

FengShui Paradigm as Philosophy of Sustainable Design

E. Erdogan, H. A. Erdogan

Abstract—FengShui, an old Chinese discipline, dates back to more than 5000 years, is one of the design principles that aim at creating habitable and sustainable spaces in harmony with nature by systematizing data within its own structure. Having emerged from Chinese mysticism and embodying elements of faith in its principles, FengShui argues that the positive energy in the environment channels human behavior and psychology. This argument is supported with the thesis of quantum physics that 'everything is made up of energy' and gains an important place.

In spaces where living and working take place with several principles and systematized rules, FengShui promises a happier, more peaceful and comfortable life by influencing human psychology, acts, and soul as well as the professional and social life of the individual. Observing these design properties in houses, workplaces, offices, the environment, and daily life as a design paradigm is significant. In this study, how FengShui, a Central Asian culture emanated from Chinese mysticism, shapes design and how it is used as an element of sustainable design will be explained.

Keywords—FengShui, design principle, sustainability.

I. FENGSHUI PHILOSOPHY AND BASIC CONCEPTS

FENGSHUI is a tool that enables understanding and shaping the energy within a space [1], [2]. According to John Mitchell, FengShui is the science of perceiving the energies that vitalize the nature and organizing these in a way that would consider the benefits of the ones living within the environment [3]. The principles of FengShui consider the earth, sky, and human as a whole. Everything rests upon specific properties and follows a specific order that create the form of the universe [4]. Feng and Shui have created the mountains, rivers, and plants, the most insatiable elements for the living things on the world. For this reason, the ancient Chinese thought that humans should follow natural rules when choosing a place to live. According to Taoist philosophy¹, humans follow the earth, the earth follows the sky, the sky follows Tao, and Tao follows the nature. The properties and orders comprising Tao are shown with the yin yang structure, 5 element model, and 8 trigram model [5]. The foundations of

FengShui lie within the belief of Taoism. For this reason, according to FengShui, humans should live in harmony with nature and human acts should be designed with the nature in mind [6]. The concept of "place" is important in FengShui. With its characteristic of creating spaces with identity and purpose, Feng Sui is considered to be a natural discipline of "creating place" [6], [7].

FengShui should be considered as a philosophy rather than belief or religion. It brings a variety of the fields of science including astronomy, climatology, geology, topography, ecology, and landscaping [8]. This philosophy is divided into two main schools as the "Form School" and "Compass School". Form School emphasizes the manifestations in on the surface of the earth while Compass School focuses on cosmic pattern and magnetic fields.

FengShui philosophy shares a common ground with scientific design theories such as Environmental Psychology, Bioclimatic design and Ecological design. All of these components have a strong relationship with nature and emphasize the importance of harmony with the universe. Wei has underlined scientific design methods and the relationship between these methods and the Form School of FengShui [9]. In this study, each FengShui building answers to or is related to the contemporary design methods which includes air temperature and movement, sun direction, relative humidity, sustainable design, the analysis of climate, geology, hydrology and topography and environmental psychology [9], [10].

The basic purpose of FengShui is to establish balance and harmony between the forces of nature and the spaces where people live and to obtain the greatest amount of peace, welfare, and profit [5]. In the concept of FengShui, chi - the breath of life, life force, and the soul of everything - is presented. The impact of chi is the coalescence of the energy of nature and human behavioral impacts. FengShui optimizes chi circulation by orientating the spaces and environment very skillfully. There are two basic criteria to organize chi; its diffusion by wind and collection by water [11]. For this reason, chi, wind and water are the inseparable concepts of the Form School.

All matter has vibration. This invisible electromagnetic energy defined as chi by the Chinese is spread from the objects of all shapes and sizes in specific templates. Detailed maps of chi in the body indicate the energy paths called meridian and comprise the basis of shiatsu massage therapy with acupuncture application [12]. Chi is a force that acquires form within an area and continuously in fluid form. Chi also constitutes the basis of the dynamism of consciousness, thought, sensational awareness, and feelings [13]. A good

Erdogan, E., is with the Interior Architecture and Environment Design Department, University of Selcuk, Konya, Turkey (corresponding author to provide phone: 555-419-2432; fax: 332-241-3028; e-mail: interarchebru@hotmail.com).

Erdogan, H. A., is with the Architecture Department, University of Selcuk, Konya, Turkey (e-mail: archmim@hotmail.com).

¹Tao means "path" in Chinese. Taoism is the philosophy of constantly looking for harmony and balance everywhere and in everything, and of the endeavor to stay on the path of combining Yin and Yang equally and transforming this into usable action energy. The concept of Tao has evolved out of the nature observations of the ancient Chinese and their identification with it. Tao is an integrity arising from balance and the harmonious combination of the opposites interacting with each other.

spatial organization and a proper functional cycle strengthen constructive activities and positive psychological feelings [5].

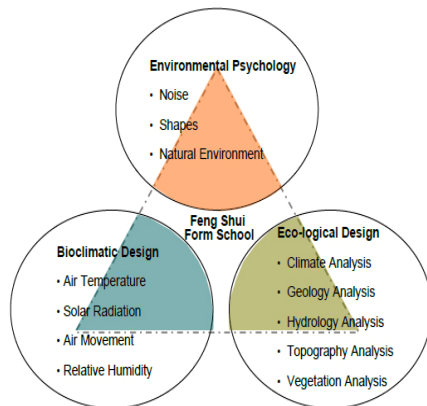


Fig. 1 Mapping nonlinear data to a higher dimensional feature space

In opposition to chi, which is beneficial and flows softly, sha is a negative, harsh, and harmful energy. Sha emerges in spaces like smooth and long corridors where chi flows fast. In particular, pointed edges create the harshest sha. This impact is called “poison arrow” in FengShui [14].

A. Yin and Yang

FengShui advocates living in harmony with the environment and the energy emanating from the nature. For this reason, there is a harmonious balance between the forces of nature. Energy has two main sources in FengShui philosophy; Yin Chi and Yang Chi that has opposite characteristics. Yin and Yang are correlated [15]; such as there would be no light without dark, or no hot without cold. These are oppositions that complement each other and form all states of life and matter together. These move together in the order of creating positive and negative energies. Yin-Yang is the Taoist symbol of the universe (Figs. 2, 3), [16].



Fig. 2 Taoist symbol

Yin and Yang are not in conflict but rather elements that complement each other. When one of those is dominant, balance is dissolved and the other's power loses its impact. Yin and Yang always tend to balance each other in nature [17]. For example, a very smooth land should be balanced with rocks, sculptures, and a pagoda with layered roofs. Pagodas are FengShui solutions developed for very Yin lands (Fig. 4), [18].



Fig. 3 Yin-Yang balance of black and white

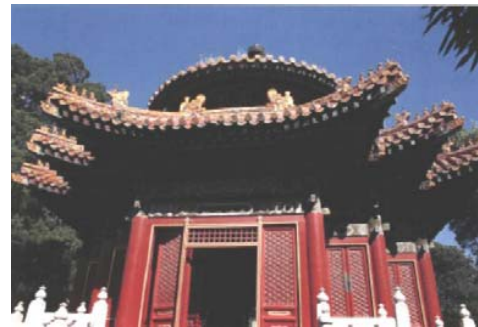


Fig. 4 Layered roof pagoda [18]

B. Five Elements

The theory of five elements represents the initiation, progress, development, fatigue, and cessation processes of events. According to FengShui, everything in the world is part of the five elements: fire, earth, metal, water, and wood. After the element of a person is determined, the requirements of that element should be considered when organizing interior space. When the balance of five elements is established in a space, spaces that conform to everyone would be created and there would be more conformity and harmony within the environment (Fig. 5).

The five elements are related to colors, times, seasons, directions, and forms. For example, water is related to the color black, winter, and the north; fire is related to red, summer, and the south. These elements create and destroy each other according to a specific order. There is a cycle in question here. This cycle takes place between the 5 elements. The cycle is both creative and destructive. Creative cycle creates positive energy whereas destructive cycle creates negative energy. Life is comprised of the combination of creative and destructive cycles that move with chi energy.



Fig. 5 A space where the balance of five elements is used [19]²

II. DESIGN WITH FENGSHUI

According to FengShui, the place of human in the universe affects his/her faith. When selecting a place for a building, organizing a room or the furniture in the room, taking the formation cycles in nature as example fills the ones living in that space with positive and balanced energy and this energy supports them for an efficient, lucky life.

Since the old times, FengShui specialists have always been special people. These specialists are wise people who are well aware of nature, observe it carefully, and have knowledge based on the grounds of science. These wise people knew how to see the excess moist by looking under a pillar, forecast the weather by looking at the circle around the moon, and even to decide whether a field is fertile or not by looking at the greenness and health of a plant [20].

Exterior factors, forms of hills and rivers, and the boundaries of trees and land, either natural or artificial, play role in the determination of the flow of life. The Four Emblems Theory is derived from the discoveries of ancient Chinese astronomy. They divided the 28 constellations into four groups. Because of the shapes, the Four Emblems are also known as the Four Animals which include the Azure Dragon, Red Phoenix, White Tiger and Black Tortoise. The Four Animals also represent East, South, West, and North respectively [21]. Fig. 6 provides an illustration of the Four Emblem concept. The Chinese used the Four Animal theory to define the directions and landforms on earth. This is the foundation of Form School Theory.

According to the Chinese, the best direction for a structure is facing the south. This enables the structure to use sunlight and block the winds from the north. In FengShui, the shapes, forms, and the locations of rivers, mountains, roads, trees, and pools are considered since these create different impacts. The Chinese acted very carefully when making changes to the topography of the earth. They faced numerous difficulties in order not to block the flow of chi and not to harm its balance.

²The element of tree is symbolized by the tall plant; the element of fire by glass, red tissue, and lights; the element of earth by the colors of yellow and brown; the element of metal by the sofa, table, and the metallic legs of lights; and finally the element of water by the fluid form of the sofa and the irregular design of lights.

With the development of civilization and the changes in the form of lands by manmade roads and buildings, new FengShui problems emerged and these problems caused the discovery of new principles in order to re-harmonize the environment. In general, it has been observed that old principles were able to be adapted to the modern times. Roads between highways, streets and the garage carry chi in a similar way to rivers; the best is having crooked roads. Symbolic characteristics of mountains are attributed to the forms of buildings and lands [20].

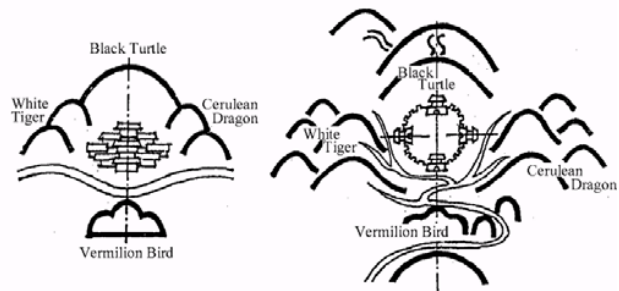


Fig. 6 Ideal patterns of ancient town and city sitting in mountainous surroundings [5]

Not only mountains, rivers, wind, and water are considered when choosing the location of a house. Artificial obstacles and forms, roads, forms of lands, neighboring buildings, trees, and drive ways all have a great impact on the people inhabiting there. In cities and suburbs, what determine the principles and solutions of FengShui are the principles that are related to the balance, moderation, and the enrichment of chi.

The entrance of a building is also an important factor in FengShui. FengShui attaches great importance to the direction of the main entrance door. Entrance must be nice and easily accessible, and the exit must have a clear sight with a way that has no obstacles on it. Obstacles such as a pillar, tree, wall, and poles that are close to the door should be removed as they block the flow of chi. Placing a tree or plant at the entrance with a certain distance is a good protective factor. The roads around the house have a similar impact.

A. Basic Solutions in FengShui

There are basic solutions used to change, moderate, or increase chi. These solutions to be used either inside or outside the building can meet numerous needs, such as removing imbalances, organizing chi circulation, and enriching one of the eight bagua fields of I Ching, and therefore enable the betterment of the individual's life. These solutions are;

Objects that are shiny or reflect the light (Mirrors, chandeliers, crystal balls, lights), Sounds (Wind bells, bells, sounds of birds and water), Plants and Flowers, Pets, Red Fish, Moving objects (Windmills, whirligig, sprinkler, revolving doors, moving lights), Heavy objects (Stones and sculptures), Electrical objects (Air conditioner, music player, TV), Musical Instruments (Flutes, fans), Colors.

III. FENGSHUI IN ARCHITECTURAL DESIGN

Architecture is the art of design that creates solutions for human needs by organizing space, volume, surface, mass, and void using many perspectives such as light, shadow, surface, and time. The combination of FengShui and architecture strengthens design as well as influencing human psychology in a positive way. A building organized by FengShui not only provides function but also enables people to move towards the life they want. It does this by establishing balance between physical environment, energies, and feelings.

Workplaces, houses and environments have impacts on people's behavior in the outside world and affect Yin Yang. Workplaces, as well as other spaces, should have a good outdoor FengShui. Many companies pay more money for a good view and especially for places where the water is seen. Important big projects in Asia are assessed according to FengShui before the initiation of construction process. Almost all companies allocate some of their budget for FengShui consultancy and determine the ideal directions, the best layout, locations of doors, corridor, and rooms; the best function for every area; the best place for every person, ideal colors and furniture layout. FengShui practitioners ask for three basic properties of architecture;

- In observation of architecture, none of the floors comprising the building should be remarkably thicker than the others.
- The building should not be placed on columns.
- The architecture of the building should be symmetrical. There should not be any rough humps; buildings with triangular corners or sharp edges should be avoided [23].

Today, it is obligatory to get a draft from an authorized FengShui master in order to obtain building construction permit in Hong Kong. Thus, many famous buildings that are a matter of dispute in the FengShui world are in Hong Kong (sinemoktay.com). Some of those are; Hong Kong & Shanghai Bank (HKSBC); Bank of China (BOC); Cheung Kong Center (CFC); International Finance Center (Two IFC); Repulse Bay Residence.

'Bank of China', one of the important examples of FengShui designed by I.M. Pei, is a very aggressive structure in terms of FengShui. The reason for this aggression is that the corners of the triangles on the front, called "poison arrow" by the Chinese, directly attack its rivals in its surrounding. Two guns placed on top of the building support the situation. The building is located at a lucky place on an inclined land facing Hong Kong harbor yet it is open to the negative impact of several busy highways passing around the building. The architects tried to create a positive environment protected from the impact of the city and placed a series of static pools and active waterfalls around the building in order to benefit from the lucky and organizing impact of water. This 70-floor tower, which is the highest structure in Asia and built on a coast surrounded by bamboos and quince trees in order to prevent the disturbance caused by the traffic, was planned to take the harbor under its impact. The walls that have been unwittingly designed to be constructed with oblique windows both reflect the forms of the surrounding buildings in a distorted way and

protect from the negative impacts of those. The rivals of Bank of China took these seriously. The most famous among them, Hong Kong & Shanghai Bank took defense position with the two guns on its roof. Norman Foster, the architect of the Hong Kong & Shanghai Bank building that is the most expensive building of the world, consulted a FengShui expert at all stages of design. While the arrows on the front surface of this building were placed downwards in the first place, they were then changed to upwards with the touch of FengShui. Upwards triangles represent the financial success of the company. Besides, interior escalators to upstairs are designed in the middle to have more money coming into the bank whereas the escalators to downstairs are hidden so that money would not leave the workplace [22].



Fig. 7 Bank of China [20]



Fig. 8 Shanghai Bank

When International Finance Center was opened in 2003, it was the highest building of Hong Kong and the 4th of the world. The building, designed by the world famous architect Casa Pelli, has been constructed with accurate proportion on a square plan which is the best form for a building according to FengShui. It has 88 floors since the number 8 is considered lucky by the people of Hong Kong [23].



Fig. 9 International Finance Center



Fig. 10 Trump International Tower

In the west, the building constructed by FengShui principles by the famous businessman Donald Trump in New York is the Trump International Tower. In consideration of the success of the hotel and the tower, Trump stated that FengShui has created a balance felt by all inhabitants and guests with the comfort and peace brought into the rooms.

In the offices of Citibank, Chase Asia, Paine Webber, McKinsey and Company, Morgan Bank, and Asian Wall Street Journal FengShui has been applied [20].

IV. CONCLUSION

Spaces, first created by humans then by designers, leave some marks and impacts on the inhabitants in time by shaping those inhabitants and the people using those spaces. H. Read explains the situation as follows: 'Humans act according to the form, mass, and surface of what has been placed before his/her feelings. The deficiency of the form, mass, and surface of the object based on specific measures gives apathy, a great deal of distress and even repulsion. Therefore, the ideas, philosophies, manifestations and even utopias that are applied during the design, construction, and usage processes of spaces embody numerous different cultural understandings and have great

importance and impact. The data created by the organization and composition of these different understandings that have interacted and developed within time consist the data of architecture.

FengShui emerged between the second and fourth centuries B.C. in China. It attracted great interest especially in the western countries in the beginning of the 90s and many publications and scientific studies were conducted about it. FengShui is essentially the art of living in harmony with nature. The activities of intervening into nature, which peaked with industrialization in the 19th Century, have also been influential in the 21st Century. During this period, successive developments experienced in the realm of architecture and the new and different perspectives that emerged are either the reinterpretation of the past or semi-natural creations composed of modern material. Natural life that had almost vanished started reacting by limiting its resources for its new users and in this environment of pollution, the bells of danger started ringing. Architects, engineers, environmentalists, and voluntary nongovernmental organizations started working in order to stop this relapse and tended towards producing and using recyclable, environment friendly material to create a sustainable environment. The idea of reusing the raw material taken from nature for nature itself again has become widespread. Within the scope of this new process experienced in the recent years, one of the methods preferred by the people aiming at creating a design in harmony with nature is FengShui.

In spaces organized with FengShui, balance and harmony are created with the energies absorbed from the space and released back into the space by the users and as a result of this, FengShui offers very successful solutions in terms of space psychology. What matters is placing the user at the center and one of the important factors regarding the success of FengShui is constructing the design influenced by the axis of the user in accordance with his/her energy.

FengShui philosophy, which now has acceptance in the west as well, has become a unique design principle in order to create sustainable buildings and environments. The main ideas used in the applications (five elements; fire, water, earth, metal, and wood) have become elements that are reflected from the nature to architectural spaces. Its embodiment of the concepts of sustainability and harmony with nature as well as balance, rhythm, unity, and functionality, which are the basic principles of architecture, has been effective in the implementation of FengShui in design-related areas.

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Erdogan, E., was born in 1978 in Kırklareli/TURKEY. She graduated from Selcuk University, Department of Architecture, Konya in 2001. She conducted her M.Sc. at the same university in 2004. She received her Ph.D. from Selcuk University, Faculty of Architecture, Department of Architecture in Konya. She has been in the academia for the past 10 years and currently she is working as an Assistant Professor at Selcuk University, Faculty of Fine Arts, Department of Interior Architecture and Environmental Design, Konya, Turkey. She is interested in visual perception of space and façade, architecture education, architectural aesthetic and interior design.

Erdogan, H. A., is currently a Research Assistant and Ph.D. student in the Faculty of Architecture at Selcuk University, Konya, Turkey. He completed his master's thesis titled "Konya Railway Station and Development of Close Environment" in 2007. He is working on the historical evolution of minarets. He is interested in Photogrammetric Survey, Structural Analysis of Historical Masonry Construction, and The Education of Historical Environment.