

## The application of Feng Shui in the design of contemporary architecture and its environment<sup>1</sup>

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### **ABSTRACT:**

This research discusses a scientific vision about the natural components of the environment and its effect on the urban environment and human in particular, all this will be discussed within the framework of an ancient discipline known in China as the art to determine the best conditions for the construction of buildings or development of cities, called "Feng Shui". It is a practical technique, designed to find the right place, good direction, good shape, good proportion and good arrangement for designing the best environment in which to live. "Feng Shui" is a means of assessing the environment and provides the techniques for local construction according to the particularities of each place. Its long history has enabled it to be considered as a science rich of knowledge and concrete ways of working. This is a technique that takes action based on local conditions, including geographical conditions, climate, habits and customs of the people, culture but also the expertise in construction.

The case study of this research is the high rising buildings in Haifa street to be assessed according to its relationship with the site and other characteristics of the area in the large scale and then the effect of the transportation and the road system that leads to it and its relationship with the surrounding areas especially the organic neighborhoods behind, finally the study discusses the height and shape of the buildings according to the principles of "Feng Shui", and at the end the study suggests proposals for the better exploitation of the environmental component to achieve the sustainability that we all need.

<sup>1</sup>World Conference first place in the University of Technology / Architectural Engineering



## 1- Introduction

Urban environment reflect in architecture and urban design for the way in which buildings are formed by the elements and gather with neighbors. This indicates a problem in the urban environment today by losing much of its characters. The primary purpose of Feng Shui is to build with the flow of the land. This means development maintains and follows the natural environment. Studies indicate that the use of this principle increases comfort. Lowers costs, and reduce the need for artificial heating and/or cooling and irrigation. It diminishes or eliminates revenge effects.

Feng Shui stipulates that where the natural world has been destroyed it should be restored. Feng Shui principle express the need for harmony with local conditions and resources.

The development project does not stop at property lines. We must think about the interconnectedness of the world - that is the essence of sustainability and of Feng Shui, the original science of environmental protection.

## 2- Feng Shui

Feng Shui is initially a method of surveying terrain to select and construct a site, such as a village, cemetery, and soon. Scientific Feng Shui, which involves in astronomy, geography, environment, construction, gardens, ethics, psychological, measurement, esthetic, as well, is a theory about environmental planning which is widely used in ancient architectural and urban construction. Contemporary Feng Shui introjects the environmental philosophy, environmental economics, landscape planning method about architectural environment, environmental ecological science, and so on, to realize the harmonious state and to guide the urban construction at a certain extent

[1].

## 2-1 Recent Studies

There has been much written on the subject of "Feng Shui," and healthy housing since approximately 1986. This study limits itself to the most recent or significant studies and the most available literature since that time. Since so much has been written within the last thirty years, it is nearly impossible to report on every article and book published on this topic, so the researcher has selected the most comprehensive aspects of the literature pertinent to the purpose of this thesis.

### **Mirkine, A., Healing Environments: Physical, Spiritual, Emotional And Psychological Factors In Architecture That Promote Health, 1996**

The purpose of this study is two-fold. Its first mission is to explain the elements of architecture and architectural design which contribute to "sick building syndrome" (SBS) and "multiple chemical sensitivity" (MCS) that result from toxic chemicals in the environment, and to show how necessary it is to avoid them and to correct the present situation in architecture.

The second mission of this study is to discuss the elements of architecture and the built environment that can inspire, create and maintain health. This includes using non-toxic, recycled, renewable, and sustainable materials, observing the spiritual energies of place through Feng Shui and considering the psychoemotional issues of the occupants. Chapter 2 includes a description of some of the literature on Feng Shui, power of place, psychology of place, aesthetics and sensory needs, health and safety, and the immune system and its resistance to environmental pollution.

The hypothesis is that people living in environments considered to be healthy, both physically, emotionally, and spiritually, would get sick less often and get well more often than people living in

the more toxic traditional environments.

This research brings together and synthesizes the elements required to create spaces that promote life and wellness. Chapter 4 analyzes the findings and presents a coherent and thorough guideline to follow when designing a healthy home, office, or healthy space of any kind while Chapter 5 includes a summary and discusses implications for further study.

This study has brought to light a number of tradeoffs and contradictions to building healthy spaces. Availability of materials, building codes, and cost effectiveness are some examples, but this study does not attempt to discuss or resolve these issues.

**Xu, J., A Framework For Site Analysis With Emphasis On Feng Shui And Contemporary Environmental Design Principles, 2003**

This research proposes a new site analysis methodology in the form of an integrated framework. The framework separates the site analysis process into different models, incorporates each model, and considers the interaction between them. The most important models are the environmental models, social-cultural models, economic models, and infrastructure models. Each model also contains several important factors.

The study identifies and organizes environmental factors within the framework that influences site analysis and design. Based on the applicability of Feng Shui principles and their interpretations into measurable factors, this research compares and incorporates Feng Shui and contemporary environmental design theories, and summarizes essential environmental factors. The emphasis on environmental factors from these models may lead to a better understanding of the relationships between humankind and the natural environment.

**DINH, H., Feng Shui Application And Modern Landscape Design For**

**Architectural Practice In Viet Nam, 2006.**

This research studies an approach to resolve the conflict between architects and Feng Shui masters by studying Feng Shui applications and modern landscape design for architects.

The objectives are: 1) to determine and empirically test the compatibility of Feng Shui applications and modern landscape design techniques; and 2) to provide appropriate recommendations for architects practicing in Viet Nam where Feng Shui is in demand.

In the study, Feng Shui principles and modern landscape design techniques were examined to identify possible matching pairs and demonstrate compatibility in applications. For each pair, the selected Feng Shui principle will be used to produce questionnaire questions that included landscape layouts designed with different levels of Feng Shui application. The solutions were then

ranked by two hundred architects and architectural students in Hué, Viet Nam. The resulting ranks were then compared with the ranks assigned by Feng Shui applications.

The results reveal that, from the eight matching pairs of Feng Shui principles and modern landscape design techniques, the patterns of ranked solutions by architects and students correlate well with those assigned by Feng Shui applications.

The findings concluded that there are compatibilities in the objectives and applications that can lead to two practical recommendations: 1) an architect can collaborate with a Feng Shui master during the design process to produce a collaborative solution; and 2) an architect can learn basic physical applications of Feng Shui principles and use this knowledge in the practice of landscape architectural design to achieve both Feng Shui and modern design requirements.

**Feng Shui is based on the relationship between human and environment and as long as human is the same everywhere, environment became the variable which needs to be examined**

and studied and also is what will effect positively or negatively on human's life.

Many studies have been made on the subject of site planning and building according to the basics of Feng Shui in many eastern and western parts of the world while there is no special study about Feng Shui application in Iraq.

First we need to abbreviate the basics of Feng Shui to be able next to analyze the environment of the case study according to them.

**2-2 Basics of Feng Shui**

To understand the Feng Shui applications, it is worth exploring some basic understandings of Feng Shui which are Chi, Yin and Yang, the Five Elements and their cyclical interactions.

**Chi**

Chi (Chi is pronounced 'chee' in English) is a basic principle of Feng Shui, means life energy or air circulation. Chi is categorized into Living Chi and Dead Chi. Living Chi is warm, active, and infuses life with energy. It is manifested by the existence of verdant plants, grassy shrubs, meandering streams, crowded residential areas, wealthy commercial districts or where healthy animals enjoy life [2].



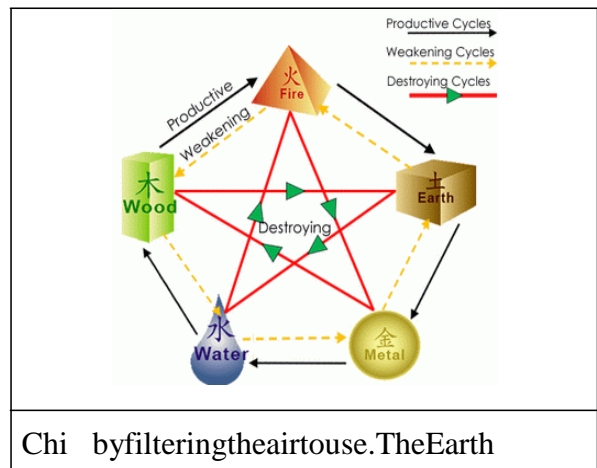
Figure 1 symbol of Yin-Yang

Yin-Yang reflect the natural way or the endless rhythm of the universe [3]. They also symbolize the notion of balance. It is believed that Chi in the universe is produced by changing but in balance

In contrast, Dead Chi is cold and still, signifying cessation of life. Visually it takes the form of sandy desert, desolate highland, arid soil, fetid water, worm-eaten plant, or withered trees. eaten plant, or withered trees.

**Yin-ang**

Yin-Yang are complementary opposites; one cannot exist without the other. For example, without cold, the concept of 'hot' does not exist; without life there is no death. They can be understood as continual change and balance, which are represented in the symbol of Yin-Yang (Figure 1). Yin-Yang symbolize the notion of continual change. Yin exists within Yang, and Yang exists within Yin in acyclical conjunction. element can be found in the form of Mountain, Earth tones, and colors of yellow or brown. Five Elements is an alternate method to manifest Chi. These different elements react to each other both in positive and negative ways. When combined positively, they create Living Chi. When combined negatively, they create Dead Chi. The combination of Five Elements is aimed to achieve the harmony of Feng Shui.



between Yin-Yang. In other words, Yin-Yang can be used to manifest Chi. Too much Yin qualities, it produces Yin Chi; too much Yang qualities, it produces Yang Chi. But if it is too much Yin Chi or Yang

Chi, it becomes unbalanced, and creates Dead Chi. To achieve Yin-Yang, it requires a balance in stillness and movement, unity and variety, objective and subjective reactions.

### Five Elements and two cyclical interactions

In ancient belief, the cosmos comprises Five Elements namely Metal, Fire, Water, Wood and Earth (Figure 2). The Metal element can be found in the form of coins, silver, gold, steel and bronze, the colors of white, silver, or gold. The Fire element can be found by actual fire or the color red. Fire is useful in appropriate proportion, if it is out of control it becomes destructive. The Water element can be found by the colors blue or black. The key is to keep the water fresh and moving. The Wood element can be found by the color of green or the living plants which can attain the

#### Figure 2-the Five Elements

**The relationship between Yin/Yang or between the five elements is judged good or bad according to creating Living Chi or Dead Chi which means that the purpose of all Feng Shui basics is the first and essential basic (Chi) which is life energy that affects human's life.**

### 2-3 Feng Shui and Environment

Because Feng Shui is applied on a case-by-case basis, every factor should be considered in the context with others [4].

There are two major applications of Feng Shui: site selection of buildings and sites for human settlement. Whether the person searching for a site is an emperor or an ordinary person, the surrounding environment and its effects on housing are very important [5].

Many principles of Feng Shui are found fitting well into the framework of modern science [6].

1- Principle of integrity. A great emphasis

is given to the environmental integrity in Feng Shui practice. It means to consider the microenvironment in the context of the macro environment.

- 2- Principle of Adoption. Adoption of architectural measures suitable for different natural surroundings.
- 3- Principle of attachment to mountainous terrains and vicinity to water sources for good sunlight condition, good admission of summer breeze, good shielding of winter currents, good sewage system, the advantage of water-soil maintenance and adjustment of microclimate.
- 4- Principle of geological and hydrological preference. Feng Shui theories show a strict and even fastidious choice in quality of earth and water. Feng Shui practitioners believed that different earth and water quality has different impact on human.
- 5- Principle of eclecticism. Eclecticism in Feng Shui means to use everything to attain a certain degree that just ensures a harmony. Furthermore, centralization and uniformity are given emphasis.
- 6- Principle of balance. Feng Shui is ultimately about balance. Balance in one's personal environment will manifest as balance in one's health. Strive for comfortable space that is neither too crowded, too empty, too busy or too still, and in addition to ample natural light, clean air and sense of order, reinforce the intention with an environment that reminds the person consciously and unconsciously of his optimum health.

### 2-4 Features to be analyzed

#### 2-4-1 Site

Sites are analyzed according to the following conditions:

- Power: Expresses the qualitative features of a component of a site in terms of subjective but experiential perceptions of its effects. Rivers,

valleys, and mountains provide powerful nodes and edges. Their immense sizes can be considered strengths.

Street traffic (interpreted as water) can aid some homes and annoy others on the same block.

- Form: communicates qualities of a particular component of the site determined by the shape of buildings, roads, and water features.
- Structure: conveys relationships between geographic and/or built features of an area.
- Condition: expresses relationships between features near a site

### Roads and water features

In Feng Shui, water is regarded as a substance that contains living Chi.

Appropriate use of water in Feng Shui practice is to maximize the function and performance of Chi. Through the thoughtful arrangement in the design, accumulation and delivery of water flows, Feng Shui aims not only to bring living Chi to a settlement but also to the every corner of the site [7].

Good Feng Shui water features most typically consist of aquatic landscape patterns, arrangements of aquatic plants, and areas where ground-water lies near the soil surface. Roads can exhibit the water features. Fast-moving water (or highways), stagnant water (heavy stop-and-go traffic). And precipitous waterfalls cannot be considered good Feng Shui water features.

A meandering stream is a highly stable water course. A narrow, slow-moving street is ideal according to designers and promoters of New Urbanism Movement. Feng Shui stresses comparable principles. The flow must be determined by the speed of traffic and whether traffic keep stop posted speed limits. Identifying whether traffic-calming devices were installed, should be installed, or are being considered.

To analyze the flow of roads, Feng

Shui application use the following rules that pertain to the flow of water:

- Incoming water: this identifies a road or water moving toward a site from the front.
- Outgoing water: this identifies a road or water moving away from a site.
- Gathering water: this identifies an area in front of a site where water or vehicles gather (including cars stopping to drop off shoppers, etc.).
- Horizontal water: this identifies a road moving in front of a site from one side to the other.
- Absent and/or substitute water: there is no road, or a road is needed and missing.

How water exits a site is as important as its entry to a site.

Resolution to problems depend on the particular of a situation. Narrow streets slow vehicular traffic and encourage pedestrian use; this makes a neighborhood hospitable to visitors, children and the elderly (good Feng Shui) sometimes a fast-moving street provides beneficial Feng Shui, but that is a rare occurrence—and a judgment based solely on a case-by-case basis. Residential streets whose broad design encourages speeding create fear, animosity, and heartache in residents—fear for the lives of their children, animosity against those who feel confident enough to use the street as a race track, and heartache in those who suffer tragedy as a result of insensitive design.

We should consider street and water orientation in relation to a site. In some Feng Shui techniques these provide enhancements while in other their orientation is a detriment. The infamous T intersection, like the long and straight water course, can be a force for good if a site is constructed to capitalize on its strengths (usually sites that accommodate the T intersection are large building complexes). A residence facing a straight road, water course, or a T intersection typically meets with trouble because the site cannot

withstand their revenge effects.

### surrounding landscape and environment

Green space system is an important part to optimize the living environment. Plants have not only the function of dust proofing, waterproofing, shading, adjusting the microclimate, beautifying the settlements, but also the Feng Shui performance of collecting wind and airflow [8].

Keeping the environmental quality of local settlement and fully respecting the inherent pattern of surrounding landscape is not only a necessary approach to provide constant protection of Chi and ensure prosperity of the whole nation, but also a necessary condition to maintain the long existence of the whole community. In addition, turning wasteland to be cultivated land and planting trees and crops was an ancient method used by local inhabitants to keep the good condition of living environment in a Feng Shui settlement [9].

And through planting Feng Shui trees at the edge of river and lake to control the movement of water and protect water.

#### Building height and shape

A building has good Feng Shui if: It has been constructed to harmonize with the surrounding terrain. Its shape, height and orientation are compatible with each other.

If a high-rise building is considerably taller than other buildings in the area, it will protrude out of the energy field of its surroundings. It will be overexposed to wind; hence it will not accumulate Chi. So those on the upper floors must be avoided. If the building is lowest in a high-rise area, its Chi will be oppressed, particularly those units on the lower floor. Buildings that are more or less in the same height as others in the vicinity are neither oppressed nor overexposed. Units in the middle floors are the best choice.

Good shapes for buildings are square, rectangular, square with a semi-circle in front.

Bad shapes for buildings are a cross, the letter "H", triangular and irregular buildings that are shaped like a knife.

Many Feng Shui defects in high-rise buildings can be corrected by the use of semi-circular balconies. These balconies can deflect negative Chi from the surroundings. Curved balconies can also correct the sharp corners of a triangular or irregular shaped building. When architects use curved balconies or rounded corners on the exterior of buildings, knowingly or not, they are enhancing the building's Feng Shui.

### 3- The Case study

#### Introduction about the region 3-1-

##### 1 Site information

Haifa Street (or Hayfa Street) is a three km long street in Baghdad, Iraq, paralleling the Tigris river and is one of the famous, main and vital streets in Baghdad in the Karkh district. It was named after Haifa, in the northern part of Palestine.

This street connects the regions of Al-Salhiyah and Al-Utaifiyyah. The street is lined with many high-rise apartment buildings. Three bridges that link Karkh and Rusafa are related to it:

- 1- Bab Al-Muazm Bridge by Al-Tala'e Square
- 2- Al-Shuhada' Bridge
- 3- Al-Ahrar Bridge of King Faisal Square.

There is an art museum and the Radio and Television Iraqi Service (Iraqi Media Network) is located in one of its ends (the part of Al-Salhiyah district).

##### 3-1-2 The development project

The Capital Secretariat in Baghdad, at the beginning of 1980, set up several different projects for the development of Haifa Street. This development, which is located in the center of Baghdad, consists of several buildings housing apartments, office buildings, departments and facilities

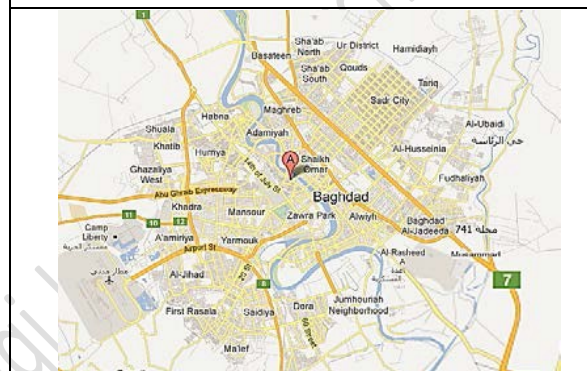
services, and ways ...Etc., which are all designed as parts that complement each other as part of a comprehensive plan to develop the city (Figure 7).

The complex of housing buildings has been built in this street just before the

Islamic Summit Conference in Baghdad in 1981 to be a distinctive facet of the city, and an elite of the Iraqis and foreigners architects and engineers contributed in its designing to be a modern interface to the



**Figure 3-Iraq**



**Figure 4 -Baghdad**



Figure 5-the location of Haifa Street in the center of Baghdad

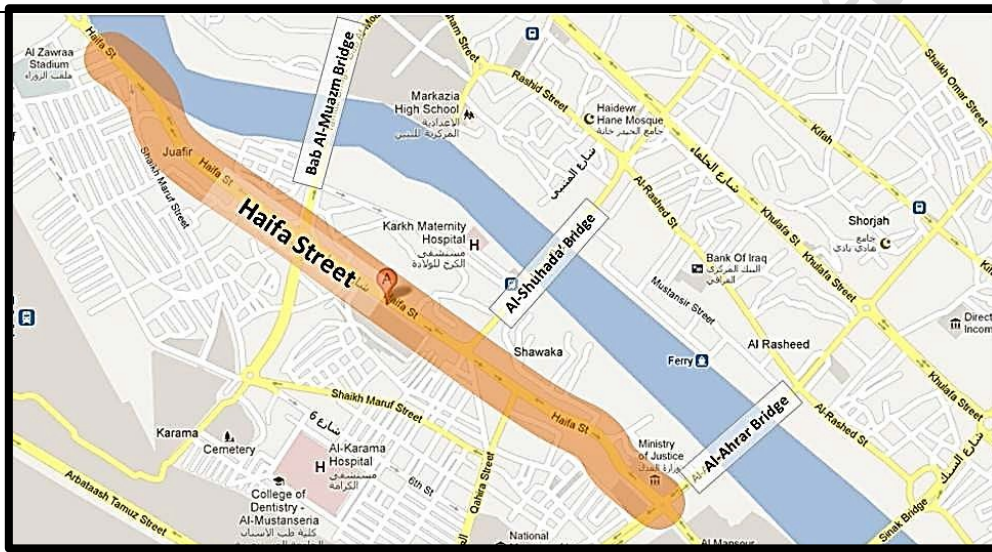


Figure 6-Haifa Street

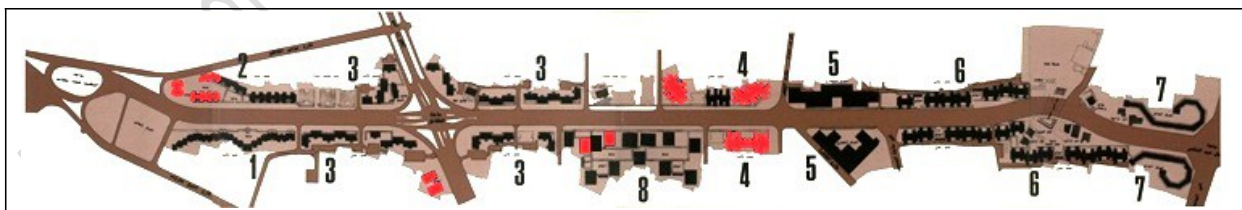


Figure 7 development project of Haifa Street approved by the Capital Secretariat in Baghdad

■ Not accomplished    
 ■ Accomplished    
 (working stopped in part two and part four)

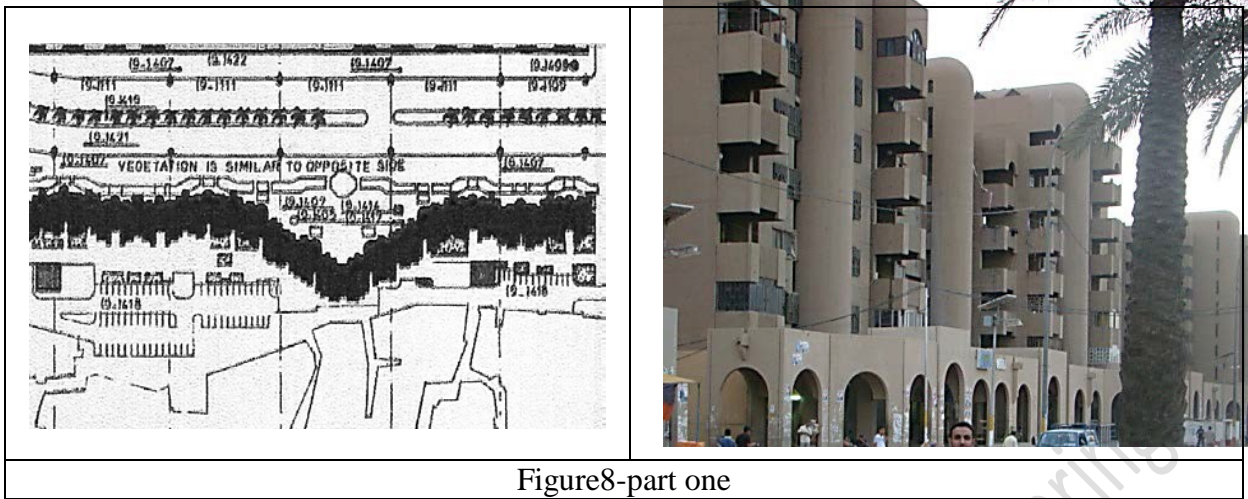


Figure8-part one

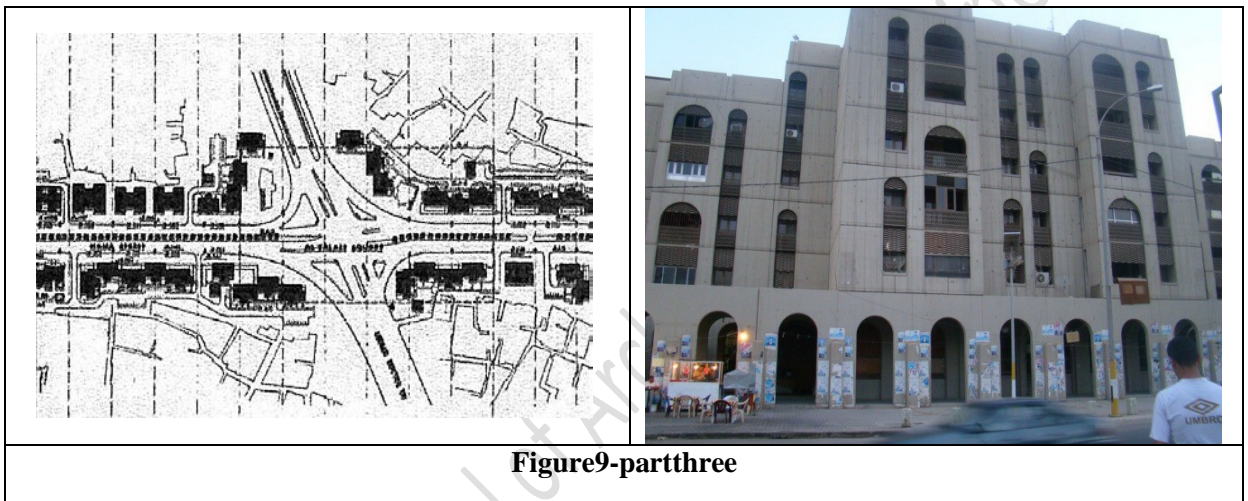


Figure9-partthree

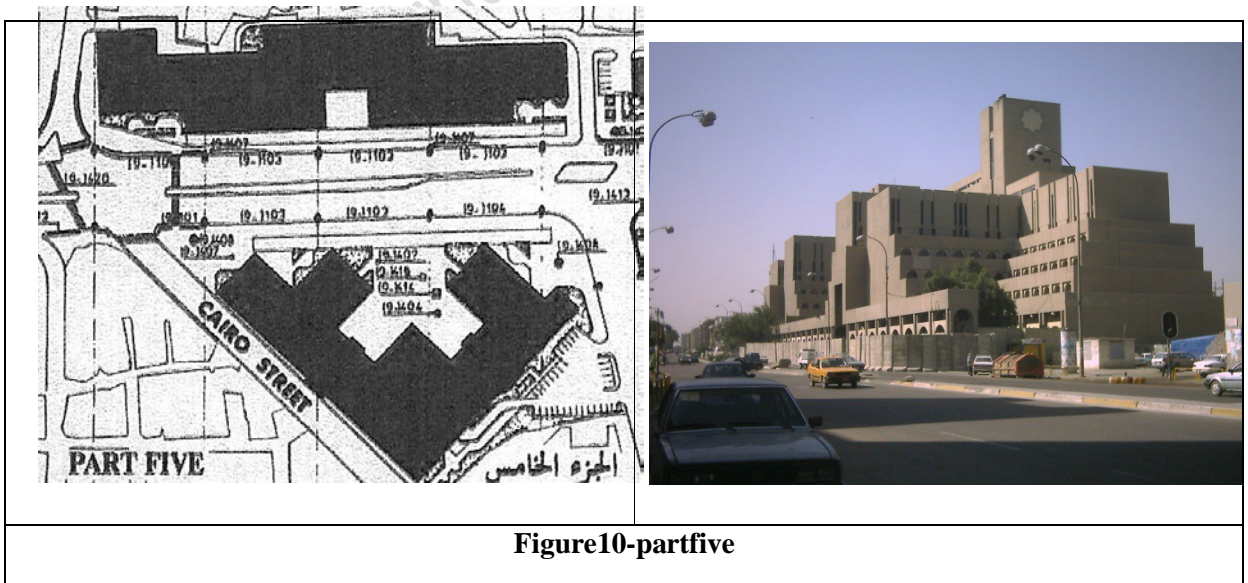


Figure10-partfive

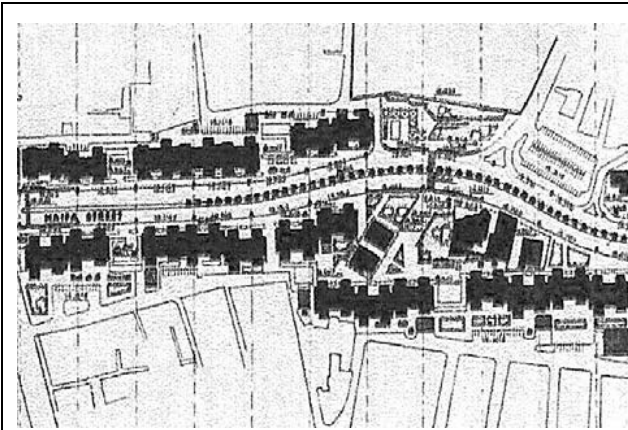


Figure 11-part six

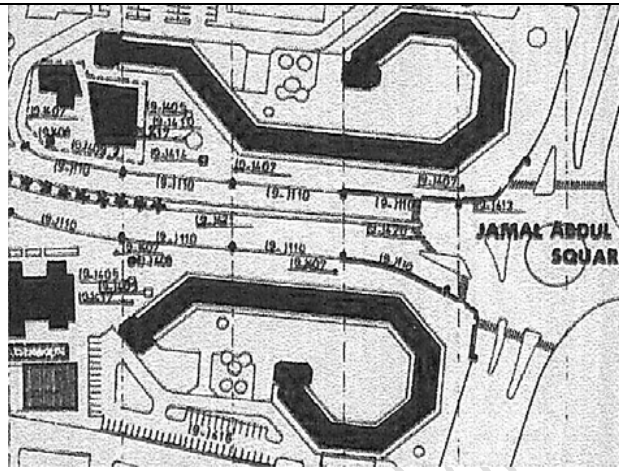


Figure 12-part seven

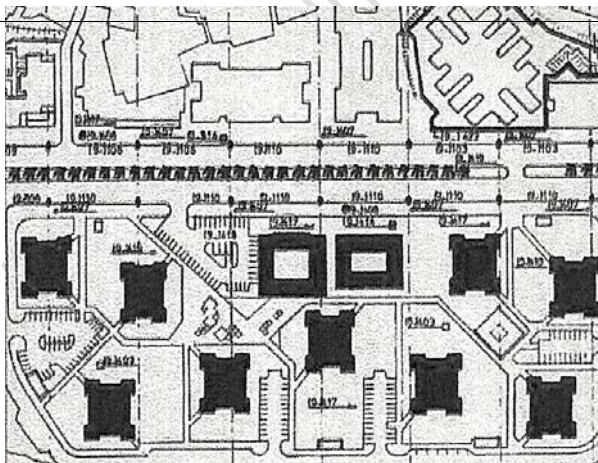


Figure 13-part eight

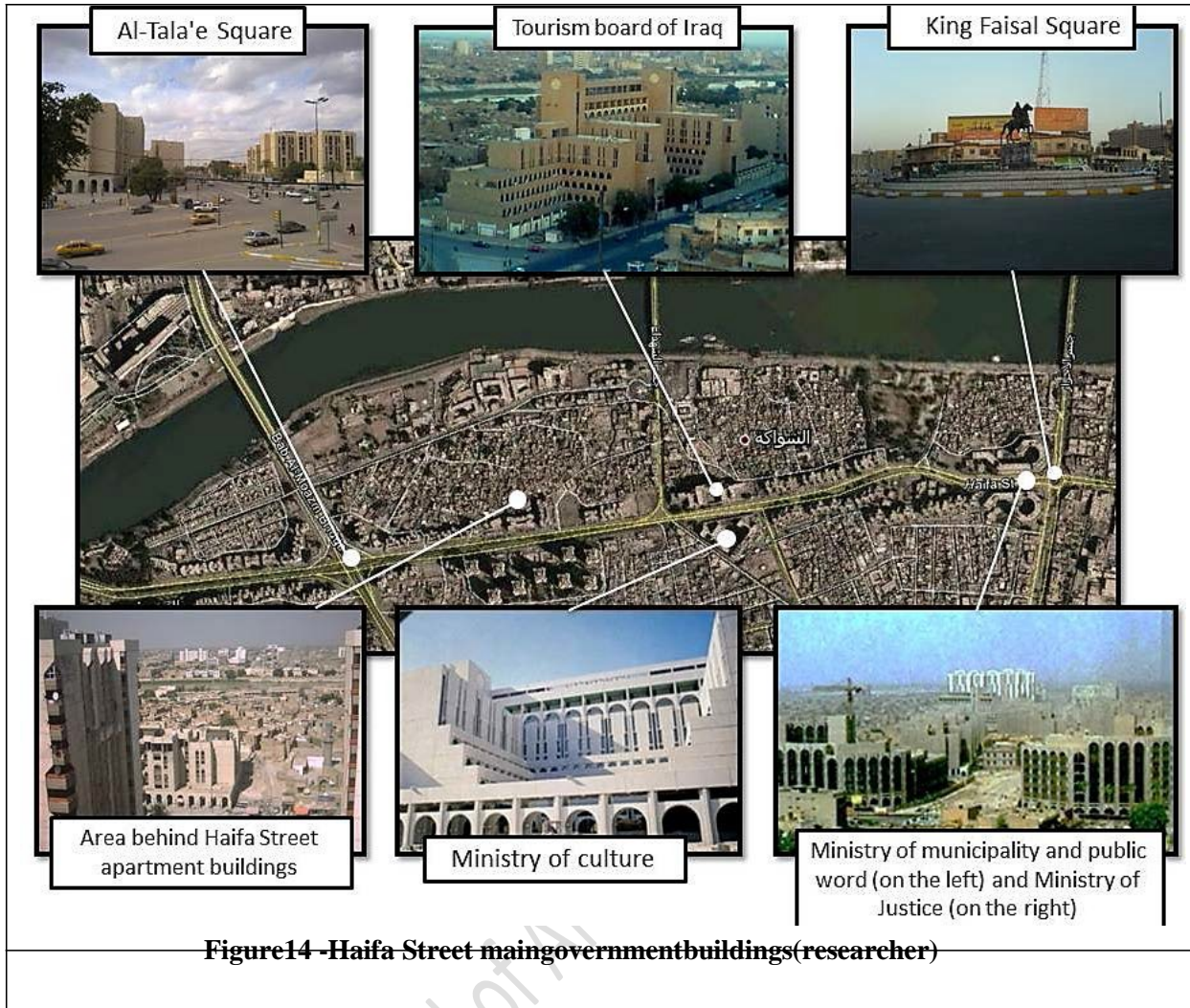


Figure14 -Haifa Street maingovernmentbuildings(researcher)



Figure15-pedestrianwalkwaysinthe study area



Figure 16-parking lots in the study area



Figure 17-landscapes in the study area

**Main features of Feng Shui: 3-**

**2-1 Site:**

- Powerful nodes and edges
- Particular building shape
- Relationship with built feature inside the site
- Relationships between features near the site

**Roads and water:**

- Aquatic landscape pattern
- Slow-moving street
- fast moving traffic

- Heavy stop-and-go traffic.

**Surrounding landscape:**

- Green areas
- Trees

**Building height and shape:**

- Harmonize with the surrounding terrain
- Square, rectangular, square (shapes)
- Considerably taller than other buildings in the area
- A Cross, The letter "H" triangular irregular buildings (shapes)

**Table 1-analyzing features occurrence**

Site		Part one	Part three	Part five	Part six	Part seven	Part eight
Power	Powerful nodes and edges						
Form	Particular buildings shape						
Structure	Relationship with built feature inside the site						
Condition	Relationships between features near the site						
<b>Roads and water features</b>							
Good Feng Shui	Aquatic landscape pattern						
	Slow-moving street						
Bad Feng Shui	fast moving traffic						
	Heavy stop-and-go traffic						
<b>Surrounding landscape</b>							
Good Feng Shui	Green areas						
	trees						
<b>Building height and shape</b>							
Good Feng Shui	harmonize with the surrounding terrain						
	square, rectangular square (shapes)						
Bad Feng Shui	considerably taller than other buildings in the area						
	A Cross, The letter "H" triangular irregular buildings (shapes)						

**3-3 Discussion**

According to the **Site** feature, the relationship with built environment inside or near the site is poor, the buildings that were built in place were individual and separated from the organic fabric in one hand and from each other in the other hand.

According to the **Road and water** features, the study area lacks of aquatic pattern with fast linear moving traffic which are both considered as bad Feng

Shui, establishing this street contributed to bury important and great part for several old neighborhoods of Baghdad located in that region (Haifa Street), where large areas of old Baghdad neighborhoods were demolished and buried, which were representing the old Arab construction that is nested and decorated by oriels, columns and narrow and branching alleys, where

the establishing of the street caused the procrastination and wasting basic identity of Baghdad in Karkh district for the visitor and the overseer, the pedestrian corridor looks like just a final try to connect the development area. And the main broad street still affect the apartments nearby.

According to the **Surrounding landscape** feature, poor vegetation and trees put the resident in direct contact with air and noise pollution.

According to the **Building height and shape** feature, buildings of the study area are not harmonized with surrounding terrain and are taller than other buildings in the area which makes them exposed to wind with no good Chi accumulation especially for upper floors which is considered as bad Feng Shui, while in the other hand these buildings have some good Feng Shui features represented by the square and rectangular shapes with no crossor "H" or irregular buildings' shapes.

### Findings

- Feng Shui is concerned with environment and is not affected by any culture or community.
- Feng Shui studies the good and bad energy (Chi) by studying the features of the site and surrounding environment and their effect on human and his life which means that Feng Shui adopts examining what is tangible to interpret what is intangible.
- The most important feature to be analyzed are Site and Roads and water features as they are what effect on the accumulation of Chi and are difficult to be treated if they represent bad Feng Shui which means selecting the site is the most important step in achieving any architectural project.
- Bad Feng Shui surrounding landscape and shape can be treated by adding green areas where are needed and by correcting sharp corners.

### Recommendations

- Adopting the application of Feng Shui in city urban planning, landscape architecture and building design, or some others. And all of them should have one thought - nature and man should be in harmony. Therefore, in the specific application of Feng Shui, we should persist in respect of this concept, at the same time, combine modern theories of urban planning and design, comprehensively apply multi-disciplinary knowledge to study, to make our planning more scientific and reasonable.
- Improving local microclimates. This means using environmentally correct surface coatings on rooftops, increasing (native) vegetation by rooftop gardens or other means, adding corridors and greenways when appropriate.
- Streets and parking lots constitute the largest component of urban impervious cover. A superior solution exists and it can be valued by living creatures. Green parking refers to several techniques collectively applied to reduce the amount of impervious cover created by parking lots. A comprehensive green parking program can effectively reduce the amount of impervious cover, save money in storm water management, reduce costs and the size of heat islands as they beautify and enrich the urban environment. Techniques include setting maximums for the number of parking lots, determining average parking demand (instead of setting parking ratios to accommodate the highest hourly parking during the peak season), minimizing the dimensions of parking lot spaces, utilizing alternative pavers in overflow parking areas, creating natural areas to retain and treat storm water, encouraging shared parking, and providing economic incentives for structured parking.

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