrates that the over-head image of the city has certain properties, types and applications. Such images have a valuable role as a conceptual tool, perceptual tool and as a physical tool in the urban design.

### ***In the process of attaining the research aims, it is found that:***

- The concept of over-head imaging can be utilized as an informative and expressive tool which sends distinctive messages to public observers, urban designers, city planners and city modelling experts. Over-head image can be a helpful tool for assessing the current image of the city and discerning its problems, recording historical changes in the city form, determining the impact of the different urban development projects on the visual appearance of the city, presenting the development plans to the public and using over-head image as a base for city modelling and urban analysis.
- The over-head images; vertical, oblique and horizontal are affected by certain factors related to the observer, height of eye level, timing of vision, climate, the environmental changes and the view angle.
- To understand the image of the city centre in general, this research clarifies the major components of such image and the visual attributes of the observed objects.

This research focuses on the visual attributes which have different meanings when they are observed from over-head

- From analysing many overhead and aerial images, it is found that the most observed objects in such images can be listed as follows:
  - ✚ Regarding the built objects, the forms of the masses and any voids/internal courts within them in addition to their layouts are clearly readable in overhead images.
  - ✚ Regarding the streets network, the movement axes, directions, intersections, destinations are clearer than the streetscape objects.
  - ✚ The outline of open spaces and forms of public nodes are the focus of this views rather than the sense of the enclosure or openness of public spaces.
  - ✚ The textures and colours of roofs and floors catch the eye more than the details of facades, walls, fences and vertical textures.
  - ✚ The large-scale details are perceived before the small-scale details.
  - ✚ The entire height of buildings and their shadows are observed clearly.
  - ✚ Edges either natural or manmade act as visual frame for the image of the city.
  - ✚ Landmarks, which take the central forms or combinations between horizontal and vertical elements, appear more readable than absolute vertical landmarks that have not any base. Moreover, animated landmarks are more readable than static:
  - ✚ Human activities that take place on the top roofs such as social activities in roof gardens, restaurants, libraries and other uses are more obvious in overhead image.
- The partnership approach, sustainability approach and the approach of urban design coding are the main approaches for improving the image of central areas in UK. The partnership approach ensures that public and private sectors are involved in the process of urban regeneration in effective way. Sustainability approach ensures that the proposed development projects meet the needs of the present without compromising the ability of future generations to meet their own needs. While the approach of design coding has a great benefit of making the decisions about

regeneration projects more objective. Three examples of regenerated areas in London, Sheffield and Leeds have been analysed in this part in order to conclude the lessons which can be learnt from each case. Flexibility, adaptation and the good connections between the different responsible are all positive aspects which can be applied in the approaches of urban improvement of Egyptian city centres.

Furthermore, one of the strength points in the urban improvement system in UK is the availability of governmental documents which can be used as urban guidance. The significance of these documents is that they provide the users and urban designers with the important data and prevent any contradictions or conflict between the different responsible organisations.

## **7.2 Research contributions:**

Through the discussion of the main findings of the research, it can be concluded that this research:

- Develops a deep understanding of the concept of over-head imaging and all the theoretical issues around it. This contribution is achieved by the detailed definition of the over-head images, the identification of their types, properties and applications in the field of visual urban design and the clarifications of the techniques of reading such images and the most observed objects which can be observed in the image of the city from over-head. The components of the over-head image of the city centre are determined and how their visual attributes are perceived from high levels of vision are clarified.
- Proposes a comprehensive approach for improving the visual image of the city centre. This approach is different from the already adopted approaches that it incorporates the concept of imaging the city from over-head as a major criterion which can affect the process of image improvement. The presented approach fills the knowledge gap resulting from ignoring the appearance of the urban areas from over-head in the currently used approach for urban analysis, assessment and improvements. The proposed approach introduces the over-head photos as an

effective tool which can be used with other tools such as permeability maps, figure ground diagrams, site survey, virtual and physical models and legibility maps to achieve a multi-perspectives analysis and improvement approach.

The proposed approach does not use the over-head photo as a physical tool only but it goes forward to consider the concept of over-head imaging of the city centre during the analysis, assessment and improvement stages.

This investigation reviews the adopted urban analysis and assessment approaches to determine to what extent these approaches take into account the visual image of urban areas from over-head. It is found from various examples that most urban analysis and assessment approaches focus on studying the urban areas from the street level and most maps and photos which are used are drawn or captured from the human-eye perspective. The concept of over-head imaging has no obvious effect on the already used urban analysis and assessment approaches.

The proposed assessment approach includes the identification of the performance indicators of each component against certain criteria. These indicators can be positive or negative. The image assessment is drawn depending on these indicators in order to put hand on the urban and visual problems of the city centre.

The proposed approach for improving the image of the city centre starts with understanding the changes of the perceptual field to introduce the demanded criteria. Then these criteria should be translated and applied through planned actions or proposed interventions to achieve a qualitative image. Here the focus is on the criteria that related to the quality of the image of the city centre and how these qualities can be improved by controlling the parameters of each criterion. These criteria are imageability and legibility, liveability, visual comfort and amenity, visual permeability, variety, order, coherence and linkage.

- Investigation of the concepts and approaches of improving the British City Centres.
- Applies the proposed approach to the visual image of Assiut City Centre as a study area.

### **7.3 Recommendations:**

*A number of recommendations are suggested by the present research as follows:*

- This research is based on the general recommendation that the central areas should be promoted as attractive places in which to live, work and to visit. To achieve this aim, it is recommended that the observer should understand the physical components of the city image, the visual attributes and other characteristics that give the central district its unique identity. Therefore incorporating the over-head image as a method of city perception not as just a physical tool in the urban analysis and master planning processes is very crucial. Understanding from where and how this over-head perspective can happen is an important concept in improving the image of the city centre in terms of the location of high buildings, the utilization of rooftops, the optimisation of aspect and prospect and other parameters which affect the visual appearance of the city. It is recommended here that, the methods of urban design should adapt to the recent changes in the techniques of city imaging and perception. Based on this principle, the approaches of regenerating the city image should be developed to consider the integration between different methods of viewing the city.
- The general structure of the city should respect the hierarchical concept in planning its areas and centres.
- It is recommended that the tools and techniques of analysing urban sites should adapt to the changes of the methods of city perception. Incorporating the concept of over-head imaging in the process of urban analysis in terms of tools and procedures should not be ignored. To achieve comprehensive visual analysis, the analysis of roofscape, streets and open spaces which are overlooked by high buildings should be considered.
- To achieve a comprehensive urban analysis, the visual analysis should extend to include the analysis of the over-head perspective of buildings and architectural elements. It is helpful to take some photos of the study area from high levels of multi-storey's buildings to explore the problems of the fronts, backs and the roofs of the buildings. The landmarks should be also analysed from both street levels and

over-head levels. The visual study should focus on four aspects; *3D urban analysis, 2D urban analysis, rooflines/skyline visual analysis and study of the architectural details which give an area much of its special character.*

- Over-head and aerial photos are recommended to be used as a base to illustrate the five parts of the image of an urban area. These images can be used either to study each part individually or/and the five parts in one set to understand the relationship between them. It is very helpful to use the over-head image images in a layered system to illustrate the different objects of the city. The base layer should show the all five objects (Paths, edges, districts, nodes and landmarks). Then each layer of the other five layers should analyse one object or part of the image of urban area. This system of layers could be used horizontally or vertically.
- The urban assessment process should be based on using urban design criteria as constants and evaluating the indicators of each criterion as variables. This means that the same design criteria can be used for different urban environments to make the process more objective but the indicators of each criterion are different according to the urban nature of each area.
- Applying the partnership, sustainability, planning as debate and urban design coding approaches for improving the area of city centre is recommended.
- While the adopted conceptions in many literatures focus on the technical, architectural, structural and economical distinction of tall buildings, their visual impact should be studied with more concern. The locations of tall buildings and the distances between them have a significant effect on the quality of the city centre image. Such buildings should be utilized visually to gain the most benefit from the surrounding views, prospects, panoramas, important local views, significant views of skyline and the overall townscape to enhance the legibility of the city image. Regarding the visual attributes of high-rise buildings, the best tall buildings attend to the human scale at the bottom and locate the most distinctive visible composition at the top.

- The creation of a High Buildings Map for the whole city which would control where tall buildings would be permitted is recommended. because this map is an effective tool to achieve the protection of skyline and the important views. This map should consider the effect of tall buildings on the view of general skyline and on a pre-determined listed buildings and views.
- Designation of important views to create a list of strategic views or conservative views by the same way of identifying the listed buildings and conservation areas are strongly needed. Moreover, construction of tall buildings which threat these views by blocking them partly or completely should not be permitted. Any satisfactory heights policy should consider the maintenance of perception and views across the wide profile of the city as a primary consideration. The historic skyline should be maintained to still be recognizable (Hartley and Taylor, 2009).
- Regarding the lightening of the streets, the soft materials and bright colours which allow much light reflection should be used to enhance visibility. Regarding lighting the buildings, lighting the corners is recommended rather than illuminating the whole buildings because by this way, the nodes and squares become more recognizable and these illuminated corners serve as visual gates for streets and squares. Moreover, it is not preferred to light all the building's floors by the same way. The ground levels need to be bright to contribute in lighting paths and to highlight the uses of ground levels of buildings. The upper levels of the building need to be lighted to confirm the height and the roof outline of the mass when it is observed from high levels. In addition, roofs which are used for particular activities should be illuminated at night to advertise these uses in the night images.
- Landmarks should be observed through open views and from distant location of observation. To achieve this aim, the surrounding spaces and view corridors should be studied. Furthermore, reinforcing the image and function of landmark by adding sensory input such as sound or motion can help to create a stronger cognitive map of landmarks. The use of high vertical abstract landmarks is not preferred in modern cities because they lose their visual dominance when they are observed from high

levels of vision. It is recommended that, the landmark should be deconstructed into multiple objects which construct a readable visual composition from above. The mix between the horizontal and vertical objects is recommended more than the use of abstract vertical landmarks.

- The use of roof gardens is recommended because urban roof gardens are created to make the best use of the spaces on roofs and to incorporate more liveable space to cityscapes. Such garden can improve the function and the liveability of the overhead image of the city.

Locating roof gardens on the top of low buildings which are surrounded by tall buildings is strongly recommended in terms of safety, accessibility and the visual function as a view for the surrounding buildings. Shading the roof garden partially or completely is recommended to improve the sense of thermal comfort and privacy. The design of artificial lighting for these roofs is crucial to improve the visibility and safety at night and to encourage various human activities to take place on these roofs. It is recommended to create smooth links between the ground and the top roofs of low buildings in order to improve the visual and physical accessibility from the street level, connects the roofscape with the urban context and softens the edges of buildings.

- The hierarchical system of public spaces should be applied to improve the sense of order and coherence.

#### **7.4 Future work:**

The presented research is considered as an initial step to develop the concept of overhead imaging which can be extended in the future to include improving the image of the residential districts instead of the central areas. Future work can develop the present research by conducting the relationship with stakeholders to evaluate the applicability and usefulness of the proposed approach in order to improve the visual appearance of the city centre. CityCAD as a commercial software can be used in order to create virtual models for the central areas and examine their visual quality before and after applying the proposed approach.



## Related Publications

- Ahmed, L. & Bush, J. & Radwan, M. and Abdelmagid, K. (2011) Conceptualizing the Perceptual Changes of City Imaging and their Impact on Urban Design. The Second International Conference on the Image, Kursaal Congress Palace, San Sebastian, Spain from 26-27 September 2011.
- Ahmed, L. & Bush, J. & Radwan, M. and Abdelmagid, K. (2012) Conceptualizing the Perceptual Changes of City Imaging and their Impact on Urban Design. The International Journal of the Image ,Common Ground Publishing LLC, Champaign, Illinois, USA, Vol. 2, Issue 2, pp. 211-240
- Ahmed, L. & Bush, J. & Radwan, M. and Abdelmagid, K. (2011) Rethinking of The Image of The Hyper-Visual Contemporary City From A New Perspective. Poster session presented at the Research Festival, University of Huddersfield, Huddersfield, UK (The poster has the award of being the best poster of School of Art, Architecture and 3D Design, Department of 3D Deign)



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# ***Arabic Summary***



# Arabic Summary

## الملخص العربي

### تضمين المنظور العلوي للمدينة

### في منظومة تطوير الصورة البصرية لمنطقة مركز المدينة

### (مركز مدينة أسيوط كدراسة حالة)

إن التطور الهائل الذي يشهده مجال التصوير الجوي واستخدامه في التعرف على المدن الهامة ومعالمها المعمارية والعمرانية قد أضاف طريقة جديدة لإدراك المدينة من خلال منظورها العلوي. هذا بالإضافة إلى الانتشار الواسع للمواقع المرتفعة التي تُتيح إدراك المدينة من مستويات رؤية تبعد عن مستوى الشارع. هذه المواقع تتمثل في المباني العالية والأبراج والكباري العلوية ووسائل المواصلات المتحركة على مسافة مرتفعة من الأرض وغيرها من نقاط الرؤية المرتفعة التي هي سمة أساسية من سمات المدينة المعاصرة الممتدة رأسياً. كل هذه العوامل وغيرها أبرزت مفهوم النظرة الفوقية وأهميته كعامل مؤثر لا بد أن يُؤخذ في الاعتبار عند مراحل التحليل والتقييم والتطوير الحضري والبصري للمناطق العمرانية.

تتمثل إشكالية البحث في تجاهل الصورة البصرية الفوقية للمدينة وعدم أخذها في الاعتبار كعامل مؤثر في برامج تطوير الصورة البصرية لمنطقة مركز المدينة والتركيز فقط على منظور عين الإنسان أو المنظور المأخوذ من مستوى الشارع هذا بالإضافة لعدم التكيف مع التغيير الذي طرأ على طريقة إدراك المدينة وأدى إلى ظهور مفهوم إدراك المدينة من خلال منظورها العلوي. هذا المنظور العلوي له خصائص معينة من أهمها اتساع مجال وزاوية الرؤية مما يتيح ظهور مشاهد بصرية قد يتعدى رؤيتها من مستوى الشارع وبالتالي لا يتم أخذها في الاعتبار عند إجراء عمليات التطوير العمراني المختلفة. ومن أهم هذه المشاهد ما يتعلق بالأسطح الأفقية وهي الأكثر وضوحاً في المنظور العلوي للمدينة مثل الأسطح العلوية للمباني والأرضيات المختلفة التي تضمها المناطق الحضرية. وتعاني معظم البرامج والمشاريع التطويرية لمنطقة وسط المدينة بشكل عام من التركيز على النواحي الاقتصادية والوظيفية مع عدم الأخذ في الاعتبار النواحي البصرية مما أدى إلى تدهور الصورة البصرية لمراكز المدن.

يتضح مما سبق ضرورة إدماج وإدراج مفهوم إدراك المدينة من مستويات مرتفعة كأحد الاعتبارات الواجب مراعاتها عند تطوير الصورة المرئية لأي منطقة عمرانية في المدينة. وتركز الرسالة على منطقة وسط المدينة باعتبارها أكثر المناطق أهمية في المدينة فهي تخضع للعديد من الإجراءات التطويرية لجذب أكبر عدد من المستثمرين لها. وقد تم اختيار منطقة مركز المدينة بالتحديد لأنها تضم معظم الأنشطة البشرية الهامة والنقاط المركزية للنقل والمواصلات وشرايين الحركة الرئيسية كما تضم عدداً كبيراً من الأبراج العالية ذات الإستعمال المختلط كما أنها قد تمثل في بعض المدن المركز التاريخي والأثري للمدينة. يهدف البحث إلى تحقيق المفهوم الشامل للتطوير البصري والذي لا يقتصر على



منظور معين دون غيره. يقدم البحث إجابة للسؤال البحثي المحوري وهو: كيف يمكن إدراج مفهوم المنظور العلوي في عملية تطوير الصورة البصرية لمنطقة مركز المدينة؟ هناك أسئلة ثانوية يقوم البحث بوضع إجابات لها للمساعدة في فهم الخلفية النظرية لمفهوم النظرة الفوقية للمدينة من حيث خصائصها و أنواعها وتطبيقاتها في مجال التصميم الحضري. وحتى يمكن توظيف المنظور العلوي بشكل صحيح في برامج التطوير يتناول البحث طريقة قراءة المدينة من أعلى وما هو التغيير الذي يطرأ على الخصائص البصرية للعناصر المرئية عند رؤيتها من ارتفاعات عالية.

بالرغم من أن هناك العديد من الأبحاث التي تناولت الصور العلوية للمدينة وخاصة الجوية منها فإن هذا التناول اقتصر فقط على أهمية هذه الصور كوسيلة مادية تُمد المُصمم الحضري بكمية هائلة من المعلومات عن المناطق التي تحتاج إلى التطوير ولكن لم يتم تناول التطبيقات الأخرى التي يمكن توظيفها فيها أثناء مراحل التحليل والتقييم والتطوير العمراني لمنطقة مركز المدينة ولذلك فقد حاول البحث سد الفجوة البحثية التي تم رصدها وذلك بتناول مفهوم النظرة الفوقية كوسيلة لإدراك المدينة أكثر من كونها مجرد وسيلة مادية يلجأ إليها المصمم الحضري أثناء مراحل التصميم أو التطوير. يسهم البحث في تكوين خلفية نظرية تساعد في فهم مفهوم إدراك المدينة من منظورها العلوي والموضوعات المتعلقة به. ويسهم البحث باقتراح منهجا شاملا يقوم على تضمين المنظور العلوي للمدينة في عمليات التحليل البصري والتقييم واستنتاج مشاكل الصورة المرئية ووضع خطة للتطوير لمنطقة مركز المدينة. وحتى يكون لهذا الإسهام صدى في الواقع العملي فإن البحث يقوم بتطبيق منهجية التطوير المقترحة على منطقة الدراسة وهي منطقة وسط مدينة أسيوط بهدف تطوير صورتها البصرية سواء كانت من منظور عين الإنسان أو المنظور العلوي.

تم من خلال هذه الرسالة تطبيق المنهج الوصفي والتحليلي والعملي لتحقيق الهدف من البحث والوصول لنتائج منطقية يمكن الاستفادة بها وتطبيقها في المشاريع المستقبلية. وتتكون هذه الرسالة من سبعة أبواب:

#### • الباب الأول: المقدمة: الخطة البحثية والدراسة المرجعية

يتناول الباب الأول خطة البحث وما يشمله من فرضيات ومنهجيات مستخدمة وأهداف وأسئلة بحثية.

#### • الباب الثاني: مقدمة عن مفهوم المنظور العلوي للمدينة

يوضح الباب الثاني مفهوم النظرة الفوقية للمدينة وهو يجيب عن السؤال الأول من الأسئلة البحثية الثانوية وهو: ما هي أهمية مفهوم المنظور العلوي للمدينة وما هي أنواعه وتطبيقاته في مجال التصميم الحضري بصفة عامة؟ من خلال شرح خصائص المنظور العلوي والفرق بينه وبين منظور عين الإنسان والتطبيقات المختلفة له وكيف يمكن استخدامه ليس فقط كوسيلة مادية مثل الصور الجوية والعلوية ولكن كوسيلة لإدراك المدينة الممتدة رأسيا وأفقيا. يركز هذا الباب على فهم المنظور العلوي كوسيلة إدراك تضيف أبعادا ومتطلبات جديدة لعملية تصميم وتطوير مركز المدينة بحيث يمكن توظيفها لتوجيه انتباه مستعملي المدينة للصور البصرية الإيجابية بها.

#### • الباب الثالث: الصورة البصرية لمركز المدينة: مكونات وخصائص بصرية

يركز الباب الثالث على تناول منطقة مركز المدينة وبيان أهميتها مقارنة بالمناطق الأخرى في المدينة. يتم في هذا

الباب عرض مكونات الصورة البصرية لمركز المدينة بشكل عام استناداً على تعريف كيفن لينش ( Kevin Lynch) للمكونات الخمسة الأساسية للصورة البصرية للمدينة وهي المسارات والقطاعات والميادين والحواف والعلامات المميزة مع بيان الاختلاف في الخصائص البصرية للمكونات المرئية في حالة رؤيتها من ارتفاعات كبيرة او عندما تخرج من نطاق منظور عين الانسان. هذا الباب يقدم إجابة للسؤال البحثي الثاني وهو: ما هي العناصر المرئية الأساسية المكونة للصورة العلوية وما هي خصائصها البصرية وكيف يمكن قراءتها من ارتفاع يزيد عن نطاق منظور عين الإنسان؟

#### • الباب الرابع: التجربة البريطانية في مجال تطوير الصورة البصرية لمراكز المدن

يتم في الباب الرابع تناول أهمية الاستفادة من التجارب العالمية والبرامج المطبقة في الدول المتقدمة لتطوير الصورة البصرية لمراكز مَدُنِها ، وهنا يتم التركيز على التجربة البريطانية عن طريق تناول أمثلة لمراكز المدن البريطانية مثل ليدز (Leeds) ولندن (London) وشيفيلد (Sheffield) لتوضيح المنهجيات والمفاهيم المتبعة لوضع الاستراتيجيات العامة لهذا التطوير والأطراف المشاركة فيه سواء من جهات حكومية أو من القطاع الخاص أو من المستعملين للمنطقة محل التطوير. لذا فإن هذا الباب يقدم إجابة على السؤالين البحثيين الثالث والرابع والذان يتناولان تحديد إلى أي مدى يتم مراعاة مفهوم المنظور العلوي في البرامج والخطط المطبقة والمستخدمة فعلياً في تطوير الصورة البصرية لمراكز المدن وما هي الدروس المستفادة من التجربة البريطانية في هذا المجال.

#### • الباب الخامس: تضمين مفهوم المنظور العلوي في عملية تطوير الصورة البصرية لمنطقة مركز المدينة – منهج مقترح

يستعرض هذا الباب تفاصيل المنهج المقترح لتطوير الصورة البصرية لمنطقة مركز المدينة والذي يعتمد على الشمولية في عملية التطوير عن طريق إدراج مفهوم المنظور العلوي كوسيلة لإدراك المدينة في المراحل الثلاثة الأساسية للتطوير. هذه المراحل تبدأ بالمفهوم الشامل للتحليل الحضري للمناطق العمرانية من حيث الطرق والأدوات والتقنيات المستخدمة فيه. والمرحلة الثانية هي عملية التقييم الحضري وهي ثاني مرحلة في منظومة تطوير أي منطقة عمرانية حيث تنقسم طرق التقييم لنوعين فهناك الوسائل الموضوعية للتقييم التي تستند لنتائج دقيقة و معايير موحدة تُظهر مستوى الأداء الحضري للمنطقة وهناك الوسائل الغير موضوعية وهي التي تستند لأراء المصممين والمخططين القائمين على عملية التقييم. أما المرحلة الأخيرة فهي عملية التطوير والتي تشمل على بعض القرارات المبنية على نتائج المرحلتين السابقتين. ينتهي المنهج المقترح بتقديم بعض الاعتبارات التصميمية والخطوط الإرشادية الخاصة بالمباني المرتفعة وتوزيعها واختيار مواقعها كذلك التوصيات الخاصة بإضاءة المدينة وتصميم العلامات المميزة والتي تؤدي إلى تحقيق صورة مرئية لمركز المدينة ذات جودة بصرية عالية سواء من مستوى الشارع أو من المستويات الأعلى منه. وبذلك يكون هذا الباب قد أجاب على السؤالين الخامس والسادس من الأسئلة البحثية. السؤال الخامس هو: ما هي أهم المناهج المستخدمة فعلياً في تحليل وتقييم الصورة البصرية للمناطق الحضرية؟ أما السؤال السادس هو: كيف يمكن تضمين أو إدراج مفهوم إدراك المدينة من أعلى في مجال تطوير الصورة البصرية لمراكز المدن؟

• **الباب السادس: مثال تطبيقي: تطوير منطقة مركز مدينة أسيوط**

يتحول هذا الباب إلى المنهج التطبيقي حيث يستخدم البحث مركز مدينة أسيوط كدراسة حالة. هذا الباب يهدف للتعريف بمنطقة الدراسة وحدودها المكانية الحالية وأسباب اختيار هذه المنطقة لتكون محل الدراسة. يقوم الباب السادس أولاً باقتراح حدود جديدة لمنطقة مركز مدينة أسيوط تقوم على أساس عمل امتدادات للمنطقة الحالية لزيادة مساحتها وتضمينها استعمالات إضافية ترفع من كفاءتها وتجعلها منطقة شاملة للخدمات والأنشطة المختلفة. يلي ذلك القيام بعملية تحليل شامل لمنطقة وسط مدينة أسيوط من خلال تطبيق منهج التحليل البصري الذي تم اقتراحه في الباب الخامس وذلك بهدف فهم الإمكانيات المتاحة في المنطقة وأيضاً المشكلات العمرانية المختلفة التي تحتاج لوضع حلولاً لها. يمتد البحث ليضع مقترحاً تفصيلياً لتطوير منطقة وسط مدينة أسيوط. يتناول هذا الجزء عناصر وأهداف ورؤية منهج التطوير والسياسات العامة المقترحة لتطوير الصورة البصرية لمنطقة الدراسة من مستوى الشارع ومن المستويات الأكثر ارتفاعاً وذلك في ضوء النتائج المستخلصة من الباب الخامس ومن التحليل الشامل للمنطقة الذي تم إجراؤه في بداية هذا الباب.

• **الباب السابع: الخلاصة: الإسهامات والنتائج والتوصيات**

يقوم هذا الجزء من الرسالة بتوضيح إسهامات البحث كما يقدم أهم النتائج التي تم الوصول إليها والتوصيات والمقترحات التي يجب أخذها في الاعتبار عند تطوير الصورة البصرية لمنطقة وسط المدينة سواء من مستوى منظور عين الإنسان أو من مستويات أعلى للرؤية.

من خلال الأبواب السبعة للرسالة يكون قد تم تطبيق كلاً من المنهج النظري والعملية للإجابة على الأسئلة البحثية المطروحة في خطة البحث و باستخدام عدداً كبيراً من الصور والجدول والمخططات لتدعيم وتوضيح الأفكار والنتائج البحثية. كما تم استخدام البرامج والتطبيقات المختلفة للحاسب الآلي في مختلف أجزاء الرسالة مثل:

Google Earth, Visio, Excel, Corpus Concordance English and Endnote



كلية الهندسة بأسوان  
قسم الهندسة المعمارية



جامعة هدرزفيلد  
كلية العمارة والفن والتصميم  
قسم العمارة والتصميم ثلاثي الأبعاد

## تضمين المنظور العلوي للمدينة في منظومة تطوير الصورة البصرية لمنطقة مركز المدينة (مركز مدينة أسيوط كدراسة حالة)

### رسالة دكتوراة

قسم الهندسة المعمارية - كلية الهندسة بأسوان - جامعة أسوان

مقدمة من:

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بكالوريوس الهندسة المعمارية - كلية الهندسة - جامعة أسيوط - 2000  
ماجستير الهندسة المعمارية - كلية الهندسة بأسوان - جامعة جنوب الوادي - 2004

ديسمبر 2014

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كلية الهندسة بأسوان  
قسم الهندسة المعمارية



جامعة هدرز فيلد  
كلية الفن والتصميم والعمارة  
قسم العمارة والتصميم ثلاثي الأبعاد

تضمين المنظر العلوي  
في منظومة تطوير الصورة البصرية لمنطقة مركز المدينة  
(مركز مدينة أسيوط كدراسة حالة)

رسالة دكتوراة

مقدمة من:

**مهندسة/ لبنى محمود مبارك أحمد**

مدرس مساعد بقسم الهندسة المعمارية - كلية الهندسة بأسوان - جامعة أسوان - أسوان - مصر

ديسمبر 2014