The application of Feng Shui in the design of contemporary architecture and its environment

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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 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-rise buildings in Haifa street to be assessed according to their 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 stand 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 of the study suggests proposals for the better exploitation of the environmental component to achieve the sustainability that we all need.

1 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 gathered 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 reduces 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 expresses 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 so on. Scientific Feng Shui, which involves in astronomy, geography, environment, construction, gardens, ethics, psychological measurement, aesthetics, as well as the theory about environmental planning which is widely used in ancient architectural and urban construction. Contemporary Feng Shui is a project that is 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 to 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 and 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.


The purpose 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 or non-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
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Theresearch bringstogether and synthesizethetheelements 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 trade-offs and contradictions in 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.


This research proposes an innovative 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 humans and the natural environment.

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, these selected Feng Shui principles will be used to produce questionnaire questions that included landscape layouts designed with different levels of Feng Shui applications. The solutions were then ranked by two hundred architects and architectural students in Hue, 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 needed to be examined.
and studied and also is what will have 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].

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

**Yin-Yang**

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 symbolizes the notion of continual change. Yin exists within Yang, and Yang exists within Yin in a cyclical conjunction. Each element can be found in the form of Mountain, Earth tones, and colors of yellow or brown. Five Elements is an alternative method to manifest Chi. These different elements react to each other both positively and negatively. 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.

![Figure 1 symbol of Yin-Yang](image)

Yin-Yang reflects 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 between Yin-Yang. In other words, Yin-Yang can be used to manifest Chi. Too much Yin quality, it produces Yin Chi; too much Yang quality, it produces Yang Chi. But if it is too much Yin Chi or Yang Chi...
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Chi, it becomes unbalance, and creates Dead Chi. To achieve Yin-Yang, it requires balance in stillness and movement, unity and variety, objective and subjective reactions.

Five Elements and two cyclical interactions

In ancient belief, 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 color of white, silver, or gold. The Fire element can be found by actual fire or the color red. Fire is useful in inappropriate 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 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 mean that the purpose of all Feng Shui basics is the first and essential basic (Chi) which is life energy that affects on 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 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 effect 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 micro environment 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 watersources 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 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, too quiet, and in addition to amenable 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: Express the qualitative features of a component of a site in terms of subjective but experiential perceptions of its effects. Rivers,
The valleys and mountains provide powerful nodes and edges. Their immenses 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 the 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 to not only bring living Chi to a settlement but also to the every corner of the site.[7]

A meandering stream is a highly stable watercourse. An arrow, slow-moving streets is 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 keeps stopping 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 uses the following rules that pertain to the flow of water:

- **Incoming water**: this identifies a road or water moving towards 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 situation. Narrow streets slow vehicular traffic and encourage pedestrian use; this makes a neighborhood hospital to visitors, children and the elderly (good Feng Shui) sometimes a fast-moving street provides beneficial Feng Shui, but that is rare. Occurrence and judgment based 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 streets as a racetrack, 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. Is some Feng Shui technique these provide enhancements while others their orientation is a detriment. The infamous T intersection, like the long and straight watercourse, can be a force for good if a site is constructed to capitalize on its strengths (usually situated to accommodate the T intersection are large building complexes). A residence facing a straight road, watercourse, or a T intersection typically meets with trouble because the site cannot
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surrounding landscape and environment

Greenspaces system is an important part to optimize the living environment. Plant has 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 the local settlement and fully respecting the inherent pattern of the surrounding landscape is not only necessary to provide constant protection of Chi and ensure the prosperity of the whole community. In addition, turning wasteland to be cultivated and planting trees and crops was an ancient method used by local inhabitants to keep the good condition of the 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.

standing height and shape

A building has good Feng Shui if:

1. It has been constructed to harmonize with the surrounding terrain. Its shape, height, and orientation are compatible with each other.

2. 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, it’s 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 not heropressed 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:

- Cross, the letter “H” triangular and irregular building shapes that resemble a knife.

Many Feng Shui defects in high-rise buildings can be corrected by the use of semicircular 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 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-kilometre-long street in Baghdad, Iraq, parallel to the Tigris River and one of the famous, main, and vital streets in Baghdad in the Kirkuk 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 Kirkand 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 a museum and the Radio and Television Iraqi Service (Iraqi Media Network) is located on one side of the street (the part of Al-Salhiyah district).

3-1-2 The development project

The Capital Secretariat in Baghdad, at the beginning of 1980, setup 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 Iraqis and foreigners architects and engineers contributed in its designing to be a modern interface to the

Figure 3 - Iraq

Figure 4 - Baghdad
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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)
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Figure 14: Haifa Street main government buildings (researcher)

Figure 15: Pedestrian walkways in the study area
Main features of Feng Shui: 3-

2-1 Site:
- Powerful nodes and edges
- Particular buildings 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
- Heavystop-and-go traffic.

Surrounding landscape:
- Green areas
- Trees

Iding height and shape:
- Harmonize with the surrounding terrain
- Square, rectangular square (shapes)
- Considerably taller than other buildings in the area
- ACross, The letter “H” triangular irregular buildings (shapes)
### Table 1-analyzing features occurrence

<table>
<thead>
<tr>
<th>Site</th>
<th>Part one</th>
<th>Part three</th>
<th>Part five</th>
<th>Part six</th>
<th>Part seven</th>
<th>Part eight</th>
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<tbody>
<tr>
<td>Power</td>
<td>Powerful nodes and edges</td>
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<tr>
<td>Form</td>
<td>Particular building shape</td>
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<tr>
<td>Structure</td>
<td>Relationship with built feature inside the site</td>
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<tr>
<td>Condition</td>
<td>Relationships between features near the site</td>
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</tbody>
</table>

#### Roads and water features

<table>
<thead>
<tr>
<th>Good Feng Shui</th>
<th>Aquatic landscape pattern</th>
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<tbody>
<tr>
<td></td>
<td>Slow-moving street</td>
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<tr>
<td>Bad Feng Shui</td>
<td>fast-moving traffic</td>
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<td></td>
<td>Heavystop-and-go traffic</td>
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#### Surrounding landscape

| Good Feng Shui     | Green areas               |            |           |          |           |           |
|--------------------|                          |            |           |          |           |           |
|                    | trees                     |            |           |          |           |           |

#### Building height and shape

<table>
<thead>
<tr>
<th>Good Feng Shui</th>
<th>harmonize with the surrounding terrain square, rectangular square (shapes)</th>
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</thead>
<tbody>
<tr>
<td>Bad Feng Shui</td>
<td>considerably taller than other buildings in the area</td>
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<td></td>
<td>A Cross, The letter “H” triangular irregular buildings (shapes)</td>
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#### 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 on 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 parts 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 oriel columns and narrow and branching alleys, where
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The establishment 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 way to 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 residents in direct contact with air and noise pollution.

According to the Building height and shape feature, buildings of the study area are in a harmonized with surrounding terrain and are taller than other buildings in the area which make them exposed to wind with 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 crossovers or "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 the effect on human and his life which means that Feng Shui adopts examining what is tangible to interpret what is intangible.
- The most important features to be analyzed are Site and Roads and water features as they are what affect 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 and beautify the niche 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 dimension of parking lots, 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.
4- References


5) Ibid.


8) Ibid.

9) Ibid.