

URBAN FENG SHUI:
DESIGN GUIDELINES FOR MULTIFAMILY
RESIDENTIAL IN HONOLULU

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Abstract

Urban Feng Shui: Design Guidelines for Multifamily Residential in Honolulu

provides a framework for the designer to consider the principles of feng shui when designing for a multifamily residential project. Feng shui is a form of practice which aims to manipulate the built environment to benefit the well-being of people. Originally a Chinese belief system from the rural areas of Ancient China, it grew as an oral tradition to be interpreted by individuals in the urban context. Although sometimes it is seen as a superstition and aesthetic, designers should consider feng shui as a cultural and environmental factor when designing for people. As a matter of fact, feng shui can be applied to all stages of design. The focus of this project is to explore the origins of feng shui and its transformation to the urban context, specifically in residential architecture. This will be done by reviewing traditional systems of feng shui and exploring the acceptance of feng shui in the West. Following that will be an interview with a feng shui specialist from Honolulu which will provide a distinct list of multifamily residential feng shui principles to compare with Western architectural feng shui principles. The research process will then inform design guidelines to approach site selection, site analysis, and building design for a multifamily residential project in Honolulu. The results will show that feng shui is a viable system to approach designing for the built environment. It reinforces the importance for designers to think from a macro to micro scale, from the site of the building and eventually on the spaces of the residents.

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Chapter 1. Introduction

1.1 Background

Feng shui, written in Chinese as “风水”, translates to wind and water in English. It is a form of practice which involves manipulating the built environment to benefit the well-being of people. Originally a Chinese belief system which began in the rural areas of China, it grew as an oral tradition to be interpreted by individuals in the urban context. In fact, feng shui holds importance in culture, architecture, environment, and people. The teachings of feng shui have been passed down from multiple generations since Ancient China which makes it a big part of Chinese culture. With foundations of a rural setting, the ideas behind feng shui were eventually used to design cities and buildings which still exist today. Feng shui also considers the natural and built environment to be a crucial part of achieving balance in human life and, therefore, pays close attention to the specific environment in which the individual feels comfortable in. As a matter of fact, some Chinese believe that feng shui inspires prosperity in life.

The principles of feng shui can be aligned with the principles of architecture, which effectively provides a platform in design for architectural practice. Additionally, feng shui can be applied to all scales of design. With the goal of enhancing the qualities of the environment and the well-being of people, the focus of the project is to explore the principles of feng shui and its role in architecture to help guide site selection and building design. This will be demonstrated through proposing a multifamily residential building in Honolulu.

1.2 Problem Statement

There are two main problems which drive this paper. First, feng shui is often seen as a superstition and aesthetic. Although this resulted in an increase in popularity on the profession of feng shui, there is a need to prove that feng shui can be put into a more practical use in the profession of architecture. Second, there is a challenge of using feng shui principles in an urban context given that the principles come from a rural history. Hence, the project aims to answer the following research questions:

1. To what extent can an architect design using feng shui principles in the urban context?
2. What is the role of feng shui in multifamily residential buildings?

1.3 Purpose

Architects develop an understanding of approaching a multifamily residential project with principles relating to building efficiency and client needs. There is an absence, however, for architects to be exposed to the importance of feng shui, where the main goal is to design for the well-being of people. The purpose of this project is not to convince the reader to believe in feng shui, but to examine the principles relevant to the process of designing a residential project. To do so, the research will produce a prototype which overlays architectural factors with feng shui principles. The project aims to:

1. Establish the fact that feng shui began in the context of the rural setting and now faces the challenge of the urban setting.
2. Establish a set of urban feng shui design principles and criteria that can be applied to multifamily residential projects and architectural practice.

1.4 Method

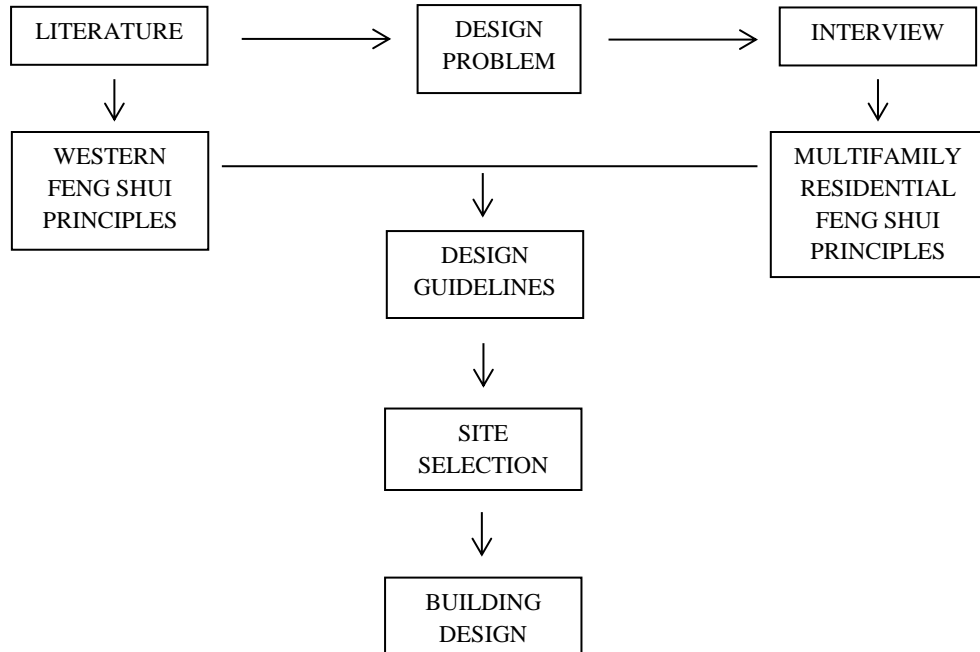


Figure 1. Research Process

The existing literature (Chapter 2) raises the attention of the design problem of urban feng shui and the role of feng shui in multifamily residential buildings. Therefore, an interview with a feng shui specialist is conducted (Chapter 3) to define multifamily residential feng shui from a profession's practice point of view. The principles from both the literature and interview will develop the list of design guidelines (Chapter 4) which will address the site selection process (Chapter 5) and building design (Chapter 6), including site analysis, schematic design, design development and final documentation. Furthermore, the design guidelines will eventually be a tool to guide the building form and internal layout for a multifamily residential building in Honolulu.

Chapter 2. Literature Review

Due to the fact that feng shui comes from an oral tradition, most of the principles of feng shui are still kept secret, yet some are revealed seen in published works by Western scholars, feng shui specialists, and emerging building professions. Feng shui is a belief and discipline which involves philosophical concepts from Ancient China. Originally practiced in rural areas, feng shui continues to be practiced today in the urban environment as urban feng shui. Transitioning from a traditional understanding to an urban interpretation, urban feng shui faces some challenges which will also be the project's design problem. With the exposure of the concept, the West gained a new cultural perspective on interior and building design. Recently, a few researchers have already attempted to find commonalities between feng shui principles and architectural practices relevant to today. Along with existing and developed interpretations, basic architectural feng shui principles can be derived from Western feng shui professionals to help guide site selection and building design. That being said, the purpose of this review is not to explore the mystical aspects of feng shui, but to explore how a certain anthropologic perspective of the built environment can be beneficial to designers and building professions.

2.1 Feng Shui as a Belief System

Feng shui has been accepted to be the way of life since Ancient China. According to Bruun¹, feng shui tradition is a piece of Chinese history, inseparable from Chinese cosmology. The first evidence relating to feng shui was found over six thousand years

¹ Ole Bruun, *An Introduction to Feng Shui* (New York: Cambridge University Press, 2008), 1.

ago. Pieces of feng shui symbolism discovered in graves from 4000 BC are taken as evidence of the pre-historic roots of feng shui.² The leading ideas of feng shui are borrowed from one of the ancient classics *I-Ching* or *Yi Jing* (The Book of Changes)³ which is believed to be written by an emperor in 3000 BC.⁴ As the most influential divination text in Chinese Culture⁵, *I-Ching* introduces the theory that "things eternally change; that the universe is made by creative forces represented by opposites; that there is a fundamental correlation between all events; that there is no distinction between...that situations on the macro level may be encapsulated in the divination act on a micro level".⁶ In other words, the universe is made of constant flowing forces which affect the daily life activities. In agreement with Bruun, Chen specifies feng shui as the study of heavens (universe) and the earth and how humans interact with the two spheres⁷. Therefore, it can be said that there is a natural flux of causal relationship between human and their surroundings, which means everything in life is interrelated, forming the basis of Chinese thinking and feng shui belief.

Philosopher Alan Watts defined "belief" as a wish that things would turn out a certain way, where there is a way things should be and shouldn't be, and belief is a wish

² Bruun, *An Introduction to Feng Shui*, 12-13.

³ Ernest J. Eitel, *The Science of Sacred Landscape in Old China*, (London: Synergetic Press, 1984), 5.

⁴ Teh Tien Yong, "Fengshui: It's Application in Contemporary Architecture" *Mimar 27: Architecture in Development* (1988), 27.

⁵ Edward L. Shaughnessy, *Unearthing the Changes: Recently Discovered Manuscripts of the Yi Jing (I Ching) and Related Texts* (New York: Columbia University Press, 2014), 142.

⁶ Bruun, *An Introduction to Feng Shui*, 106.

⁷ Guo-Ming Chen, "The impact of feng shui on Chinese communication," *China Media Research* 3(4) (2007): 107.

that they be the way they “should”.⁸ That being said, the discipline of feng shui emerged from the rural areas based on how a dwelling or a burial site should or should not be placed. In 1937, Chinese scholar Chen Huaizhen discusses that the concept of feng shui originated in the system of ancestor worship. The Chinese have always emphasized the importance of respecting the elderly family members. Therefore even after the death of the children’s parents, the children must bury them in a proper way. In addition to that, the Chinese also believe that after death, spirits remain in this world. In short, most Chinese believe that deceased parents could determine the prosperity of their children.⁹

As a result, the feng shui discipline was used as a guide in establishing places where families would prosper and determine the best burial places for the deceased. Mak and So¹⁰ state that feng shui is mainly used in establishing two types of dwellings, which include the houses for the living referred to as *yang*, and the tombs, which are for the dead also called the *yin* dwellings. The two types of dwellings have to sit appropriately for the well-being of people and their success in life. Newell agrees that if a grave has been sited appropriately, it will bring prosperity to a person’s life.¹¹ Sandifer further emphasized that the topography provided the inspiration for a philosophy for finding locations within the landscape beneficial for dwellings and burial sites. The majority of principles which were believed to be beneficial developed based on early human

⁸ Ed Guroqitz, “Belief is Easy, But Faith Takes Discipline,” *Huffington Post*, June 28, 2010, accessed November 20, 2015. http://www.huffingtonpost.com/ed-gurowitz-phd/belief-is-easy-but-faith_b_625874.html.

⁹ Ole Bruun, *Fengshui in China: Geomantic Divination between State Orthodoxy and Popular Religion* (Hawaii: University of Hawaii Press, 2003), 267.

¹⁰ Michael Y. Mak and Albert T. So, *Scientific Feng Shui for the Built Environment: Theories and Applications* (Hong Kong: City University of Hong Kong Press, 2015): 52.

¹¹ William H. Newell, *Ancestors* (Berlin: Gruyter Mouton, 2011): 332.

observations and experiences. For instance, the burial site is generally found on the Southern side of the mountains so that the ancestors are protected from harmful winds from the North direction. Dwellings are generally south facing so that the person entering will always face north and be overlooked and protected by their ancestors.¹² With training, experience and intuition, early practitioners could detect the most auspicious site for both the living and the dead.¹³ In short, feng shui emerged as a belief system and practice of manipulating the built environment in an attempt to benefit the people living in it.

Feng shui continued to be a significant part of the Chinese culture despite the onset of communism, which aimed to destroy most of its principles due to its mystical elements.¹⁴ The attempt to disintegrate feng shui started in 1966 during the Cultural Revolution. Party leader Mao Zedong demanded to destroy all things created before 1949. He called these edifices of Chinese culture the Four Olds: Old Custom, Old Culture, Old Habits, and Old Ideas.¹⁵ Hence, many masters fled the People's Republic of China and found refuge in Taiwan and Hong Kong. Despite the massacre of feng shui texts, some books were successfully smuggled out of China and principles endured as oral tradition. For instance, Master Yu Guang, a feng shui specialist from Guangdong Province in China, studied feng shui since childhood and learned from his father, whose

¹² Bhojraj Dwivedi, *Feng Shui: Chinese Vaastu for Better Living and Prosperity* (India: Diamond Pocket Books, 2000): 16.

¹³ Jon Sandifer, *Feng Shui for Life: Mastering the Dynamics Between Your Inner World and Outside Environment* (Randolph, VT: Destiny Books, 2000): 6.

¹⁴ Michael Y. Mak and Albert T. So, *Research in Scientific Feng Shui and the Built Environment* (Hong Kong: City University of Hong Kong Press, 2009): xxx.

¹⁵ Denise Liotta Dennis, *Classical Feng Shui for Wealth and Abundance: Activating Ancient Wisdom for a Rich & Prosperous Life* (Woodbury, MN: Llewellyn Publications, 2013), 9.

teachings are based on four generations of his family's secrets. He now practices in the United States.¹⁶ Until today, feng shui consultation is still illegal in the People's Republic of China. However, restrictions against feng shui continue to relax as Communist standards fail to meet financial demands.¹⁷ Therefore, it can be said that theories behind feng shui remain true to Chinese culture.

2.2 Concept of Qi

The concept of *qi* pronounced as "chi" is the most important concept in feng shui as it exists in every aspect of life. Written as “气” in Chinese, qi is translated to “spirit”, “vital energy”, and “energy of life” in English. It is the breath of nature; the movement and natural flow of the surrounding environment.¹⁸ Leung explains that “qi was the fundamental substance that made up everything in the world and that all things came into being through the movement and flux of qi.”¹⁹ More importantly, the definition of qi is what forms the foundation on which feng shui is built. According to Collins,²⁰ there are three principles which define qi. First, everything is alive, which means that all things in the physical world have qi. All things, including material possessions and buildings, are living bodies with the purpose of harmonizing and nurturing the people.²¹ Second, everything is connected, which creates the ripple effect. This means feng shui pays attention to all surroundings; from communities to neighborhoods and outdoor to indoor,

¹⁶ “About us,” Yu Guang Feng Shui Research Association, accessed November 20, 2015, http://www.fengshuiyuguang.com/?page_id=12&lang=en.

¹⁷ Dennis, *Classical Feng Shui*, 10.

¹⁸ Ping-Chung Leung et al., *A Comprehensive Guide to Chinese Medicine* (New Jersey: World Scientific Publishing Company Pte Ltd, 2003), 63.

¹⁹ Leung et al., *A Comprehensive Guide*, 63.

²⁰ Tarah Kathryn Collins. *The Western Guide to Feng Shui: Creating Balance, Harmony, and Prosperity in Your Environment* (Carlsbad, CA: Hay House. Inc., 1996), 7.

²¹ Collins, *The Western Guide*, 8.

which could potentially impact the energy of the home.²² Third, everything is changing, which promotes the dynamic signs of living qi. This can be seen through the change of seasons and more subjectively, through the changes of our states of mind and emotions.²³ Therefore, it is believed that positively changing the home environment encourages new habits and needs of the inhabitant.

In fact, qi is a cosmic stream which connects the universe, earth and man together.²⁴ Figure 2 shows that the universe or written in Chinese as *tian* 天 (a powerful upper being) controls the earth or *di* 地 (the natural and built environment) which controls the man or *ren* 人 (people). In other words, the only way for the man to receive positive qi is to manipulate and organize the built environment. This reinforces the fact that all things have a spirit which connects all things together. On the same note, qi can also be bad. Wang and Li emphasize that qi is divided into auspicious and inauspicious; good or *sheng qi* and bad or *sha qi*, which comes from the needs of people.²⁵ In extension, good and bad qi can be delivered by wind and water, which translates to the environmental aspects of feng shui. Understanding how qi flows through the environment is essential in feng shui. This can be further shown in the symbolic, psychological and well-being factors of qi.

²² Collins, *The Western Guide*, 9.

²³ Collins, *The Western Guide*, 10.

²⁴ Kwok, Reginald. "Geomancy: Fengshui," Lecture, University of Hawaii at Manoa, Honolulu, January 27, 2016.

²⁵ B. Wang and T. Li, "Influence of the Chinese traditional Feng-shui theory on the layout of contemporary residential space," *Progress in Civil, Architectural and Hydraulic Engineering IV* (2015), 1249.

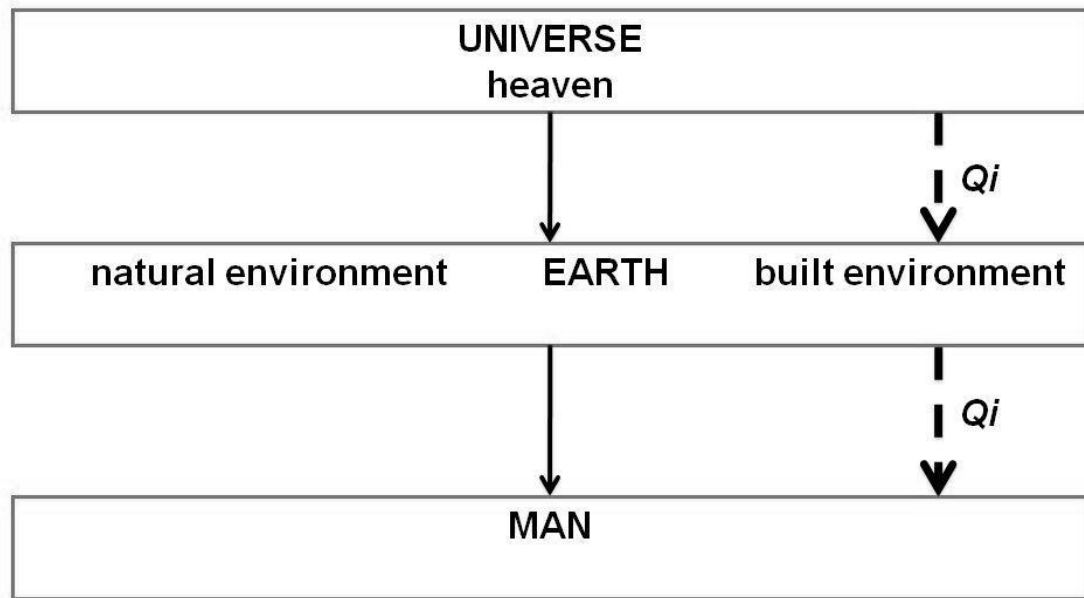


Figure 2. Cosmic Stream between Universe, Earth and Man²⁶

2.2.1 Symbolic Factor

Goodall writes that “feng shui produces an emotional reorganization of otherwise disparate symbols, which, like the power of a new metaphor in speech, reorganizes the way we see and understand the world.”²⁷ This is important because symbols play a large part in providing the rule of thumb in qi evaluation.²⁸ An obvious example of symbolism is wind and water. Wind symbolizes a vast network of vital breath, such as ventilation in a building. When the wind is too strong, then there will be bad qi; when the wind is gentle, then there will be good qi. Water also attracts qi. In Chinese, water is associated

²⁶ Kwok, Reginald. "Geomancy: Fengshui," Lecture, University of Hawaii at Manoa, Honolulu, January 27, 2016.

²⁷ Katherine Grace Morris, “Through the Lens of Feng Shui: A Phenomenological Study of Psychiatrists’ Offices from a Depth Psychological Perspective,” (PhD diss., Pacifica Graduate Institute, 2006), 20.

²⁸ Jun Xu, “A Framework for Site Analysis” (PhD diss., Virginia Polytechnic Institute and State University, 2003), 29.

with money. Therefore, bodies of water such as rivers gather qi and are believed to stimulate the flow of money.²⁹ It is considered good that the flow of water is steady. Bodies of water with stagnant or fast currents and with poor quality should be avoided. Another example is the use of dragon symbolism which Issitt and Main describe as the most ancient symbol in Chinese culture. In feng shui, it symbolizes vitality and the desire to draw vital essence from the landscape. Mountains are seen as representations of the dragon's body and, therefore, orienting one's home with respect to a mountain would be beneficial.³⁰ This explains why the mountain or dragon is always on the North side of the home in China for it blocks Northern strong winds or incoming bad qi and protects the home. Other countless symbols in feng shui include the celestial animals (black turtle, green dragon, red phoenix, and white tiger) which are associated with the cardinal directions³¹ and the five elements of life (water, fire, wood, metal and earth).

2.2.2 Psychological Factor

While feng shui derives from ancient Chinese philosophical traditions, many feng shui principles have also been informed by observations of human psychology.³² In fact, feng shui relates to people's perception and experience of space which play a strong part in determining their spatial behavior.³³ That being said, Bentley and Ko pointed out that the purpose of feng shui is to channel good qi energy into our living and working

²⁹ Donna Stellhorn, *Feng Shui Form* (Carlsbad, CA: ETC Publishing, 2006), 191.

³⁰ Micah Issitt and Carlyn Main, *Hidden Religion: The Greatest Mysteries and Symbols of the World's Religious Beliefs* (Santa Barbara: ABC-CLIO, 2014), 246.

³¹ Christine M. Bradler and Joachim Alfred P. Scheiner, *Feng Shui Symbols: A User's Handbook* (New York: Sterling, 2007), 196.

³² Issitt and Main, *Hidden Religion*, 246.

³³ Morris, "Through the Lens of Feng Shui", 19.

environments.³⁴ Fromm emphasizes that qi is healthy energy which can be contagious.³⁵

Healthy or positive energy is the positive feelings that fill one with optimism and warmth. The negative or low energy can be experienced when one enters a room and feels uncomfortable. Therefore, the main goal for any feng shui practice is to keep qi energies as positive and flowing as possible to avoid bad qi. For instance, removing clutter in the home allows qi to flow through more and this has proven to reduce clutter in the mind which also allows one to relax.³⁶

Another example is sitting with your back facing the door. This position is considered to bring bad qi because someone could come into the door and startle you. Psychologically, anyone would feel more comfortable where they can see the door and hence attract positive qi. On the same note, research shows that the exposure and access to views of nature have been proven to improve individuals' health by providing restoration from stress and mental fatigue.³⁷ Individuals also tend to avoid sharp edges or corners and prefer rounded corners as they appear safer by nature.³⁸ This all might explain why common feng shui adjustments such as adding greenery to a corner of a room to redirect qi and arranging furniture to open up the space to allow qi to flow can lead to healthier energy.

³⁴ Morris, "Through the Lens of Feng Shui," 19.

³⁵ Mollory Fromm, *Qi Energy for Health and Healing: A Practical Guide to the Healing Principles of Life Energy* (California: Avery, 2003), 11.

³⁶ Jennifer Barnum, "Psychological Benefits of Feng Shui," Dream Positive, accessed January 11, 2016, <http://www.dreampositive.info/psychological-benefits-of-feng-shui/>.

³⁷ Rachel Cooper and Elizabeth Burton, *Wellbeing: A Complete Reference Guide, Wellbeing and Environment* (USA: Wiley-Blackwell; Volume II edition, 2014), 2.

³⁸ "Why Rounded Corners Are Easier on the Eyes," Ux Movement, accessed March 20, 2016, <http://uxmovement.com/thinking/why-rounded-corners-are-easier-on-the-eyes/>.

2.2.3 Well-Being Factor

According to Stenudd, qi means inspiration, which in Latin means inhaling. Its root is the word *spiritus*, spirit, which originally means breath.³⁹ He points out that qi is not necessarily the air we breathe, but the substance we breathe that flows in and out of the body, independent of the body organs.⁴⁰ As qi flows through the universe, it affects the human body. Similarly in traditional Chinese medicine, it is believed that the main compositions in the body are made up of three vital substances: qi, blood, and body fluids.⁴¹ In addition to the practice of Chinese medicine which uses qi to heal the body, there is also the practice of *qi gong*, an ancient Chinese health care system which uses qi to integrate physical postures, breathing techniques and focused intention.⁴² Guimaraes suggests that *qi gong* can be explained in terms of concepts more familiar to Western medicine such as stress management and neurology.⁴³ Along with acupuncture and herbal medicine, *qi gong* also serves part of the treatment modalities in traditional Chinese medicine.⁴⁴ Therefore, if the qi in the body is blocked, then the body will be unwell. In this case, if the qi does not flow through the environment properly, balance cannot be achieved, and the body will also feel unwell. This means that qi has a lot to do with the health and comfort level of people; their well-being.

³⁹ Stefan Stenudd, *Qi: Increase your Life Energy* (BookSurge Publishing, 2008), 10.

⁴⁰ Stenudd, *Qi: Increase your Life Energy*, 11.

⁴¹ Hongcai Wang and Bing Zhu, *Basic Theories of Traditional Chinese Medicine* (Philadelphia: Singing Dragon, 2011), 158.

⁴² "What is Qigong," National Qigong Association, accessed December 3, 2015, <http://nqa.org/about-nqa/what-is-qigong/>.

⁴³ Fernando Guimaraes, *Vibrational Energy Medicine* (PediaPress), 120.

⁴⁴ Wai-Sum Liu and W. -L Leung, "Psychotherapy with the Chinese: an update of the work in the last decade," in The Oxford University Press, ed. Michael Harris Bond (United Kingdom: Oxford University Press, 2010), 459.

2.3 Traditional Fundamental Systems

With the concept of qi in mind, feng shui also involves fundamental systems based on philosophies found in ancient Chinese classics, including *I-Ching*. Some fundamental systems have also developed into its own school. These are Form School, *Yin Yang*, and Compass School. Form School involves looking at site characteristics, *Yin Yang* involves achieving a balance between positive and negative qi, and Compass school involves the calculations of qi. These three systems are crucial to any understanding of feng shui as it all shares the same purpose; to benefit people with the surrounding environment. Furthermore, the conclusion will summarize that this paper will limit to only two of these systems: Form School and *Yin Yang*.

2.3.1 Form School

Just like its name, Form school looks at site characteristics such as different land or mountain forms and shapes of any physical object with an aim of determining the impact on man and the qi of the environment. It is often referred to as visible or tangible qi; not because it can actually be seen by the naked eye, but rather because its patterns are predictable from the positioning of tangible objects around us.⁴⁵ Its analysis is based on the Four Emblems, namely Black Tortoise, Azure Dragon, White Tiger and Red Bird (Phoenix), and the five geographical factors, namely dragon, sand, water, cave, and direction.⁴⁶ This is also called the ideal feng shui model, or the "armchair" formation (Figure 3). The Four Emblems represent the four cardinal directions: North, East, West,

⁴⁵ Simona F. Mainini, *Feng Shui for Architecture: How to Design, Build and remodel to Create A Healthy and Serene Home* (Bloomington, IN: Xlibris, 2004), 73.

⁴⁶ Michael Y. Mak and S. Thomas Ng, "The Art and Science of Feng Shui – a Study on Architects' Perception," *Building and Environment* 40 (2005): 427.

and South. The model shows that the site must always sit against the north and open up to the south. As for the five geographical factors, the dragon means the mountain ridges and represents the topography. Sand means the enfolding hills and represents the surrounding environment that protects the “cave”. Water means the flow of water that bypasses the site. The cave means the best location for a site. Lastly, direction is where the dwelling should face; South being the best. In ancient Chinese rural areas, a village would follow the ideal feng shui model or the “armchair” concept such that it will be situated on the elevated dragon, protected by the “sand” from strong wind, be provided constant clean water supply by the “water”, and gain solar access to all the farmlands from “direction”.⁴⁷ Moreover, Form school believes that the armchair concept will bring the best feng shui and be the most beneficial to any site.

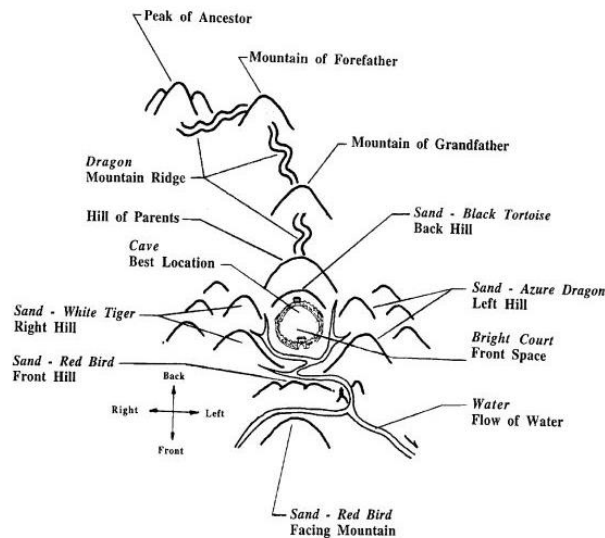


Figure 3. Representation of the Ideal Feng Shui Model⁴⁸

⁴⁷ Eugene Anderson and Marja Anderson, “Changing patterns of land use in rural Hong Kong.” *Mountains and water: essays on the cultural ecology of South Coastal China* (1973): 45–50.

⁴⁸ Mak and Ng, “The Art and Science of Feng shui,” 429.

2.3.2 Yin Yang

Yin Yang represents the creation process of all things through the interplay of opposing forces. Yin yang emphasizes that there should always be a balance between positive and negative qi. Literally, yin yang means shade and light in English. Xu claims that everything in the universe is produced by changes, which resulted with the balancing of yin and yang.⁴⁹ Liu characterized the relationship of yin and yang with opposition, interdependence and intertransformation, and dynamic balance.⁵⁰ Furthermore, *Tao Te Ching* written by the famous Chinese philosopher Laozi depicts yin yang as, “All things carry the yin (femininity) while embrace the yang (masculinity). Neutralising energy brings them into harmony.”⁵¹ In other words, yin and yang are correlated; they are opposites that complement each other, such as there would be no light without dark or no hot without cold. They move together in the order of creating positive and negative energies.⁵²

This pattern of balance, which is the operative principal of the entire universe, is derived from the observations of nature.⁵³ According to Liu, the early Chinese saw a material world that was constantly evolving as a result of the movement of two opposing but complementary material forces.⁵⁴ For instance, yin symbolizes the earth, night, stillness, and rest. Yang symbolizes the sky, day, motion, and activity. Figure 4 shows the

⁴⁹ Xu, “A Framework for Site Analysis,” 28.

⁵⁰ Yanchi Liu, et al., *The Essential Book of Traditional Chinese Medicine, Vol. 1: Theory* (New York: Columbia University Press, 1988), 32.

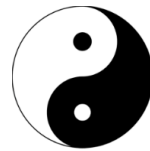
⁵¹ Stephen Mitchell, ed., *Tao Te ching* (New York: Harper Perennial, 1992), 42.

⁵² Ebru Erdogan and H. A. Erdogan, “FengShui Paradigm as Philosophy of Sustainable Design,” *International Journal of Social, Management, Economics and Business Engineering* vol. 8 no. 10 (2014): 3215.

⁵³ Mainini, *Feng Shui for Architecture*, 78.

⁵⁴ Liu et al., *The Essential Book of Traditional Chinese Medicine, Vol 1: Theory*, 31.

traditional yin yang symbol and the list of attributes of yin yang. The list of attributes shows that yin yang is complete opposites that can't exist without the other. The application can be seen in finding a favorable site for a dwelling, for instance surrounding hills (yin) which mean the rising land and a meandering river (yang) which means the flat land, suggests a good location.⁵⁵ Another important aspect of yin yang is the central axis of North-South which emphasizes the balanced form of yin yang. Not only does the North-South axis represent balance, stability, and harmony, it also provides a structural platform for urban planning and architecture in China.



YANG	YIN
Heaven	Earth
Sun	Moon
Spring, Summer	Autumn, Winter
Male	Female
Heat, Warmth	Cold, Coldness
Dryness	Moisture
Larger, Powerful	Smaller, Weaker
The Upper Part	The Lower Part
Fire	Water, Rain
Movement	Quiescence
Day	Night
The Left Side	The Right Side
The East and South	The West and North
The Back of the body (from head to tail bone)	The Front of the body (from chest to belly)
Hours between midnight and noon	Hours between noon and midnight
Repletion	Depletion
Clarity	Murkiness
Incipience	Development
Destruction	Conservation
Aggressiveness	Responsiveness
Expansion	Contraction
Soul	Body

Figure 4. Yin Yang Symbol and Attributes⁵⁶

⁵⁵ Xu, "A Framework for Site Analysis," 28.

⁵⁶ Mainini, *Feng Shui for Architecture*, 79.

Along with the observation of the yin yang material world also came the Five Elements or *wu xing*, a framework for viewing and understanding the pattern of *qi* to achieve yin yang balance. Similar to how electricity flowing through a conduit is seen only by its physical manifestations in appliances, so is *qi* by manifesting itself as the Five Elements constituted of an ever-transforming life force.⁵⁷ The Five Elements explains that every object in this world contains structural qualities such as sound, smell, sight, taste, and feeling that interact with each other and produce outcomes in predictable patterns.⁵⁸ In other words, all things belong to an element. The Five Elements are earth, water, fire, wood, and metal.⁵⁹ Each element represents an analogy with its own rules for actions and results for any object.

The framework which explains the Five Elements are the generative and destructive cycle shown in Figure 5. The energy and qualities contained in such objects cannot be created or destroyed but instead transforms its intensity through this natural cycle: Water feeds and nourishes wood, which in turn burns, producing fire. Fire creates ashes, which nourish the earth in whose womb metal is formed. Finally, metal's coolness condenses surface air, precipitating water. Alternatively, water extinguishes fire; fire melts metal; metal chops wood; wood pierces earth; earth muddies water and prevents it from flowing.⁶⁰

⁵⁷ Mainini, *Feng Shui for Architecture*, 84.

⁵⁸ Cate Bramble, *Architect's Guide to Feng Shui* (London: Routledge, 2003), 23.

⁵⁹ Barry Fishman, "The Process of Creation and the Formation of the Five Elements," Scholar's Age, accessed November 20, 2015. <http://www.scholarsage.com/tag/symbology?print=print-page>.

⁶⁰ Mainini, *Feng Shui for Architecture*, 85.

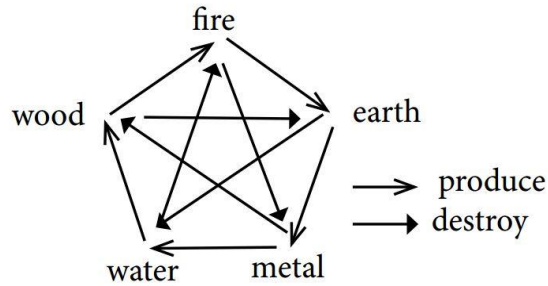


Figure 5. Five Elements Relationship

Each of the Five Elements also forms a matrix and corresponds to other categories such as directions (East is wood, West is metal, North is water, Center is earth)⁶¹, colors (wood is green, fire is red, earth is brown, metal is gray, water is blue) and shapes shown in Figure 6 and 7. According to Chiou, everything belongs to the Five Elements and one must follow the rule of the generative and destructive cycle to bring balance.⁶² Therefore, the aim is to follow the Five Elements to ensure a balanced or *yin yang qi* between buildings, people, and the factor of time.⁶³

	FIRE	EARTH	METAL	WATER	WOOD
SEASON	Summer	Transition between seasons	Fall	Winter	Spring
DIRECTION	South	Center	West	North	East
NUMBERS	9	2, 5, 8	6, 7	1	3, 4
COLOR	Red	Yellow	White	Blue/Black	Green
TASTE	Bitter	Sweet	Pungent	Salty	Sour
SMELL	Scorched	Fragrant	Rotten	Putrid	Rancid
ORGAN	Heart	Stomach	Lung	Kidney	Liver

Figure 6. Five Elements Matrix with Directions and Colors⁶⁴

⁶¹ Erdogan and Erdogan, "FengShui Paradigm," 3215.

⁶² S-C Chiou and R Krishnamurti, "Unravelling Feng-shui," *Environment and Planning B: Planning and Design* vol. 26 (1996), 555.

⁶³ Marino Bonaiuto et al., "Feng Shui and Environmental Psychology: A Critical Comparison," *Journal of Architectural and Planning Research* 27:1 (2010), 28.

⁶⁴ Kwok, Reginald. "Geomancy: Fengshui," Lecture, University of Hawaii at Manoa, Honolulu, January 27, 2016.

 WOOD	 FIRE	 EARTH	 METAL	 WATER
GREEN	RED/ORANGE	BROWN	WHITE	DARK BLUE/ BLACK
PLANTS	TRIANGLES	WARM NEUTRALS	GRAY	MIRRORS
VERTICAL LINES	PEAKED FORMS	ROCK	METALLIC FINISHES	GLASS
COLUMNS	LIGHT FIXTURES	STONE	ROUND FORMS	SMOOTH CURVING FORMS
VIEWS OF NATURE	FIRE	SQUARE FORMS	POLISHED SURFACES	WAVING MOVEMENT

Figure 7. Five Elements Matrix with Shapes and Texture⁶⁵

The five elements are used to manipulate areas which don't have good balance. Furthermore, the ability to analyze the energy of a structure according to the Five Element Theory is a vital part of mastering the art of Feng Shui and it is clearly the subject of life-long study.⁶⁶ This reinforces the Chinese theory that everything on earth is alive, changing and interconnected.

2.3.3 Compass School

From the system of yin yang formed the Eight Trigrams or *bagua*, a method which links yin yang and the Five Elements together to read the orientation of the natural environment, usually with a feng shui compass. It forms the basic components of the 64 hexagrams found in *I Ching*. Each hexagram is structured around sets of three horizontal

⁶⁵ "The Ancient Feng Shui Philosophy in Modern Healthcare." Contract, accessed March 20, 2016. <http://www.contractdesign.com/practice/The-Ancient-Feng-Shu-8470.htm#2>.

⁶⁶ Mainini, Feng Shui for Architecture, 87.

lines that represent life-force energy defined by yin yang. Each line can be full (yang) or broken in the middle (yin), creating a total of eight possibilities, hence the Eight Trigrams. Each trigram has a name and is attributed a nature and direction.⁶⁷

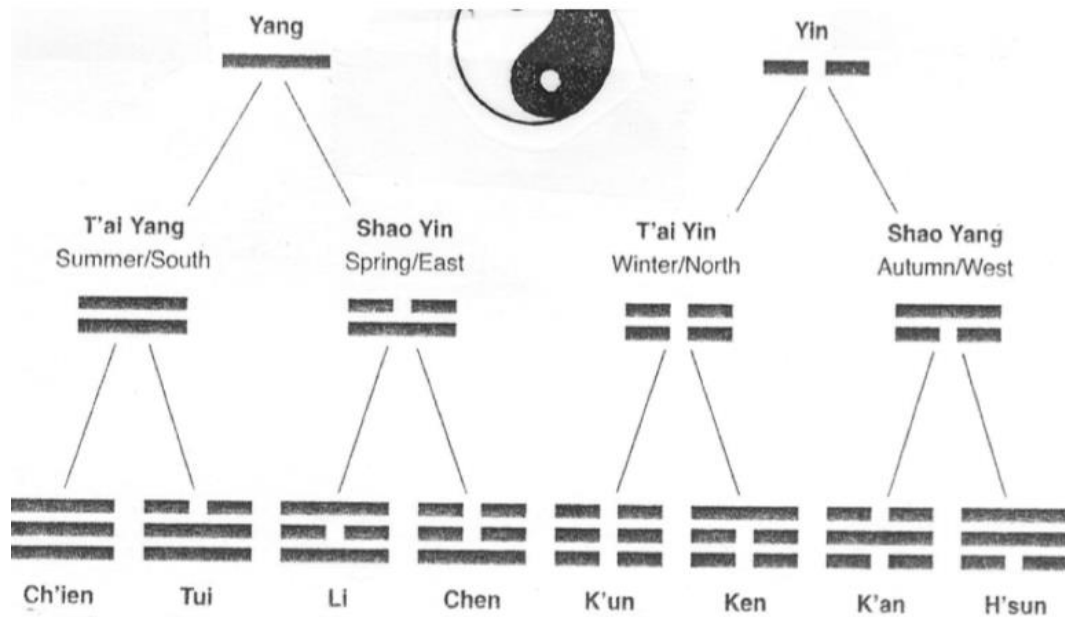


Figure 8. Three Generations of Yin Yang⁶⁸

The Eight Trigrams has two traditional versions which were developed based on yin dwelling and yang dwelling. Earlier Heaven Bagua is used for yang dwellings or burial sites and Later Heaven Bagua is used for yin dwellings or residences. Later Heaven Bagua or Houtian Bagua (Figure 8) is one of the tools essential to traditional feng shui practice and forms the basis of the feng shui compass. Figure 8a shows that each trigram relates to yin or yang, an element, and a direction. This type of bagua describes the patterns of the environmental changes. For instance, li (fire) or South is located on the top because hot air rises, and kan (water) or North is located at the bottom because water

⁶⁷ Bruun, *An Introduction to Feng Shui*, 103.

⁶⁸ Kwok, Reginald. "Geomancy: Fengshui," Lecture, University of Hawaii at Manoa, Honolulu, January 27, 2016.

flows downwards.⁶⁹ Hence, the feng shui compass used by the Compass school became a method for feng shui specialists to calculate qi at a given site.

Trigram	Polarity	Element	Direction
Qian	Yang	Metal	Northwest
Kun	Yin	Earth	Southwest
Zhen	Yang	Wood	East
Kan	Yang	Water	North
Gen	Yang	Earth	Northeast
Xun	Yin	Wood	Southeast
Li	Yin	Fire	South
Dui	Yin	Metal	West

Figure 9a. Later Heaven Bagua Attributes



Figure 9b. Basis of Feng Shui Compass⁷⁰

Hari posits that the Compass school focuses on the directions⁷¹. Compass school often involves invisible or intangible qi which is the combination of heaven, earth, and

⁶⁹Sallie Tsui Sien and Michael Hanna, "Advice Centre," Feng Shui Store, accessed December 2, 2015. <http://www.fengshuiweb.co.uk/advice/hemisphere.htm>.

⁷⁰Kwok, Reginald. "Geomancy: Fengshui," Lecture, University of Hawaii at Manoa, Honolulu, January 27, 2016.

⁷¹A.R. Hari, *Feng Shui for Health and Wealth*, (A.R.Hari: 2002).

man energy on a site.⁷² It thus relies on the feng shui compass and how they relate to an individual. The feng shui compass not only tells the directions but it also determines the flow of qi of the external landscape and internal environment. This means Compass school is more occupied with cosmological order and correlations with numerical proportions to the compass directions when investigating a site.⁷³ The feng shui compass is very complex and has been designed and represented individually by masters for their own use. The feng shui compass is based on the earth's magnetic North, which is different from geographic North. Figure 10 shows an example of the feng shui compass with Chinese characters and symbols.

Within the Compass School, there are different methods such as Flying Stars Formula. Flying Stars Formula is considered one of the most long-lasting methods of Compass school feng shui. It deals with the changing qi energy of time, involving heaven, earth and man qi calculations.⁷⁴ In this method, the feng shui compass is used to gain an accurate compass bearing of heaven qi such as the changing of seasons throughout the year; earth qi such as the age of the building; and human qi such as the specific occupant's birth date. This degree of accuracy ensures that the feng shui analysis is not only unique to that building but most importantly to the occupant in the account of time and energy with their environment.⁷⁵

⁷² Mainini, *Feng Shui for Architecture*, 74.

⁷³ Bruun, *An Introduction to Feng Shui*, 114.

⁷⁴ Lillian Too, *Total Feng Shui: Bring Health, Wealth, and Happiness into Your Life* (San Francisco: Chronicle Books, 2004), 124.

⁷⁵ "Types of Feng Shui," Feng shui Institute, accessed November 21, 2015, http://www.feng-shui-institute.org/Feng_Shui/types_of_feng_shui.html.

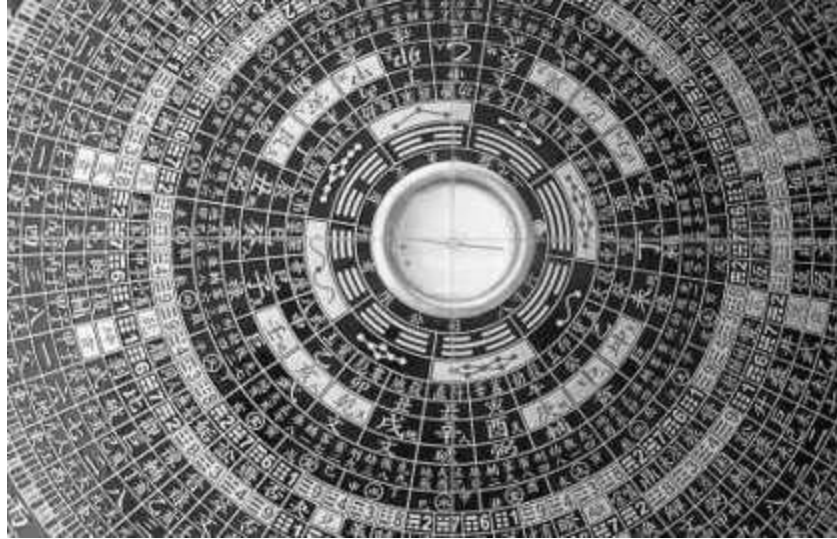


Figure 10. An Example of a Feng Shui Compass⁷⁶

2.3.4 Conclusion

At the onset of the Compass school, experts did not pay a lot of attention to the doctrines of Form school. However, in the 19th century and the early 20th century, the experts realized that it was hard to ignore principles from the Form school and as a result had to merge the two schools.⁷⁷ It is clear that both visible and invisible qi should be considered in traditional feng shui. When used properly, one can balance or enhance the other.⁷⁸ For instance, a feng shui specialist would first analyze the energy of the environment using Form school principles by observing the form of the surrounding hills and water, then use Compass school principles to calculate the orientation of the building. It is important to note that Compass school requires more complexity than Form school and, therefore, is more difficult to comprehend for researchers who are not feng shui

⁷⁶ Luopan. Digital image. Feng Shui Natural. Accessed November 21, 2015. <http://www.fengshuinatural.com/Imagenes/Luopan.jpg>.

⁷⁷ Rekhaa Kale, *Easy Guide to Feng Shui*. (Indiana: Diamond Pocket Books, 2007), 176.

⁷⁸ Mainini, *Feng Shui for Architecture*, 75.

specialists. Above all, the systems of Form school, yin yang, and Compass school form the basic principles that stay true to all practices related to feng shui.⁷⁹ The three systems do not stand independently but are interrelated.

According to Professor Kwok, in the traditional practice of feng shui, the three systems form a diagrammatic plan which results in the built form design for spatial organization⁸⁰ (Figure 11). Due to the specific calculations involved, including the unknown calculations of potential occupant's birth dates, the Compass school became irrelevant to the project. Therefore, the project will shy away from using the traditional systems and only focus on Form school and yin yang. In other words, this paper will aim to provide guidelines for analyzing site characteristics and the balance between positive and negative qi. The purpose is to show that architects can consider feng shui while designing without the requirement of hiring a feng shui specialist. With this in mind, it can be said that any feng shui practices will be more accurate with a feng shui specialist involved.

⁷⁹Bruun, *An Introduction to Feng Shui*, 106.

⁸⁰Kwok, Reginald. "Geomancy: Fengshui," Lecture, University of Hawaii at Manoa, Honolulu, January 27, 2016.

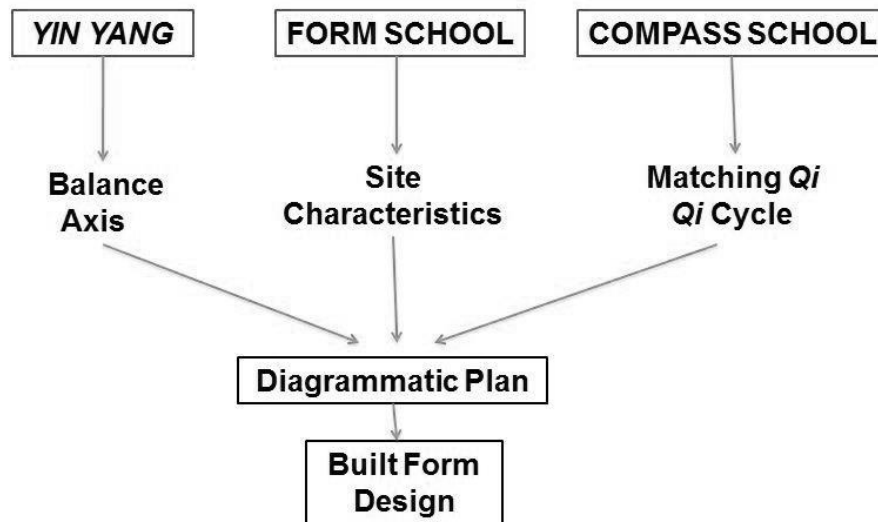


Figure 11. Feng Shui System for Spatial Organization⁸¹

2.4 Urban Feng Shui

The practice of feng shui naturally emerged in populated areas. According to Bruun, increasing wealth, diversification of lifestyles and a desire for greener environments resulted in a shift towards cultural and social identity markers including feng shui.⁸² Even though feng shui began in a rural context, feng shui principles can still be seen in urban design. In fact, feng shui principles were in some instances used to build entire cities.⁸³ For example, Beijing in the People’s Republic of China was selected to be the nation’s capital according to its surrounded series of mountains, which supports good feng shui (Figure 12). More literally, Tekes City in Xinjiang, China is the only city

⁸¹ Kwok, Reginald. "Geomancy: Fengshui," Lecture, University of Hawaii at Manoa, Honolulu, January 27, 2016.

⁸² Ole Bruun, "Is Chinese popular religion at all compatible with ecology?," in *Religion and Ecological Sustainability in China*, ed. James Miller, Dan Smyer Yu and Peter van der Veer (UK: Routledge, 2014), 171.

⁸³ M. Y. Mak, "Application of Feng Shui principles to major cities in the world," *The Architectural Science Association* (1998): 83-89.

in the world constructed in accordance with the pattern of Eight Trigrams as mentioned earlier. The buildings are laid out accordingly to the trigram symbol, shown in Figure 13.



Figure 12. Map of Beijing Surrounded by Mountains⁸⁴



Figure 13. Tekes City⁸⁵ and Eight Trigrams Symbol⁸⁶

As time went by, the discipline was used to determine the best sites for establishing palaces and other public structures such as offices and monuments. Hong

⁸⁴ “Beijing.” *Google Maps*. Accessed 20 November 2015. Web.

⁸⁵ “Tekes City.” *Google Maps*. Accessed 15 November.

⁸⁶ The Eight Trigram. Digital image. Geomancy. Accessed November 20, 2015. <http://www.geomancy.net/resources/fst/fst-shapes-8trigram.htm>.

Kong is an example where feng shui is taken seriously and can be seen in the geometry of the architecture.⁸⁷ For instance, the Bank of China designed by I.M Pei in Central district has been criticized for having bad feng shui because its building form displays sharp edges which direct bad qi to its surrounding buildings. To an extent, urban feng shui proves to stay true to its original practice of creating harmony with the surrounding environment but faces some modifications and challenges in the urban context.

2.4.1 Modifications

Urban feng shui opened doors to interpreting the built environment on both a macro and micro level. On a macro level, the closest body of water and mountain range can be detected to analyze the best armchair form. In terms of city planning, feng shui influences landform and reinterprets feng shui in relation to the urban fabric. For example, roads are interpreted as rivers and surrounding buildings are interpreted as mountains. An open space or a park is interpreted as a large body of water and electric lights are interpreted as sun light. Figure 14 shows a table of land form transfers.

On a micro level, surrounding buildings can determine the appropriate height and orientation of the proposed building. In addition, the interior of a home such as furniture placement can be arranged according to feng shui principles. In this case, architectural elements relating to form and color can also be used as an advantage. Regarding the Five Elements mentioned earlier, since the cycle of opposition has a strong impact on people's well-being and can bring serious health problems if it is not corrected,⁸⁸ one can introduce a symbiotic element to neutralize two opposing elements. For example, if the

⁸⁷ Damian Harper, *Lonely Planet China* (Australia: Lonely Planet, 2013), 230.

⁸⁸ Mainini, *Feng Shui for Architecture*, 86.

homeowner is an earth element; since fire produces earth, the homeowner should be surrounded by fire elements, such as the color red. Since wood destroys earth, it is bad to have too many wood elements surrounding the homeowner, such as trees or the color green. In addition to finding the homeowner's element and lucky colors, the Five Elements can also determine the lucky directions and rules for decorations.⁸⁹

RURAL	URBAN
River, Stream (Yin)	Road
Mountains, Hills (Yang)	Surrounding buildings
Pools, Lakes (Yin)	Park, Open space
Sun light (Yang)	Electric lights
Graves (Yin)	Cemetery, Hospitals

Figure 14. Land Form Modifications⁹⁰

2.4.2 Design Problem

Unfortunately due to the density of the urban environment, the application of feng shui faces a few challenges in urban design, which serves as the design problem of the project. Transitioning from the traditional understanding of feng shui to an urban reinterpretation, there are two challenges which are revealed. Firstly, because feng shui

⁸⁹ "China's Five Elements Philosophy," China Highlights, updated July 30, 2015, accessed November 21, 2015, <http://www.chinahighlights.com/travelguide/chinese-zodiac/china-five-elements-philosophy.htm>.

⁹⁰ Kwok, Reginald. "Geomancy: Fengshui," Lecture, University of Hawaii at Manoa, Honolulu, January 27, 2016.

originated in rural areas, concepts such as orientation were flexible as land was not an issue. In a modern city designed by urban planners, there is less flexibility. In other words, orientation serves as a challenge when choosing a site. As originally stated the ideal site or armchair form opens up to the South and the system of yin yang encourages the North-South axis, but being based on the rural setting of China, the reason behind opening up to South can be adjusted. Opening up to the South for sun exposure is applicable, but the rear protection of the site is mainly for the strong Northern winds, which means not all sites, especially outside of China, will need protection. Also, due to the limited land use and choice for the ideal home, it is unusual to find a lot directly facing south. Therefore, the more important factor is the idea that the site should be taking advantage of the wind and sun disregarding whether it is South facing or not.

Secondly, the condition of the site such as existing conditions is uncontrollable and should be highly considered when designing. Often in the urban context, the site condition may not be ideal in a rural feng shui site. For instance, it is recommended that the lot is on a slight slope but nowadays in dense cities most land is flat. Also, another characteristic that may be disruptive to feng shui is the proximity to cars and surrounding buildings. It is difficult to find the ideal feng shui site without having to face these challenges. To provide remedies or alternatives to a non-ideal feng shui site, an important goal is to maintain a balance of positive and negative energy within the environment.

Urban feng shui has also allowed a number of feng shui practitioners, clients, and believers to interpret and reinterpret feng shui in accordance with the context of their own

lives.⁹¹ For instance, a feng shui specialist could interpret a road pattern to be unfavorable but at the same time another feng shui specialist may disagree. As a result, there is a need to carefully dismiss any myths and assumptions when analyzing a site, and also to determine applicable feng shui principles relating to architecture. That being said, it is necessary to explore the spread of feng shui to the West where new schools of feng shui have sprung up mixing elements of Asian philosophy with Western outlooks.⁹²

2.5 Feng Shui Exposure in the West

The study of feng shui enabled Western researchers to gain the intuitive and logical thinking from the East. In the book, “The Geography of Thought”, Nisbett explains how Asians and Westerners think differently. Asians or Eastern people pay more attention to the whole and harmony, emphasizing human relationships; they think the world is constantly changing and interrelated and complex. Westerners, on the other hand, pay more attention to personal values, freedom, and personality development; they think that the world is fundamentally unchanging and static and the object is isolated.⁹³ Hence, Westerners find reasoning through tactical and scientific processes, while Asians are willing to find a middle ground and focus on the background of the substance. That is to say, the concepts of feng shui received much attention in the West.

2.5.1 Western Acceptance of Feng Shui

Chinese missionaries introduced the concept of feng shui to the West in the nineteenth century. Reverend Yates (1868) was the first person to write an English article

⁹¹ Bruun, *An Introduction to Feng Shui*, 3.

⁹² Bruun, *An introduction to Feng Shui*, 3.

⁹³ Sylvester Chen and Michael Kompf (Eds.), *Chinese Scholars on Western Ideas about Thinking, Leadership, Reform and Development in Education* (The Netherlands: Sense Publishers, 2012), 124.

about the concept and in 1873, the first Western book detailing the feng shui concept was published by Rev. Ernest J. Eitel. All these authors, however, described feng shui as a mysterious concept that was partly a science and partly a superstition.⁹⁴ This description emanated from its abstract and invisible nature.

The first time that the West developed an interest in feng shui was in the late 1950s and early 1960s as posited by Needham (1956) in his study of the traditional Chinese science. Having been trained in the West as a scientist, Needham defined the concept as a pseudoscience and hence started relating the subject to the physical environment. Pseudoscience, defined by Oxford, is a pretended science; a collection of related beliefs about the world that is mistakenly regarded as being based on scientific methods. Needham argued that feng shui embodied a marked aesthetic component, which accounts for the great beauty of the siting of the so many farms, houses, and villages throughout China.⁹⁵ In other words, there began to be an interest of the value of feng shui in ecology and landscape aesthetics. The associated term, pseudoscience is agreeable, but however, feng shui is more than just an aesthetic; according to Lynch, it opens up to common awareness and interpretation.

Urban planner Kevin Lynch (1960) in his most influential book, “The Image of the City”, introduces the idea of “imageability”, which is defined as a character or quality held by a physical object. The elements of imageability are paths, edges, districts, nodes and landmark, and although the visible environment can be achieved by these elements, it

⁹⁴Bi Xia Chen, and Yuei Nakama, “A summary of research history on Feng-shui and application of Feng-shui principles to environmental issues,” *Kyusyu J. Forest Research* 57 (2004): 298.

⁹⁵Chen and Nakama, “A summary of research history,” 298.

faces a disadvantage. Lynch argues that in addition to vivid images which elevate the experience of the city, it should also speak of the individuals and their complex society.

He writes:

As a peculiar example of how the dilemma can be resolved, even in an irrational way, we may take the Chinese pseudo science of geomantics...Possible interpretations are many and complex; it is an endlessly expanding field which experts are exploring in every direction. Divorced from the reality as this pseudo science may be, yet it has for our purposes two interesting features: first, that it is an open-ended analysis of the environment: new meanings, new poetry, further developments are always possible; second, it leads to the use and control of outside forms and their influences: it emphasizes that man's foresight and energy rule the universe and can change it. Perhaps there are hints here as to ways of constructing an imageable environment that is not at the same time stifling and oppressive.⁹⁶

In view of Lynch's interpretation of the symbolic and poetic meaning of the man to the physical environment, Freedman (1969) uses feng shui to describe "a ritual aspect" of the interaction between them.⁹⁷ He made the case that feng shui is "the most systematic statement of Chinese ideas about the constitution and working of the cosmos," which enables "men to build what they need and want without destroying their natural relationships with the cosmos".⁹⁸ Alternatively, feng shui is embedded into Chinese culture. Anderson and Anderson (1973) recognized that feng shui is "the traditional Chinese science of site planning," containing "an organized body of knowledge, intensely practiced in application, and of specific intent".⁹⁹ That is to say, in contrast to the interpretations of feng shui being a superstition, aesthetic, and a complex form of belief, it also helps the individual interpret the environment in a harmonious way. Feuchtwang

⁹⁶ Kevin Lynch, *Image of the City* (Cambridge: MIT Press, 1960), 139.

⁹⁷ Maurice Freedman, "Geomancy," *Proceedings of the Royal Anthropological Institute of Great Britain and Ireland* (1969): 12.

⁹⁸ Freedman, "Geomancy," 13.

⁹⁹ Michael Y. Mak and Janet X. Ge, "Feng Shui: A Chinese Perspective of Sustainability," *Global Chinese Real Estate Congress 2012 Annual Conference* (2012): 3.

(1974) distinguished feng shui from religion and instead says it is the equilibrium amongst nature, building, and people. It helps with self-identification and operates in reality to serve specific interests.¹⁰⁰

In agreement with Feuchtwang, Lee (1986) studied the principles and practices of feng shui which aims at creating a harmonized built environment for people to live in. Lee reiterated the fact that feng shui represents a traditional Chinese architectural theory for selecting favorable sites as well as a theory for designing cities and buildings.¹⁰¹ Moreover, Bruun (2008) emphasized that feng shui is inspiration for new models of intentional design, including value-orientated processes that capture the complexity of cultural life.¹⁰² Therefore, it can be said that feng shui in the West spread from an abstract nature to a new perspective on designing buildings with the natural environment, provided that it is central to any understanding of Chinese cultural history.¹⁰³

2.5.2 Intuitive Feng Shui

The West related feng shui to personal intuition, which is the perception beyond the physical senses and affects the way the individual thinks, decides and behaves.¹⁰⁴ As a result, Intuitive feng shui gained popularity in the West as an understandable and tangible concept. Intuitive feng shui or modern feng shui is a simplified version introduced in the West which represents what is appropriate in the world of feng shui for

¹⁰⁰ Bruun, *An Introduction to Feng Shui*, 89.

¹⁰¹ Mak and So, *Scientific Feng Shui*, 2.

¹⁰² Bruun, *An Introduction to Feng Shui*, 98.

¹⁰³ Jon Puro, "Feng Shui," *The Skeptic Encyclopedia of Pseudoscience* Volume 1 (2002): 108.

¹⁰⁴ Shawn Mitchell and Stephanie Gunning, *Exploring Feng Shui: Ancient Secrets and Modern Insight for Love, Joy, & Abundance* (New Jersey: New Page Books, 2000), 27.

the times we live in as we develop our conscious connection to the universe.¹⁰⁵

According to Birdsall, this method has developed from a greater understanding throughout the world of Eastern philosophies and a wider acceptance of approaches to life.¹⁰⁶ The practice involves combining traditional principles with intuition, common sense and a cultural understanding of the society where it is to be applied so that the best of both worlds can be achieved. Rather than trying to analyze and interpret systems of energy or specific cultural ideologies from ancient times, the Intuitive feng shui specialist bases his or her work on direct experience, knowledge, understanding, and intuition of the many ways that color, shape, texture, patterns, materials, and the architectural structure and placement of furniture can be adjusted to regulate the flow of energy.¹⁰⁷

The most developed Intuitive feng shui schools are the Black Sect Tantric Buddhism (BTB) and the Eight Aspirations Bagua which gained popularity in the mid-1980s. Due to the complexity and Chinese symbolism of the traditional bagua versions, the Eight Aspirations Bagua has been developed to fit into Western modern forms of feng shui. This is done by associating each of the nature elements to an aspiration in life (Figure 15). For instance, South/Fire is hot and bright, like fame; SouthWest/Earth is feminine, which is a quality of marriage relationships; West/Metal is a place of inspiration and birth of ideas, which is related to children; NorthWest/Metal (or Heaven) is a place of divine beings, which is also a place for helpful people; North/Water brings life to crops, which symbolizes money and means career; Northeast/Earth (or Mountain)

¹⁰⁵ “Understanding the Different Schools,” Learn about Feng Shui, accessed December 3, 2015, <http://www.learn-about-feng-shui.com/world-of-feng-shui.html>.

¹⁰⁶ George Birdsall, *The Feng Shui Companion: A User-friendly Guide to the Ancient Art of Placement* (Massachusetts: Destiny Books, 1997), 47.

¹⁰⁷ Mitchell and Gunning, *Exploring Feng Shui*, 27.

is where one meditates and gains knowledge; East/Wood (or Thunder) is a reminder to respect the family and elders; and Southeast/Wood (or Wind) signals new possibilities, which means fortune and wealth.¹⁰⁸

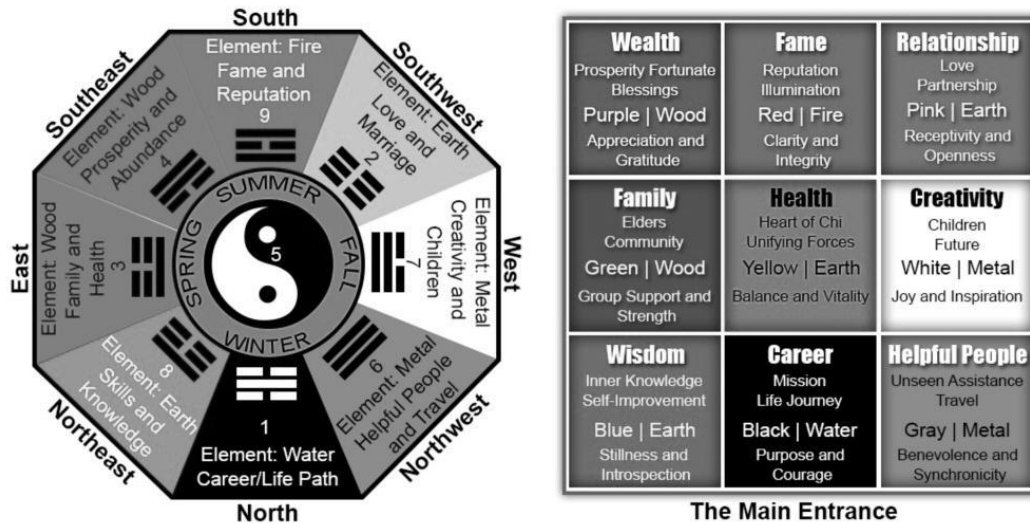


Figure 15. The Eight Aspirations Bagua¹⁰⁹

Hence, the eight aspirations which contribute to the individual’s well-being are fame, relationship, children, helpful people, career, knowledge, family, and wealth. Modern day users are able to use the Eight Aspirations map and learn to position and analyze the energy of their home according to the placement of the door. Although this method originates from feng shui principles, it does not require the occupant’s birth date and, therefore, is a less accurate source for feng shui specialists to use.¹¹⁰ In other words, in addition to this tool, other methods should be used, such as from the Form and

¹⁰⁸ *Feng Shui: Creating Environments for Success and Well-being*. Directed by Deborah Gee. Feng Shui Productions, 1999. Film.

¹⁰⁹ “Vitality of feng shui in your apartment,” Apartment Ideas, accessed December 13, 2015, <http://www.apartment-ideas.com/feng-shui.html>.

¹¹⁰ Clarence K. Lau, interview by Author, Jade Dynasty Restaurant, September 18, 2015.

Compass schools. Nevertheless, the Eight Aspirations Bagua remains an effective guide for designing homes and allocating spaces.

The ease of implementation of intuitive feng shui compared to traditional gained popularity among interior designers, architects, and realtors. For instance, Bruce Pao, the Principal Architect from IPA Design San Francisco, claims that feng shui deals with issues that designers forget about such as how individuals move through the space.¹¹¹ It is clear that there is an advantage for architects to approach design with feng shui, and that is to enhance the well-being of people. In addition, architects can also benefit from using environmental feng shui principles such as observing the landform which comes from traditional feng shui. Therefore, it can be said that Western architectural feng shui principles adapt from both traditional and modern feng shui practices. More importantly, a few researchers have already attempted to find commonalities between feng shui principles and architectural practices relevant to today

2.6 Recent Studies on Feng Shui and Architecture

The process of presenting feng shui principles is complex and multi-layered. This might explain why researchers choose to focus on certain principles over others. Furthermore, the studies provide a parallel analysis of feng shui architectural principles with architectural practice. The influential role of feng shui in the macro and micro scale is also explored to see how they can be relevant to modern day practices. Recent studies on feng shui related to the architect's perception, urban scale, and space enhancement are discussed.

¹¹¹ *Feng Shui: Creating Environments for Success and Well-being*. Directed by Deborah Gee. Feng Shui Productions, 1999. Film.

2.6.1 Architect's Perception

Building professionals have recognized Form school to be more scientific in the analysis of the building environment as compared to the Compass school.¹¹² This is because Form school is a viable model for analyzing and planning the landscape, and it has both cultural and ecological significance thus making it an ideal model for most architects' perception of an ideal landscape. Therefore, Form school principles have been widely studied and used by many researchers and architects. In fact, it has been used as a tool to demonstrate that feng shui principles align with the architect's perception and their design processes.

In addition to landscape planning, the principles have also been applied to the built environment in order to orient buildings, and to create a good interior layout for the buildings.¹¹³ According to the survey that was conducted by architects from Hong Kong and Sydney to verify whether the design of architects based on more scientific derivation is likely to be in line with the ancient feng shui theories, it was found that the selection of surrounding environment for a building and interior layout as proposed by the architects generally concurs with the ideal feng shui model established thousands of years ago.¹¹⁴ This means that architects may intuitively have a good perception of feng shui and thus, it is natural to design and build by using the theories or principles of feng shui.

To study the use of feng shui as part of a design process, researchers also aim to provide a framework for architects. For instance, Xu derived the groups: river, mountain,

¹¹² Mak and Ng, "Art and Science of Feng Shui," 427.

¹¹³ Sun-Kee Hong, In-Ju Song and Jianguo Wu, "Fengshui theory in urban landscape planning," *Urban Ecosystem* 10 (2007): 229

¹¹⁴ Mak and Ng, "Art and Science of Feng Shui," 427.

orientation and vegetation from the Form school model and found that there are commonalities between feng shui and Western environmental principles in the site analysis stage. The commonalities are temperature, wind speed, and direction, relative humidity, solar radiation, relation to bodies of water and the shape of bodies of water, flood area, soil type and quality, slope, and vegetation, which can further be grouped into geology, hydrology, topography, and vegetation.¹¹⁵ He concludes that these are all part of the environmental category that adds on to the other categories; economic, socio-cultural and infrastructure which complete the site analysis framework.

Another example is a study by Mak and Ng on using feng shui as an alternative framework for design. They emphasize that Form school principles are applicable to both the macro scale (design of the city, selection of a site, etc.) and micro scale (orientation of the building, interior layout, etc.). Through the reasoning of four fundamental concepts, they found the criteria required to represent what needs to be considered during the design process.¹¹⁶ They conclude that the macro scale responds to the surrounding environment of the site and micro scale responds to the external layout, internal layout, and interior arrangement. As broad as it seems, each criterion accompanies the other; for instance, wind direction may affect the orientation of the external layout, and the shape of land may affect the internal layout. The criteria of each are as follows¹¹⁷:

¹¹⁵ Xu, "Framework for Site Analysis," 47.

¹¹⁶ Michael Y. Mak and S. Thomas Ng, "Feng Shui: An Alternative Framework for Complexity in Design." *CIB World Building Congress* (2007): 1647.

¹¹⁷ Mak and Ng, "Feng Shui: An Alternative Framework," 1648.

MACRO

Surrounding Environment:

- Topography
- Front of Site
- Rear of Site
- Sides of Site
- Street Location
- Water
- Wind Direction

MICRO

External Layout:

- Shape of Land
- Entrance
- Shape of Building
- Orientation
- Trees
- Pond

Internal Layout:

- Layout
- Doors
- Windows
- Shape of Rooms
- Staircase
- Ceiling

Interior Arrangement:

- Door Opening
- Bedroom
- Kitchen
- Living Room
- Bathroom

2.6.2 The Urban Scale

Macro scale projects such as urban developments and planning across Asia have largely been influenced by the traditional philosophies and cultural legacies like feng shui.¹¹⁸ For instance in Seoul, traditional land use practices based on feng shui have significantly contributed to the landscape and land expansion patterns.¹¹⁹ A study by Hong, Song and Wu identify the spatial patterns of landscapes and expansion of urban areas in Seoul by using cognitive mapping. For instance, a painting of the urban landscape pattern in Seoul is shown with landscape elements (Figure 16). From this, geophysical attributes of land like pattern, connectivity, size, shape, arrangement and

¹¹⁸ Richard T. T. Forman, "Ecologically sustainable landscapes; the role of spatial configuration" In *Changing Landscapes: An Ecological Perspective* (1999): 261–278.

¹¹⁹ Hong et al., "Fengshui theory in urban landscape planning," 221.

direction of mountain landscapes can be identified.¹²⁰ For instance, high mountain protects areas against the winter wind and keeps the temperature warm, and low terrains with abundant water supply are ideal to be used as rice production fields.¹²¹ They conclude that although the landscape pattern of Seoul historically has been shaped by feng shui, recent changes in cultural traditions with modernization and Western influences have modified, and sometimes been integrated into the developing landscapes.¹²² This only means that in any given geographic location, understanding of cultural traditions must be considered. Hence, Feng shui forces designers to focus on the overall background, context and meaning of a site.

¹²⁰ W. Holzner, M.J.A. Werger, and I. Ikushima, *Man's Impact on vegetation* (Australia: The Hague, 1983).

¹²¹ Hong et al., "Fengshui theory in urban landscape planning," 227.

¹²² Hong et al., "Fengshui theory in urban landscape planning," 234.

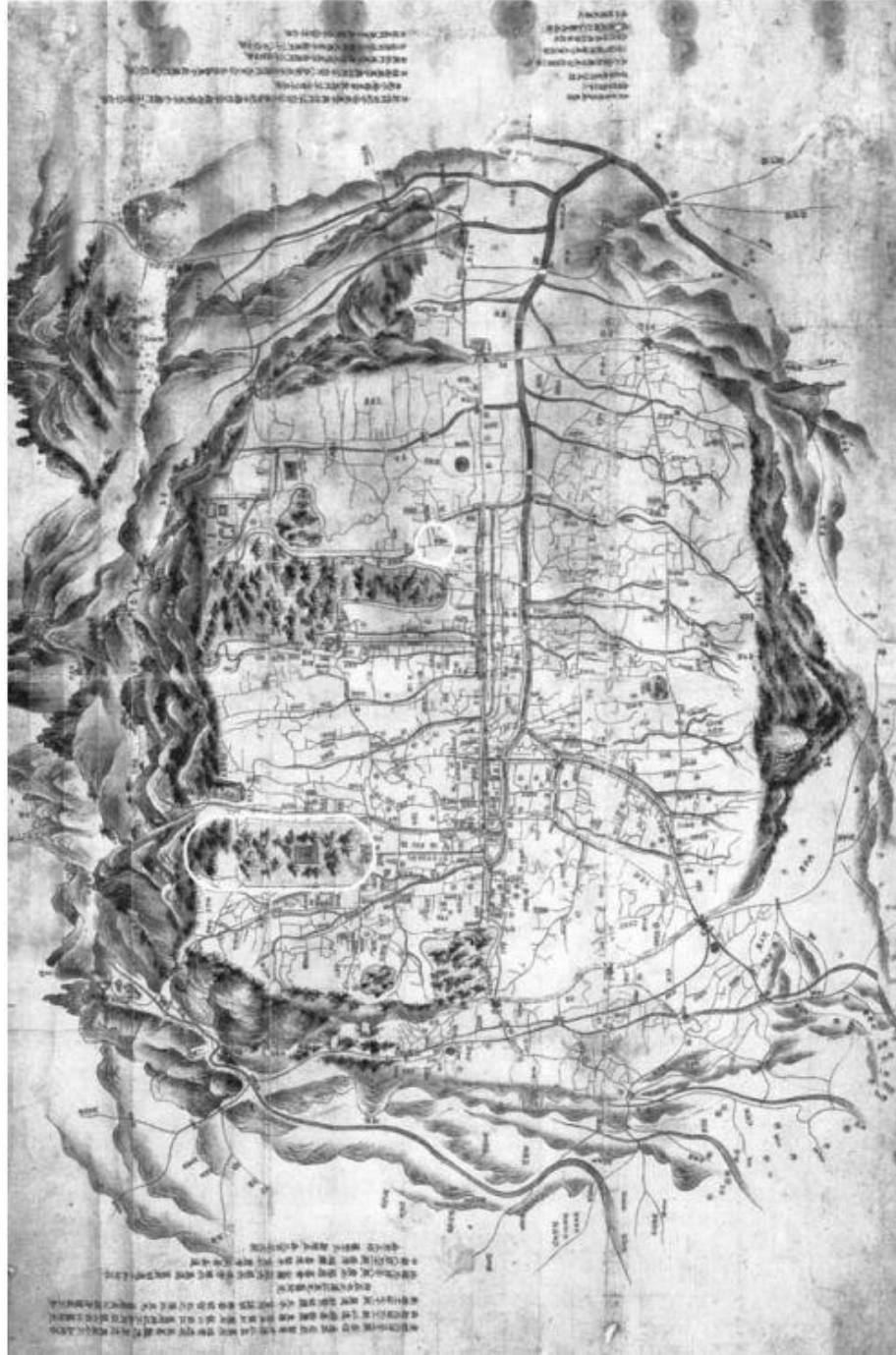


Figure 16. Painting of Urban Landscape Pattern in Seoul¹²³

¹²³ Hong et al., "Fengshui theory in urban landscape planning," 228.

2.6.3 Space Enhancement

Along with viewing the landform patterns, micro-scale approaches such as relationships between spaces on the site should equally be considered. This is because the way qi flows affects how objects orient and relate to each other, and eventually it affects the individual. A study by Wei uses the Four Emblems theory and Five Elements theory to develop the program and shape of a cancer treatment facility. As an example, Wei associates the rear of the building (black tortoise) with security and develops the living building; the building's left side (azure dragon) to be the space with the main activity and develops the medical consulting building; and the building's front side (red phoenix) with great vision and develops the entrance (Figure 17).¹²⁴ Furthermore, the shape of the building is translated from the Five Elements as well. The relationships of the form which connect or disconnect from each other are achieved by the generative cycle. As a result, this study offers a design solution derived from the concepts of feng shui to provide a more spiritual meaning to the built environment.¹²⁵ That is to say, to enhance the relationship between buildings and their surrounding environment.

¹²⁴ Shou-Jung Wei, "Body, Mind, and Spirit: Feng Shui Applications for a Healing Environment Prototype," (Thesis, Florida State University, 2006), 75.

¹²⁵ Wei, "Body, Mind, and Spirit," 90.

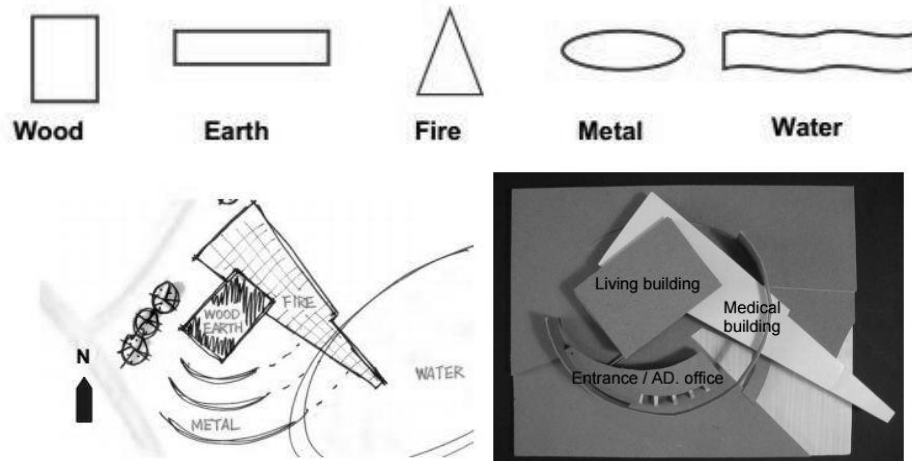


Figure 17. Form-Finding through Five Elements ¹²⁶

Feng shui also forces the designer to focus on the client or any individual involved in decision making. A study by Chiu, Chuang, and Lin brought up the fact that feng shui environment is often one of the important factors taken into consideration when purchasing housing in an Asian population. Hence, the study provided a survey to evaluate common attributes for townhouses housing types in Taiwan ¹²⁷ Responses include eight feng shui attributes; three exterior and five interior, which shows that clients may put more emphasis on interior feng shui conditions. Furthermore, this study provided a complex tool for designers without the knowledge of feng shui to evaluate the reuse of houses, and may benefit both the building profession and client in the process.

2.7 Western Feng Shui Principles

Some Western feng shui professionals attempt to provide a guide for architects to apply feng shui to their design. For instance, Simona Mainini, a feng shui master with an

¹²⁶ Wei, "Body, Mind, and Spirit," 78.

¹²⁷ Jin-Yin Chiu et al., "Constructing a CBR decision model for purchasing a town house combining individual demands and Feng Shui environment," *Journal of Food, Agriculture & Environment* Vol. 11 (2) (2013): 965.

architecture background from Italy wrote on features to avoid and consider when finding a site and designing a home. Alex Stark, a feng shui teacher, and consultant also with an architecture background from the United States and Europe emphasizes on the considerations of the external and internal environment of the home as a healing environment. On the same note, feng shui teacher and consultant Vincent Smith and architect Barbara Lyons Steward from the United States co-authored a book on feng shui solutions for site planning and schematic design. Furthermore, the following architectural feng shui principles are categorized according to the knowledge of Western scholars who has practiced feng shui and at the same time encourage architects to incorporate feng shui into their design. The principles found in this section will later be used to develop the design guidelines for the project.

2.7.1 Armchair Form

In feng shui, it is important to first analyze the natural conditions of the site on a macro scale. The natural conditions include landform, wind and water patterns, vegetation, sun exposure, and soil conditions. The landform can be analyzed by first understanding the best building-site layout "armchair", mentioned earlier as part of Form school (Figure 18). One of the main principles of feng shui is having protection to support the rear side; hence, the armchair form is important because it protects the building from strong winds behind. The main concepts of the armchair are the four directions; "the Black Turtle" is on the rear tallest mountain (north), "the Azure Dragon" is on the right side mountain (east), "the White Tiger" is shorter and is on the left side mountain (West), and "the Red Phoenix" is on the front with a small mountain afar

(south).¹²⁸ The reason that the Azure Dragon is taller is because it receives the first energy of the sun. The ideal site location is "the Dragon's Nest" located in the middle of the armchair. Moreover, the land at the back should be higher than the site and slope gently toward it, but not too steep.¹²⁹

In Chinese culture, yin and yang must be present for humans to prosper. In terms of landscape, yin energy is associated with mountains and yang energy is associated with water, therefore between the armchair and the Red Phoenix, there is a river. For the river, it is more favorable for the site to be on the inside curve of a gently flowing stream of clean water and not too close to a large body of water as it can be overwhelming.¹³⁰ For the mountains, the ideal type should incorporate soft curves filled with green and healthy leaves.¹³¹ It is important to avoid building at the highest point of the mountain or land where it is overly exposed to the sun, wind and rain. It is important to find where the strong and soft winds are coming from. According to Mainini, soft wind breezes are beneficial to carry the qi, but strong winds break it and blow it away.¹³² The quality of the environment is also important, such as air, water, and soil conditions. The site should not be in close distance to an industrial area and the soil should be healthy and non-toxic.¹³³

¹²⁸ Alex Stark, "Topography and Landform," Alex Stark, accessed December 5, 2015, <http://alexstark.com/pdfs/Topography.pdf>, 11.

¹²⁹ Stark, "Topography and Landform," 12.

¹³⁰ Mainini, *Feng Shui for Architecture*, 107.

¹³¹ Mainini, *Feng Shui for Architecture*, 95.

¹³² Mainini, *Feng Shui for Architecture*, 106.

¹³³ Marsha Cheung Golangco, *The Power of Feng Shui for Builders* (J.A. Jocson Publication Services, 2005), 24.

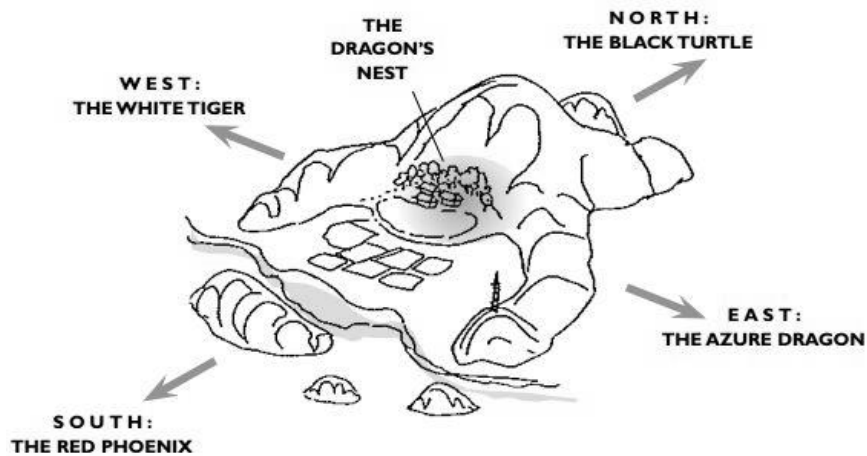


Figure 18. Ideal Feng Shui Armchair Model

2.7.2 Urban Context

As mentioned earlier in urban feng shui modifications, feng shui in urban areas don't have mountains and rivers part of the landscape and instead there are buildings and roads.¹³⁴ For instance, the building under consideration should be as tall as or slightly shorter than the one behind it, and the buildings on the side should be the same height or slightly shorter. Buildings close to each other should be more or less the same height.¹³⁵ Shielding at the back can also be found in other man-made forms such as fences or walls.¹³⁶ Another major part of feng shui which generates negative qi is sharp corners or unsettling objects facing the proposed site. These are called “wall knives”; sharp corners that point to the site. It is best to avoid these corners by screening off the view.¹³⁷

¹³⁴ Golangco, *Power of Feng Shui*, 21.

¹³⁵ Mainini, *Feng Shui for Architecture*, 108.

¹³⁶ Golangco, *Power of Feng Shui*, 48.

¹³⁷ Stephen Skinner, *Feng Shui Style: The Asian Art of Gracious Living*, 6.

Streets can serve as qi carriers as well and replace the river in front of the building, but the presence of water is always favorable.¹³⁸ Therefore, it is preferred if there is a view of the ocean, or if there is a water feature in the landscape. Similar to the meandering river, streets should also curve because negative qi travels on a straight line.¹³⁹ Given the variety of road patterns, roads with sharp and straight turns are harmful as well and is preferred if they are curved (Figure 19). Another aspect of the road is the traffic flow. Busy traffic, especially on a main road, carries heavy qi. Quiet traffic carries lighter qi. It is overwhelming if the traffic is too busy such as on a highway. In addition, the direction of traffic also affects the site. Qi flows in the direction of the traffic. For instance, if the street is two-way, qi would flow two-way, but if the street is one-way, qi would only be flowing through one-way.

Another factor for selecting a site is the building's lot criteria. The land elevation of the site should not be lower than the adjacent street. It should be leveled or higher. If the lot is sizable enough, and there is an open view on the side opposite the street, the house can be oriented to face the rear view so that the high level of the street would be behind the building, serving partially as a raised area supporting "tortoise".¹⁴⁰ Another criterion is the shape of the building's lot. This has to do with more of the interplay of yin and yang forces on the site. Regular shapes include rectangular, square, circular and octagonal; any irregular lot shape can be balanced with landscaping. In addition, it is preferred if the house frontage is parallel to the street side of the shape, if it is not, then

¹³⁸ Mak and Ng, "Art and Science of Feng shui," 429.

¹³⁹ Golangco, *Power of Feng Shui*, 11.

¹⁴⁰ Mainini, *Feng Shui for Architecture*, 98.

trees and vegetation should be placed to avoid sharp corners.¹⁴¹ Similar to how the armchair form has the front of the site open up to the phoenix, so should a lot be big enough for the building to open up and receive positive qi in the front.¹⁴²

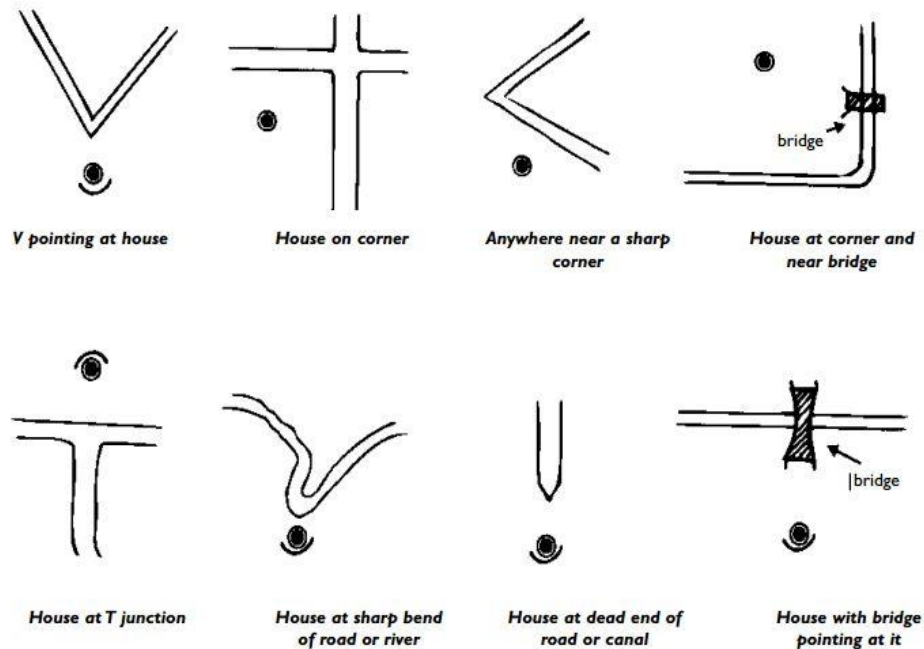


Figure 19. Harmful Road Patterns¹⁴³

2.7.3 Orientation

In addition to the armchair form, the building's orientation is also determined by where it is facing and sitting. Facing means the front of the building with yang energy (most active) and sitting refers to the back of the building with yin energy (most quiet). Skinner writes that the facing direction should have the front door, big door, big windows, side with a most impressive view, main road, most heavily used door, near gate or main access path, side of most social activity, the side facing a body of water, downhill

¹⁴¹ Stark, "Topography and Landform," 25.

¹⁴² Mainini, *Feng Shui for Architecture*, 91.

¹⁴³ Stark, "Topography and Landform," 25.

and sunniest side. Sitting direction should have the back door, smaller doors, small windows, less interesting view, service lane, hardly used door, near the back fence, least activity, away from water, uphill, and shadiest side.¹⁴⁴

According to Sang and Luk, general guidelines to find the facing and sitting sides of a building are the main entrance (usually on the facing side of the building), traffic (heaviest on the facing side) and interior placement (bedrooms or kitchens are located on the sitting side of the building and living rooms are on the facing side).¹⁴⁵ Incorporating a clear facing and sitting component is important for the feng shui use of the Eight Trigrams. This is important because once the residential building is built; the orientation and layout of the unit cannot be changed.

It is important to note that the orientation of the building may depend on the feng shui compass direction or the topography of the landscape¹⁴⁶. In a single home, homeowners and the building construction date play an importance. In an apartment building, there may be property restrictions. For instance, if the property's east side faces the main street, then the east would be the facing side, but the entry could be placed on the south side close to the parking. That being said, according to Golangco, it is important to avoid inauspicious directions, which can be calculated by the feng shui compass.¹⁴⁷

¹⁴⁴ Stephen Skinner, *Flying Star Feng Shui: Change Your Energy; Change Your Luck* (USA: Tuttle Publishing, 2002), 42.

¹⁴⁵ Larry Sang and Helen Luk, *The Principles of Feng Shui* (American Feng Shui Institute, 1995), 59-60.

¹⁴⁶ Shelley Mallett, "Understanding home: a critical review of the literature," *The sociological review* 52, no. 1 (2004): 62-89.

¹⁴⁷ Golangco, *Power of Feng Shui*, 67.

2.7.4 Building Form and Structure

Another important principle in feng shui is to minimize sharp edges, points, and corners.¹⁴⁸ The most desirable shape of a building is a square or a slightly rectangular overall perimeter. The balanced shape allows a favorable flow of qi within the interior of the building.¹⁴⁹ Trapezoidal building shapes can also be balanced, but only if the sitting side is the larger side. Irregular building shapes such as triangular shapes create confusion and, therefore, qi obstruction. Internal structural beams and posts should be incorporated into the walls and ceilings/roof. Exposing the structural members break the qi flow in the room.¹⁵⁰ In addition, the foundation of the building should be stable.

2.7.5 Space Planning

According to Smith and Stewart, during the schematic design phase, it is important to keep in mind a few principles. These are:

1. Use regular and complete shapes for floors and rooms.
2. Place the main entrance of the building in the center to create a feeling of balance.
3. Be aware of the impact of the first view upon entering a building.
4. Create entrances that are open and visually clear and that direct you to your destination, whether to a living room, a reception desk, or an elevator.
5. Locate public space of the residence or business in the front portion of the structure and the more private or intimate activities farthest from the entrance.
6. Avoid having columns and other protruding or blocking elements inside entrances, corridors, or rooms.
7. Create corridors that are wide enough for two people to pass one another.
8. "Curve" straight corridors and features as much as possible with artwork, furniture, light, and others.
9. Use closed risers on all staircases.
10. Do not plan doors or workstations at the end of long corridors.
11. Provide right-handed doors wherever possible.

21. ¹⁴⁸ Cathleen McCandless, *Feng Shui that Makes Sense* (Minneapolis: Two Harbors Press, 2011),

¹⁴⁹ Mainini, *Feng Shui for Architecture*, 143.

¹⁵⁰ Manini, *Feng Shui for Architecture*, 144.

12. Use natural and sustainable materials which contain fewer toxins.¹⁵¹

The flow of qi is important when it comes to entering the building and flowing through the spaces. Elements such as doors and windows are openings through which the qi enters and exits. The goal is to design rooms that can retain as much qi as possible without creating any stagnation. For instance, doors and windows should not be aligned because qi would enter the door and exit the window directly without spreading through the building.¹⁵²

Entryways help collect qi and, therefore, become an important space for first impressions and the feeling of openness. “Qi mouth” is where qi enters into the building first and is mainly considered the main entrance. Other important spaces in the home are the bedroom, kitchen, bathroom and living room, each with their own criterion. In fact, when it comes to space planning, a lot of the principles line up with an individual’s intuition. As an example, feng shui dictates that social spaces in a home could affect the homeowner’s social life. Hence creating brighter and livelier social spaces are preferred. This is common sense for contemporary design practices.

As for materials, it is important for the building to blend with its surroundings. There are also the colors of the Five Elements and the Eight Trigrams, associated with a direction. This way, the exterior color, and texture will vary according to the direction it faces. For example, the direction south is associated with fire or shades of red and

¹⁵¹ Cheryl Weber, "Practice Original Yin", Residential Architect, accessed December 5, 2015, http://www.residentialarchitect.com/practice/original-yin_o.

¹⁵² Mainini, *Feng Shui for Architecture*, 149.

northeast is associated with earth or shades of brown. The colors are shown in Figure 20 and the associated direction is shown in Figure 21.



Figure 20. Five Elements Colors

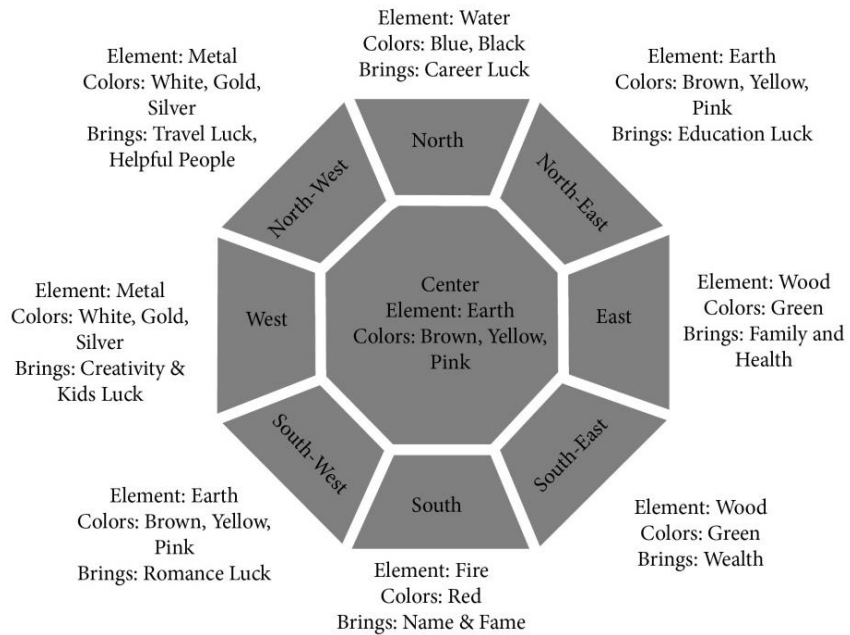


Figure 21. Relationship between Colors, Directions, and Elements

2.8 Summary

The purpose of this review is to trace the development of feng shui and find the alignment between feng shui and architecture. It is clear that even though feng shui is often seen as a superstition and aesthetic, feng shui can also be put in a more practical use in the profession of architecture. This is significant because feng shui forces the architect to consider designing from a macro to micro scale. In addition, feng shui encourages the architect to approach cultural and environmental factors relevant to design by understanding good qi and bad qi. Furthermore, the project will focus on yang dwellings or houses for the living, specifically residential architecture. Western feng shui principles which have been adapted from both traditional and modern feng shui principles shown in Figure 22 will be used to compare with the results from an interview in Chapter 3 (next chapter) and then expanded in Chapter 4.

It is also clear that feng shui grew from a rural history into an urban trend. Although the list includes research from existing knowledge on single family application, there is a lack of information on multifamily residential application. Hence, this gap in the research will guide the next chapter on Feng Shui as a Profession which includes an interview addressing the place specific design process from a profession's point of view.

<p>1. Armchair Form</p> <ul style="list-style-type: none"> • Rear tallest mountain / Rear of site • Right Side Mountain / Side of site • Left Side Mountain / Side of site • Front small mountain / Front of site • Land Slope • River • Mountains • Soil Condition • Vegetation 	<p>2. Urban Context</p> <ul style="list-style-type: none"> • Surrounding Buildings • Surrounding Streets • Water Access • Land Elevation • Shape of Land • Vegetation 	<p>3. Orientation</p> <ul style="list-style-type: none"> • Facing • Sitting
<p>4. Building Form and Structure</p> <ul style="list-style-type: none"> • Building Shape • Structure 	<p>5. Space Planning</p> <ul style="list-style-type: none"> • Room Shape • Main Entry • Entryway • Private Space • Public Space • Corridors • Staircases • Doors • Windows • Materials • Bathroom • Living Room • Kitchen • Bedroom 	

Figure 22. Summary of Western Feng Shui Principles

Chapter 3. Feng Shui in Practice

The role of feng shui in a multifamily residential building can be discovered through the growing trend of feng shui as a profession. Not only has there been an increase for feng shui consultation, there is also an increase in home resale value when involving feng shui. A particular city is Honolulu in Hawaii, where an interview with a feng shui specialist is carried out to produce a list of feng shui principles for multifamily residential projects. In addition, the interview will also emphasize the importance of feng shui in relevance to the architecture profession.

3.1 Feng Shui as a Growing Profession

Feng shui began to gain popularity not only with the public but also with the corporate world and more specifically when it came to interior design.¹⁵³ According to Loon¹⁵⁴, this popularity can be found from references to feng shui and a demand for their consultants in different magazines such as the magazines and interior decorators' publications among other European countries and Asia countries. For example, the demand for feng shui in West Germany suddenly increased¹⁵⁵ according to a study carried out in October 2001. Naturally, these consultants are also in great demand in cities and other Asian countries such as Hong Kong and Singapore. Compensation of a reputable feng shui consultant in the United Kingdom ranges between £70 and £375

¹⁵³ James E. Mills. "Western Responses to Feng Shui," *Middle States Geographer* 32 (1999): 71-7.

¹⁵⁴ Oh Loon Boon, "Summoning Wind and Rain: Studying the Scientization of Fengshui in Singapore," (PhD diss., National University of Singapore, 2010).

¹⁵⁵ Dennis A. Pitta, Hung-Gay Fung, and Steven Isberg, "Ethical issues across cultures: Managing the differing perspectives of China and the USA," *Journal of consumer marketing* 16, no. 3 (1999): 240-256.

(\$106 and \$568 USD).¹⁵⁶ On the other hand, in Singapore, the same would cost S\$500 to S\$5000 for each consultation (\$352 and \$3524 USD). The type of consultation varies. For instance in the United States, an average consultation would be \$75 for selecting a lot for a house and \$175-plus if a homeowner already has a house that needs consultation.¹⁵⁷

In addition to personal consultation, feng shui also influences the building professions. In an article from August 11, 2015, a survey conducted by Better Homes and Gardens Real Estate and American Real Estate Association of America (AREAA)¹⁵⁸ found that feng shui proves to be a powerful influence on Chinese-American home buyers. Seventy-six percent of Chinese-Americans surveyed said they were familiar with feng shui principles, eighty-one percent indicated that feng shui factored into their most recent home purchase, and seventy-nine percent are willing to invest more for a home that incorporates its principles. More importantly, ninety percent of Chinese-Americans believe implementing its principles increases a home's resale value. In other words, incorporating feng shui into the foundation of a home may affect its future on the market. This affects any building profession who practices residential architecture.

Feng shui principles are gaining much-needed attention, especially in cities with a growing Chinese American community. Hawaii is ranked with the highest Asian population percentage in the nation and this includes Chinese, Japanese, Filipino and Korean population. That being said, the city of Honolulu in Hawaii is a relevant example

¹⁵⁶ "Feng Shui Consultation Prices," Feng Shui by Jon Sandifer, accessed November 22, 2015, <http://www.fengshui.co.uk/consultations-prices/>.

¹⁵⁷ Pat Gee, "Harness energy potential of home by using feng shui," Starbulletin.com, accessed November 22, 2015, <http://archives.starbulletin.com/2001/08/10/features/story2.html>.

¹⁵⁸ "Feng Shui a Driver of Home Selection and Investment for Chinese-Americans", Better Homes and Gardens Real Estate, accessed November 22, 2015, <http://www.bhgre.com/feng-shui-a-driver-of-home-selection-and-investment-for-chinese-americans/>.

to study the trend of feng shui. Several feng shui consultants in Honolulu have gained popularity over the years among businesses, private homes, and even cemeteries. For instance, Sharissa Chun, a feng shui consultant, uses the practice in her real estate business to sell homes and consult homeowners¹⁵⁹; Alice Inoue, a feng shui consultant who started her business in 2001, was inspired by feng shui to become a life coach for adults to provide advice about their well-being¹⁶⁰; and Clarence Lau, a feng shui master, was consulted with designing the main garden of Valley of the Temples, a memorial park in Kaneohe area.¹⁶¹ An interview with Lau was conducted to further discuss the growing field of feng shui and its architectural influence on multifamily residential buildings in his point of view.

3.2 Interview with Feng Shui Specialist

An interview was conducted with Clarence K. Lau,¹⁶² a Feng Shui Master and teacher in Honolulu and California. Lau was born and raised in Hong Kong. He began studying the traditional feng shui with his master in Hong Kong for many years before moving to the United States to practice in 1995. In this extensive interview, Lau provides the knowledge of practicing feng shui in Honolulu with definition and approaches to residential buildings. Lau has worked on multiple scales of projects ranging from the interior of offices to high-rise developments and memorial parks. He has been featured in

¹⁵⁹ Allison Schaefer, "Feng Shui Art of Profit," *Business Star Bulletin*, March 20, 2005, accessed November 30, 2014, <http://archives.starbulletin.com/2005/03/20/business/story1.html>.

¹⁶⁰ "About Alice," Alice Inoue, accessed November 20, 2015, <https://aliceinoue.com/about-alice/>.

¹⁶¹ "Feng Shui master, Clarence Lau, to Incorporate Principles of Prosperity, Health and Well-Being into New Ocean View Terrace," *Valley of the Temples*, accessed November 20, 2015, <http://www.valleyofthetemplesmemorialparkoahu.com/blog/2015/february/feng-shui-master-clarence-lau-to-incorporate-pri.aspx>.

¹⁶² Clarence K. Lau, interview by Author, Jade Dynasty Restaurant, September 18, 2015.

many local newspapers and known to carry around a feng shui compass. Lau believes that feng shui does not restrict to any locations; as long as he is given a place, he can read its feng shui.

3.2.1 Honolulu and Feng Shui

For the past 20 years that Lau has practiced in Honolulu, feng shui has started to get more popular. There has been an increase of clientele which is not limited to only Chinese spoken ones. Lau says that eighty to ninety percent of his customers are local people. Only ten to fifteen percent are Chinese spoken.

Most of Lau's clients are homeowners. Others include developers, law firms, accounting firms, and architects. When being engaged in advising architects, Lau says that a few architects approach him for suggestions. As a feng shui practitioner, his job is not to be involved for the entire project, but aspects of the design, such as how to orient the building, lobby, each individual unit, and how to position the high-rises. He mentions an example of working with a local architect. In that case, he worked on particularly the interior, such as the door should not be facing each other, and the kitchen cannot be facing directly to the bathroom, or the front door.

Lau also believes that feng shui is based on the individual. He says, "the interesting part is when you design a house with good energy feels from the feng shui point of view, it will affect our mind...it's not about race or ethnicity, it is the individual." For instance, when the architect wants to design a place for comfort, the building should not face the corner of another building in front of it. If it has to, then the

resident might not want to choose that unit. Even if there is an ocean view, the more important is the surrounding buildings, which sometimes the architect can't control.

3.2.2 Feng Shui Practice and Architecture

Lau explains that feng shui literally means wind and water, “It is the ventilation when you design the building”. Although nowadays air conditioning units are used, there should still be ventilation that flows through the building. He believes that the real feng shui is “what we are working with the architect, how to design, how to get the right position, how to get the influences or any affecting from the outside environment to benefit the building you are in or the points you are located”.¹⁶³

When working with an architect, Lau goes into the site, measures the direction and energy with the feng shui compass which shows him the natural environment including the water, trees, mountains, and more. Sixty percent of the energy is from the natural environment, which is why location is very important. A good location means good health and prosperity. In addition to distinguishing the patterns of the natural environment, Lau also connects with the individual by talking to them; he also has to know the individual's birth year, day, and hour in order to find the best orientation.

As a practicing feng shui master, Lau admits that if you only read the form (referring to Form school), it will only give you 60% of the energy from the environment. If you can manage to understand the Compass school, which helps with orientating your building, then you are achieving another 40% to benefit the homeowner. He says, “This

¹⁶³ Clarence K. Lau, interview by Author, Jade Dynasty Restaurant, September 18, 2015.

is how we are to combine both Form and Compass school together to do the right reading for the building or house to be there, for their [homeowner's] benefit".¹⁶⁴

Lau sees that a lot of times, architects are making it more efficient to build which can't be controlled, especially for high-rise buildings. For instance, if there is a central water pipe in the wall, all plumbing features must connect to that wall. It is up to the homeowner to choose the right unit for the family. Hence, it is important for the floor plans or the reversed floor plans to be available for potential homeowners to choose.

3.2.3 Considerations for Multifamily Residential Project

For a residential project, firstly Lau considers the height, neighborhood, and the surrounding context, and the overall orientation, where the building is sitting and facing. He says, "You want all the units to be facing a very strong or nice view." It is important to note that choosing a favorable site does not guarantee lasting good feng shui. It does not account for future developments in the city which could obstruct the building's qi flow and balance. Second, the orientation of the main entry is important because it "intakes the qi, the energy from the location to benefit for the whole building". This means the layout of the lobby and how the street connects to the building. The flow of qi into the lobby and up to the units depends on the direction it faces. Third, there are three main spaces for the homeowner. This takes place after positioning the building. "When positioning is done, then there is the design of the main entrance, the kitchen, and the master bedroom." These are three key spaces that have to be considered in the design.

¹⁶⁴ Clarence K. Lau, interview by Author, Jade Dynasty Restaurant, September 18, 2015.

3.3 Summary

Feng shui is a growing trend which affects the building profession including the multiple stages of a design process. This chapter produced a list of considerations for a multifamily residential building shown in Figure 23. The three categories are Surrounding Context, Main Entry, and Key Spaces. Although feng shui is getting more popular, it faces the issue of uncontrollable factors in the urban context in addition to those mentioned before as part of the design problem. Some factors include existing surrounding buildings; building too quickly and efficiently; and uncontrollable future developments that could obstruct the homeowner's view. Furthermore, the next chapter will explore the design guidelines that may address this matter.

<p>1. Surrounding Context</p> <ul style="list-style-type: none"> • View • Feng Shui Compass • Water • Trees • Mountains • Location • Height • Neighborhood • Overall Orientation (Sitting and facing) 	<p>2. Main Entry</p> <ul style="list-style-type: none"> • Entry Direction • Lobby Layout • Street to Building
<p>3. Key Spaces</p> <ul style="list-style-type: none"> • Individual Unit Entrance • Kitchen • Master Bedroom 	

Figure 23. Summary of Multifamily Residential Feng Shui Principles

Chapter 4. Design Guidelines

This chapter will review the method used for research and provide the design guidelines for the project, including criteria for site selection, site analysis, building layout and space layout.

4.1 Research Process

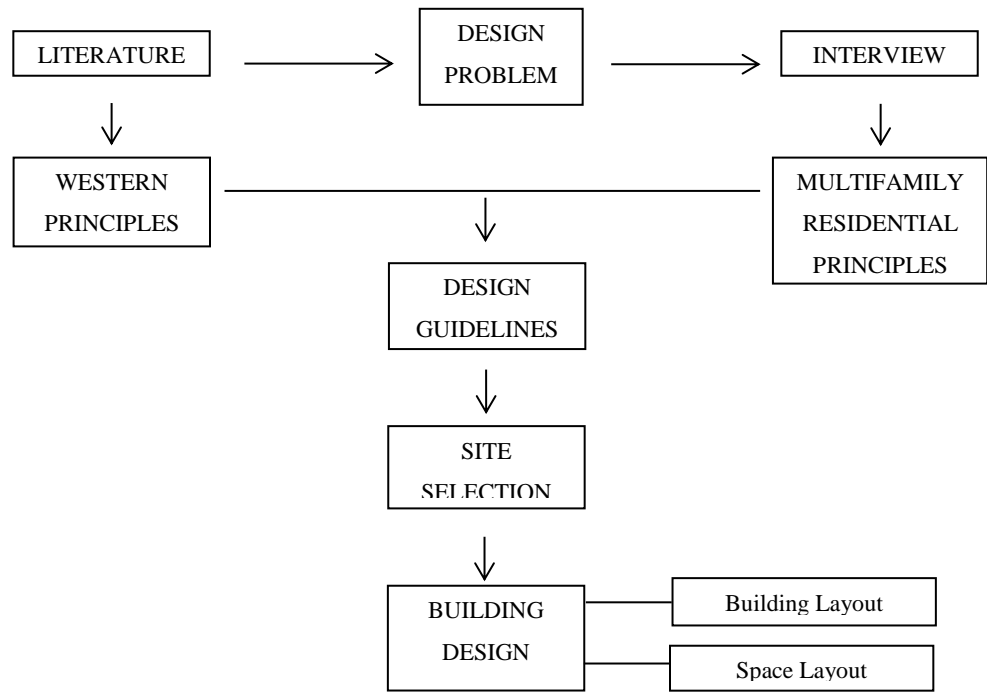


Figure 24. Research Process for Design Guidelines

The research process began with the literature review which attempted to answer the first research question, "To what extent can an architect design using feng shui principles in the urban context?" The literature research produced a list of Western feng shui principles and at the same time indicated the design problem or the challenges of urban feng shui; firstly, the orientation of the site is inflexible and secondly, the condition of the site is uncontrollable. Then an interview was conducted with a feng shui specialist

which attempted to answer the second research question, "what is the role of feng shui multifamily residential buildings?" Hence, the interview produced another list of principles which focuses on multifamily residential buildings. The two sets of principles are analyzed together to find commonalities and missing elements for the design guidelines.

The chart of the principles considered for the design guidelines of the project is shown in Figure 25. On the left is the list of Western Feng Shui Principles from the literature review and on the right is the list of feng shui principles for multifamily residential building from the interview. The middle shaded area shows the overlapping principles. Principles that overlap include water, mountains, trees, orientation, entrance, kitchen and the master bedroom. Moreover, the guidelines will branch into two groups: guidelines for site selection and guidelines for building design. The principles are also on a scale from micro to macro, where the approach of site selection will cover most of the macro and the approach of building design will cover most of the micro. In order to establish the rule of thumb for using the guidelines, criteria for site selection and building design, including building layout and space layout, are established. The first step is to look at the project on a macro scale. Hence, site selection is reviewed first.

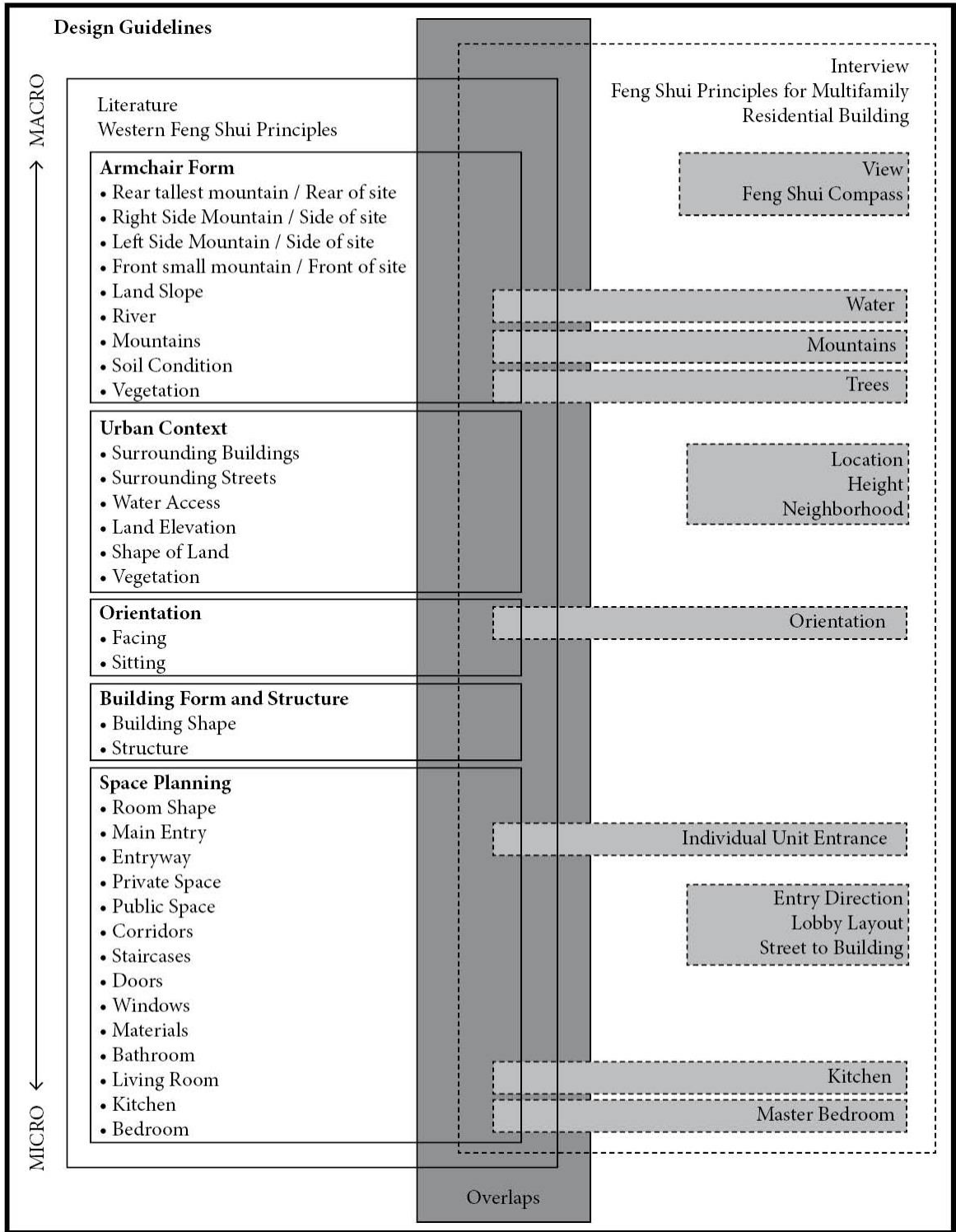


Figure 25. Design Guidelines Chart

4.2 Criteria for Site Selection

Firstly, it is important to zoom out of the site and analyze it on a macro scale. For instance, given that Honolulu is part of an island, the island should be analyzed as a whole before focusing on a specific site. This not only reveals multiple options for a site, but it also expresses the site characteristics in a broader contextual view. Secondly, criteria derived from the Western feng shui principles with multifamily residential feng shui principles should be considered. Figure 26 shows the list of principle. In addition, each principle is reviewed with its own criteria shown in Figure 27. Categorized as Armchair, Landform, Urban Context, Location or Sitting/Facing, some principles are associated with a diagram which illustrates the criteria. The criteria explain the most favorable and auspicious form of the principle.

Rear of site	Water Access
Right side of site	Land Elevation
Left side of site	Shape of Land
Front of site	Location
Land Slope	Height
River/Water	Neighborhood
Mountains	Facing
Soil Condition	Sitting
Vegetation/Trees	View
Surrounding Buildings	Feng Shui Compass
Surrounding Streets	

Figure 26. List of Site Selection Principles

	PRINCIPLE	DIAGRAM	CRITERIA
ARMCHAIR MODEL	Rear of site Right side of site Left side of site Front of site River/Water		<ul style="list-style-type: none"> • High Protection at Back • Low Protection on Left/Right (Left is dominant) • Low Protection on Front • Faces South • Meandering River in Front
LANDFORM	Land Slope		<ul style="list-style-type: none"> • Gentle is favorable
	Mountains		<ul style="list-style-type: none"> • It is positive to live on or in view of gentle slopes and rounded tops. Avoid sharp peaks and steep slopes. • Mountain should not be altered with road cuttings and excavations.
	Soil Condition		<ul style="list-style-type: none"> • Avoid areas that are too dry or too wet. Deserts and jungles are not optimal sites for habitation.
	Vegetation/Trees		<ul style="list-style-type: none"> • It is best to settle in areas with mature tree growth. Look for forests, older suburbs and city parks. Avoid new development where vegetation has been razed.

Figure 27a. Criteria for Site Selection

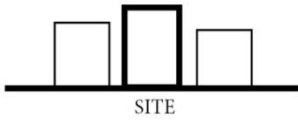
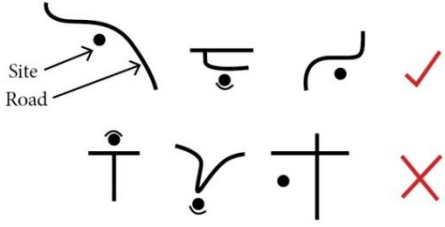
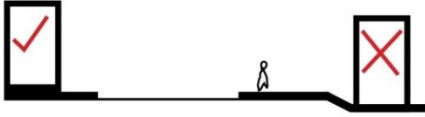


	PRINCIPLE	DIAGRAM	CRITERIA
URBAN CONTEXT	Surrounding Buildings		<ul style="list-style-type: none"> Buildings on the side should be the same height or slightly shorter than the building in consideration
	Surrounding Streets		<ul style="list-style-type: none"> Gently winding streets greatly benefit homes located along them. Meandering paths carry Qi better than straight paths.
	Water Access		<ul style="list-style-type: none"> It is recommended that water is accessible from the site (eg. water feature, stream, river, ocean, etc)
	Land Elevation		<ul style="list-style-type: none"> The lot should be higher than street level unless there is an open view on the side opposite the street
	Shape of Land		<ul style="list-style-type: none"> Regular shapes are favorable (rectangular, square, circular, octagonal) If shape is irregular, it can be balanced with landscape.
	LOCATION	Air Quality	
Height			<ul style="list-style-type: none"> Building in consideration should be similar in height with existing buildings.
Neighborhood			<ul style="list-style-type: none"> Avoid inactive neighborhoods that have too many vacant houses.

Figure 27b. Criteria for Site Selection

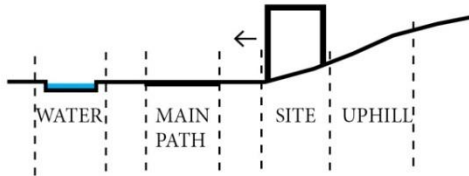
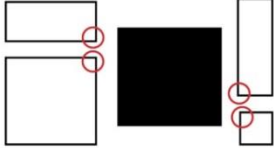
	PRINCIPLE	DIAGRAM	CRITERIA
SITTING / FACING	Facing Sitting		<ul style="list-style-type: none"> • Face Water • Face Main Access Path • Sits (Rear Against) Uphill
	View		<ul style="list-style-type: none"> • View should point towards water/ocean • View should not face any corners of neighboring buildings
	Feng Shui Compass		<ul style="list-style-type: none"> • Consultation with feng shui specialist

Figure 27c. Criteria for Site Selection

Looking at Figure 27a, for example, in the category of “Landform” and principle of “Mountains”, it is favorable that the mountain form is rounded and it is unfavorable that it is sharp. For “Soil Condition” and “Vegetation/Trees”, it is best to settle in areas that are not razed or desert-like. On Figure 27b, in the category of “Urban Context” and the principle of “Surrounding Streets”, the streets that meander carries qi better than straight paths. In the category “Location” and principle of “Height”, the building in consideration should be similar in height with existing buildings. In Figure 27c, in the category of “Facing/Sitting” and principle of “View”, the view should not face any corners of neighboring buildings.

After reviewing the criteria for site selection, a tool is developed as a "Criteria Scale" (Figure 28). On the left is each criterion listed in its category and on the right is a scale with a negative and positive attribute. The scale uses a number system, where negative is "-2" and positive is "2", "0" being the balanced point. According to the analysis, each principle will be scaled a number, and all numbers will be added to find the summation total. The numbers allow the overall analysis of the site to be more systematic when comparing several sites side by side to see which is most favorable. In this case, the most favorable would be the summation results closest to "0". Moreover, this tool can be used for any site to determine its positive and negative qualities according to urban feng shui principles. It is important to note that Feng Shui Compass is part of the attributes because it is recommended for any site to have consultation with a feng shui specialist. Unfortunately in this project, no consultation was done as part of the project design.

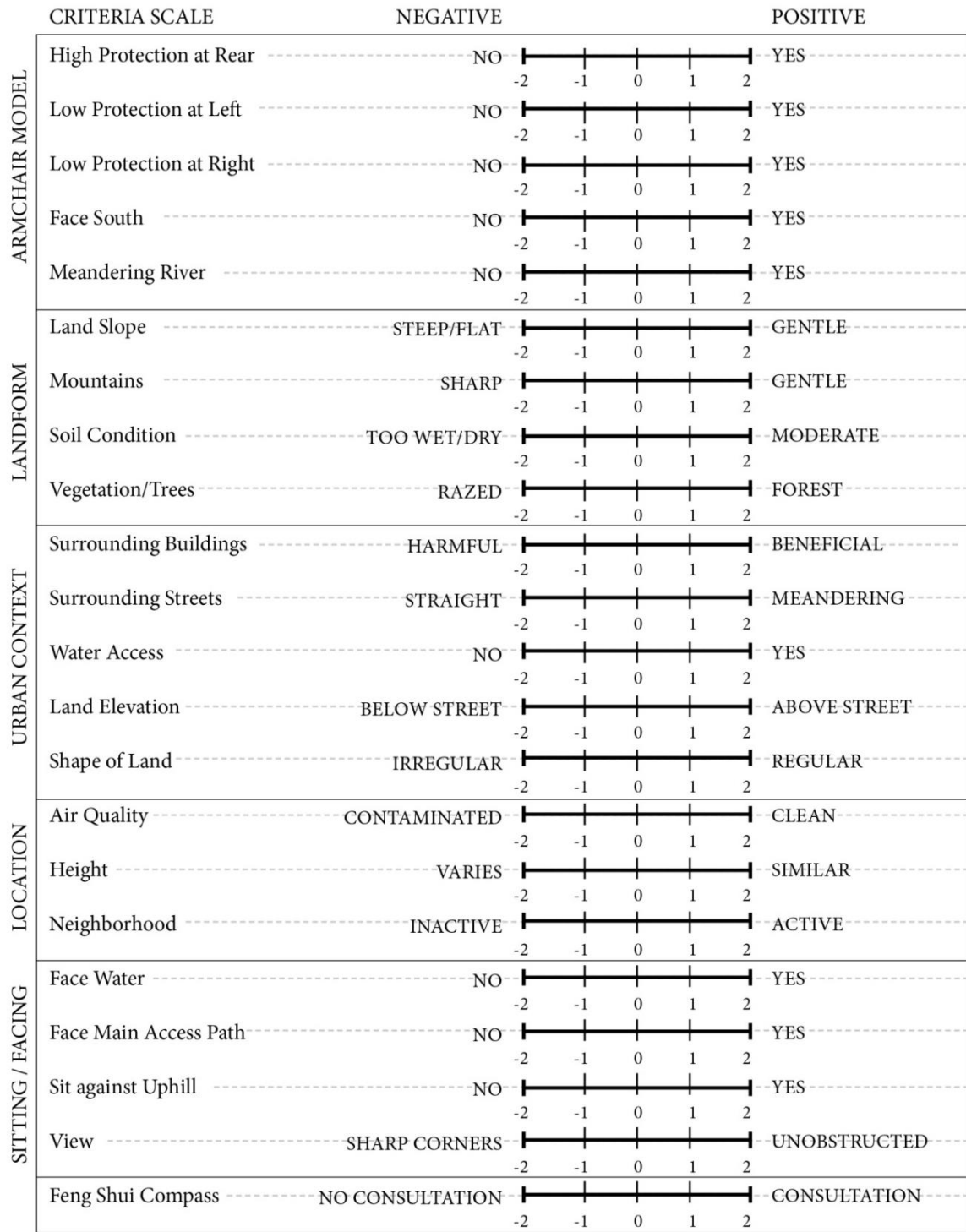


Figure 28. Site Selection Tool

4.3 Criteria for Site Analysis

After the site selection process is complete, the next step is to begin the building design process, which includes site analysis, building layout and space layout. There are two parts to site analysis. The first is to gather requirements and the second is to analyze qi.

1. Gather Requirements

a. Site Overview

Determine the address, zoning, maximum height, lot area, maximum coverage, floor area ratio (F.A.R) and site setbacks. This information can be accessed by looking at the selected city and county's Land Use Ordinance (LUO) and available Department of Planning and Permitting (DPP) resources.

b. Building Program

Determine project program requirements such as the type of residential unit and square footage. This also determines the appropriate amount of parking stalls. According to the International Building Code (IBC), a unit larger than 799 SF requires 2 stalls, a unit between 599 SF and 799 SF requires 1.5 stalls, and a unit under 599 SF requires 1 stall.

c. Perimeter and Axis

Determine the setback lines and sitting and facing directions. The sitting and facing directions can be analyzed according to

the requirements of feng shui. The facing side (yang or most active) is most commonly the side of the main road, the most impressive view, the side facing the water, and the downhill and sunniest side. The sitting direction (yin or the quietest) is the side with a less interesting view, least activity, and the shadiest side. The facing and sitting directions should be just as important as the true North direction. A “compass” can be designed according to the established directions.

2. Analyze Qi

a. Climate

Determine the direction of the wind and sun to find where the “good qi” hits the site. This can be represented by blue arrows. In the case of Honolulu, the trade winds come from the Northeast and sun travels east to west with slight angle changes depending on the month. The climate directions can also add onto the design of the compass.

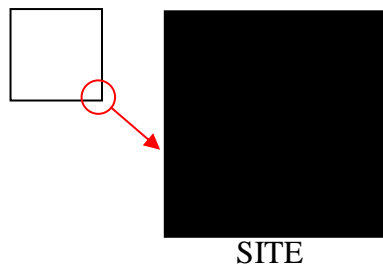
b. Traffic

Determine the surrounding roads including traffic speed, traffic direction, and road form. Main roads bring heavy traffic and noise, which could bring an overwhelming amount of good and bad qi to the site. One-way streets carry qi only in one direction which could benefit the site. There are also harmful and

beneficial road patterns; be aware of intersections, straight roads, and bending roads. Again, the good and bad qi can be represented as arrows that hit the site. Good is blue, bad is red.

c. Surrounding Buildings

- i. Determine the height and overall form of the surrounding buildings. This will help establish the desired height and form of the proposed building. It helps to trace the surrounding buildings as blocks and color-code the heights. The most critical analysis is the corners of the surrounding buildings. These are called “wall knives”, where adjacent corners or pointing corners direct bad qi to the site. It is important that entries and view corridors avoid wall knives. This can be represented with red arrows that start from a building corner and diagonally hit the site.



d. Qi Gesture Diagram

- i. Combine all good and bad qi into one diagram to determine qi blockage and qi access. Qi blockage should be placed where bad qi hits the site. Qi blockage can translate to protection such

as walls and landscape. Qi access can be determined from openings created from the blockage. The openings can determine access for vehicles and pedestrian. Heavier qi that comes from the main road may be for vehicles and lighter qi that comes from quieter sides or corners may be for pedestrians. All of this can be represented by bright colors to show the “gesture” of qi.

4.4 Criteria for Building Layout

After the site analysis is the building layout which is part of building design. Due to the special conditions of different sites, building design guidelines may vary. In a broader sense, some general criteria apply:

1. The Core (elevator, stairs, mechanical/HVAC)
 - a. Should be placed on the central axis (sitting/facing axis)
 - b. Should not be adjacent to a unit door
 - c. Should act as qi blockage
 - d. Should be considered as part of the building entry
2. The Building Entry / Lobby
 - a. Should be considered as the “qi mouth”, hence, avoid bad qi and attract good qi
 - b. Should connect the street to the building
 - c. Should be separate from vehicles
 - d. Should be grand and well-lit

3. Residential Building
 - a. Should be oriented to receive maximum sun and wind
 - b. Should be oriented to block bad qi
 - c. Should be regular shaped
 - d. Should receive qi from qi mouth (eg. central courtyard, atrium, etc.)
 - e. Should have a separate (same or different) sitting and facing axis than the site
 - i. Facing direction (most active): most social activity, front door, water, living room, sunniest side, main access path
 - ii. Sitting direction (most quiet): least activity, less interesting view, away from water, shadiest side, bedrooms and kitchen
4. Building Structure
 - a. Should be stable
 - b. Should encourage open floor plan
5. Landscaping
 - a. Should provide trees to block bad qi
 - b. Should provide water feature to attract good qi
6. Parking
 - a. Should be separate from the building entry
 - b. Should be accessed from the main road

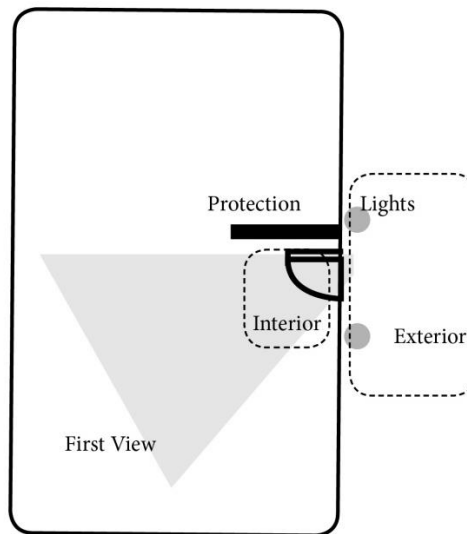
4.5 Criteria for Space Layout

The final design stage part of the building design is space layout. In a unit, the three primary spaces are the entry, kitchen and bedroom. The secondary spaces include dining, living and bathroom. Vital elements include openings such as windows and doors, storage and circulation.

1. Primary Spaces

a. Entry

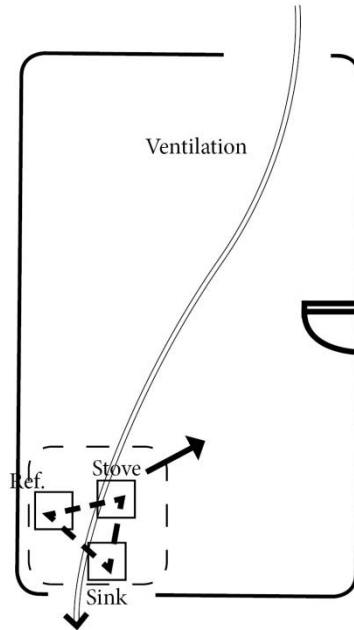
- i. Armchair concept: entry feels protected upon entering
- ii. Well-lit (natural and artificial light)
- iii. Exterior to interior transition (clear passage, proportional)
- iv. First impression when entering the unit should be welcoming
- v. Door should be placed near the center of unit



b. Kitchen

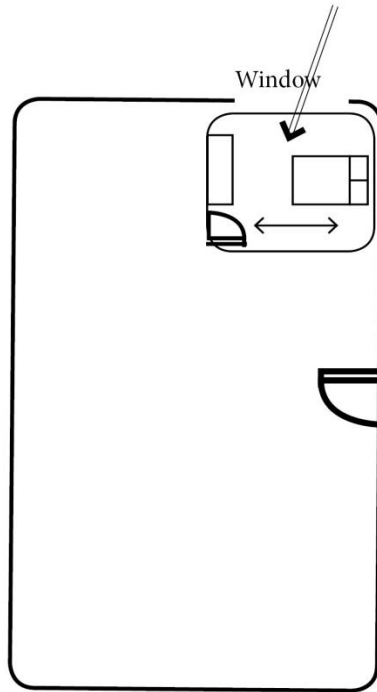
- i. Armchair concept: stove faces entry

- ii. Stove-fridge-sink triangulation (no closer than 5 feet)
- iii. Sink in front of window
- iv. Place for best ventilation to blow away bad qi



c. Bedroom

- i. Armchair concept: Bed should not be aligned with door
- ii. No beam above bed
- iii. No window above bed
- iv. Place at back of unit (most private)
- v. Bed not aligned with toilet



2. Secondary Spaces

a. Dining

- i. Although not required, dining table should be a gathering space, hence have a central light focusing on the table
- ii. Allow space for movement of chairs and people

b. Living

- i. Furniture should not be too close to each other (around 30" apart)
- ii. Furniture should open up the space to make it feel more welcoming
- iii. Space should be well-lit

- c. Bathroom
 - i. First view entering the bathroom should be the sink (avoid the toilet)
 - ii. Avoid facing the bed, front door, and kitchen
- 3. Vital Elements
 - a. Openings
 - i. Aligned doors should be directly opposite each other (mirrored) to avoid confusion
 - ii. Doors should be right-handed
 - iii. Door and window should not be aligned
 - b. Storage
 - i. Storage space is recommended to reduce clutter
 - c. Circulation
 - i. Straight and long corridors should be avoided
 - ii. Avoid placing a door at the end of a corridor
 - iii. Floor plan should be open to encourage flow of people and good qi

4.6 Summary

This chapter laid out the design guidelines for a multifamily residential project. The research process reviewed the methods used to develop the principles including literature and the interview, and the design process also emerged. From a macro to micro scale, the design process begins with the site selection and then moves on to the building design. The building design incorporates three parts: site analysis, building layout, and

floor layout. Each principle is then analyzed with its own criteria, producing tools to be used and applied to any multifamily residential project. In other words, the guidelines in this chapter will help guide the rest of the project (shown in Chapter 5 and 6).

Chapter 5. Site Selection

Honolulu is chosen to be the site of the project and hence there is an overview of the city along with its current housing issues. Then, the map of Oahu is explored to determine the three sites to be evaluated against each other. This will be done by applying the criteria scale tool to each site.

5.1 Overview of Honolulu

Hawaii is very different from the rest of United States. One major factor is its geography. The island chain is located in the mid-Pacific, halfway between North America and Asia, and separated from the rest of the country. This might explain the history of emerging plurality of minority groups. Each minority arrived with its own ethnocultural identity, evolving and combining over time to form one multicultural society.¹⁶⁵ In the nineteenth century, early immigrants arrived in Hawaii, mostly from Asia and some from Europe; first Chinese, then Japanese, Korean, Portuguese, and Filipino.¹⁶⁶

Among all Hawaii counties, Honolulu County on the island of Oahu accounts for a majority of real estate sales.¹⁶⁷ According to the Honolulu Board of Realtors, there was an increase of 4.4 percent of real estate units sold per year from 2009. One major reason for this is foreign buyers. Foreign buyers are an important source of increase demand for housing. According to the National Association of Realtors, in 2013, Japan-based buyers account for more than fifty-five percent of all international sales in Hawaii, followed by

¹⁶⁵ John F. McDermott and Naleen Naupaka Andrade, *People and Cultures of Hawaii: The Evolution of Culture and Ethnicity* (Hawaii: University of Hawaii Press, 2011), xii.

¹⁶⁶ McDermott, *People and Cultures of Hawaii*, xv.

¹⁶⁷ "Measuring Housing Demand in Hawaii. 2015-2025," Department of Business. Economic Development & Tourism, <http://files.hawaii.gov/dbedt/economic/reports/2015-05-housing-demand.pdf>, 11.

Canadians. The next largest group is the Chinese, comprising nearly 6 percent of all international sales. This has resulted in a high housing unit demand for Honolulu, playing an important role in Honolulu's economy growth.

The population of Hawaii has been increasing at about 1 percent per year since 2000, with households forming at a slower rate of around 0.8 percent per year on average.¹⁶⁸ According to the Department of Business, Economic Development & Tourism (DBEDT), one of the underlying components for the housing demand projections is household growth. As the number of households increase, additional units are needed to house them. However, Hawaii's housing market remains unbalanced due to constrained supply on one hand (available land), and increasing demand on the other hand.¹⁶⁹ Ongoing developments on Oahu such as Transit-Oriented Development (TOD) and downtown Kaka'ako contribute to this factor. As the number of foreign buyers increase, the demand for residential accommodation increases with it. Hence, residential projects for architects are also in demand.

5.1.1 Housing Issue

There has been a problem in Honolulu in that the housing prices are rising day by day and there are few houses that are affordable to the public. There is a lack of urgency in the city's response to address this issue and the need for affordable housing is still increasing.¹⁷⁰ A study carried out in 2014 revealed that Oahu needs more than 11,000 new rental units to be occupied by low and moderate income households by the year

¹⁶⁸ "Measuring Housing Demand in Hawaii. 2015-2025," 16.

¹⁶⁹ "Measuring Housing Demand in Hawaii. 2015-2025," 3.

¹⁷⁰ "Abercrombie: Affordable Housing Is Hawaii's Most Pressing Issue," Civil Beat, October 29, 2014, accessed December 5, 2015, <http://www.civilbeat.com/2014/10/abercrombie-affordable-housing-is-hawaiis-most-pressing-issue/>.

2020.¹⁷¹ This seeks to solve Honolulu's major problem of homelessness. A critical study of Honolulu has also revealed that the residents are forced to overwork so that they can meet their housing needs. The residents are forced to do up to three jobs to meet these expenses.¹⁷² The city authorities and government have promised on some projects to provide more rentable units. Despite all these development agreements as well as financial arrangements there have been issues due to lack of support from the national authorities and the related parties. These development plans especially for construction end up taking a lot of time before they are completed thereby not solving the current issues at hand.¹⁷³

In addition to affordable housing, Honolulu also faces the issue of housing shortage. The building pressure of Honolulu is increasing. High-density buildings are on the rise in downtown Kaka'ako and plans to develop around the future Honolulu Authority for Rapid Transportation (HART) are being arranged. Some solutions to housing shortage include building micro-units, which are around 250 square feet each.¹⁷⁴ Still, there is an issue in building too quickly, and there is a lack of consideration for the well-being of residents.

One of the major qualities in high rise building is the sense of belonging. This is because the socio-cultural aspects are usually ignored. While the increase in density of

¹⁷¹ "Hawaii Housing Finance & Development Corporation," Hawaii.gov, accessed December 5, 2015, <http://dbedt.hawaii.gov/hhfdc/>.

¹⁷² "Hawaii Public Housing Authority - State of Hawaii," Hawaii.gov, accessed December 5, 2015, <http://hpha.hawaii.gov/faqs/section8.html>.

¹⁷³ "Home," Housing Hawaii, accessed December 5, 2015, <http://www.housinghawaii.org/>.

¹⁷⁴ "Living Hawaii: The Little Solution to the Big Housing Crisis," Civil Beat, December 15, 2014, accessed December 5, 2015, <http://www.civilbeat.com/2014/12/living-hawaii-the-little-solution-to-the-big-housing-crisis/>.

Honolulu has caused debate, less attention has been given to the lived experiences of the residents of higher density dwellings.¹⁷⁵ Therefore, given that the role of feng shui is to improve the well-being of residents, feng shui should be recognized in the field of architectural design. Furthermore, the housing issue in Honolulu will be considered during the process of site selection for the project.

5.2 Site Limitations and Application

As the first step of analyzing a project from a macro scale, the use of Form school to find site characteristics is important. In order to analyze the island of Oahu, the direction symbol is used as a tool to show true north and the eight directions, derived from the Eight Trigrams theory (Figure 29). The map of Oahu shows the mountain ridges outlining the edges of the island, forming an elevated landscape that spreads from Southeast to Southwest naturally wrapping around a cavity. This creates the natural “armchair” formation. The formation also opens up to the South and faces the ocean which is Form school’s ideal feng shui model (Figure 30).

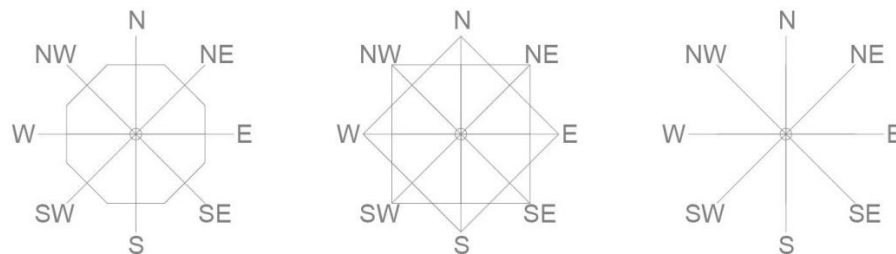


Figure 29. Direction Symbol

¹⁷⁵ Hazel Easthope and Sarah Judd, *Living Well in Greater Density* (Sydney: Shelter NSW, 2010).



Figure 30. Map of Oahu with Armchair Form

The landform of Oahu can be analyzed by using the Five Geographic Factors and Four Emblems tool from Form school. Figure 31 shows the cavity as the “cave”, ocean as the “water”, the mountain ridge as the “dragon”, and the surrounding hills as the four “sands”. Black tortoise is the back hill, which protects the cave from the strong northeast trade winds. Azure dragon is the left hill, which extends and seems to dominate white tiger which is the right hill. Red phoenix is the facing mountain, which in this case is Diamond Head, an extinct crater that serves as Hawaii’s landmark. North is considered as the “back” and south is considered as the “front” in the same model.

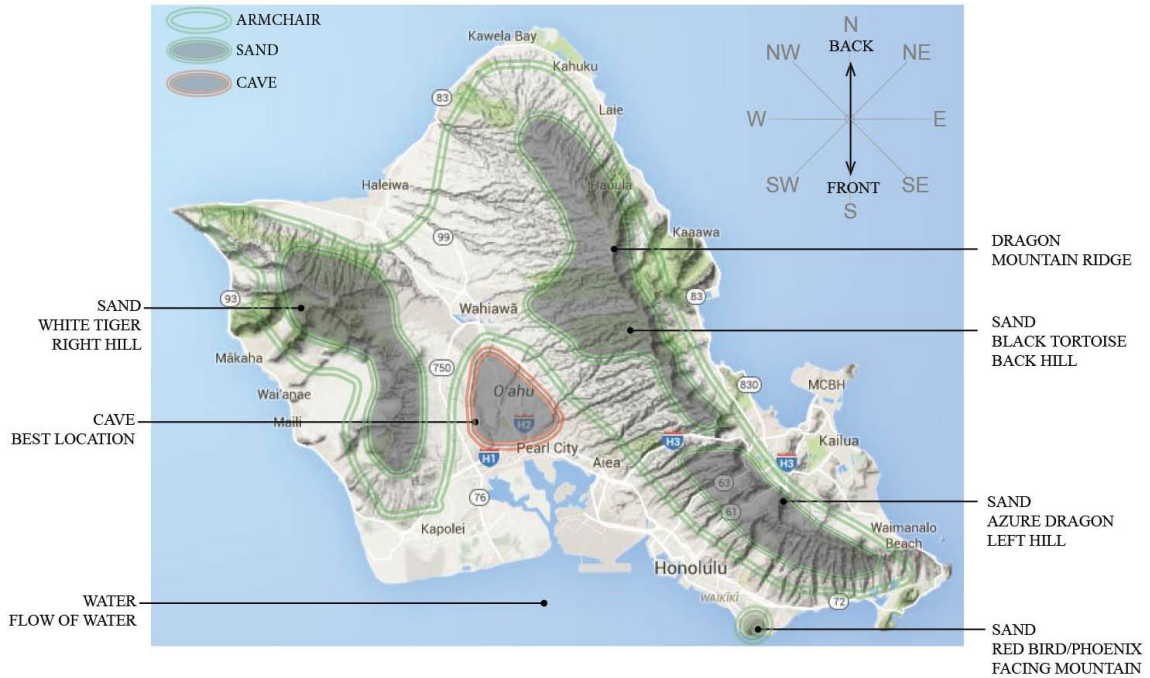


Figure 31. Five Geographic Factors and Four Emblems Tool

The next map shows the urban context of Oahu, where most of the island are developed (Figure 32). The point is not to show exactly the type of development happening, but rather to understand that it is common for modern cities to develop beyond the cave. This allows us to zoom in further to analysis each city. For instance, Kapolei appears to have a black tortoise (back hill) but lacks the azure dragon (left hill) and white tiger (right hill), which may mean that it has too much sun exposure, or based on the flatness of the land, receives little water and therefore is drier. Kailua lacks black tortoise (back hill), which means it receives strong winds and rain without protection and therefore is most damp. On the other hand, Honolulu, although lacks white tiger (right hill), it is well protected by black tortoise (back hill) and azure dragon (right hill), which

means it receives enough rainwater to avoid overly dry and damp land. Highlighted area also sites A, B, and C that are being considered for the project.

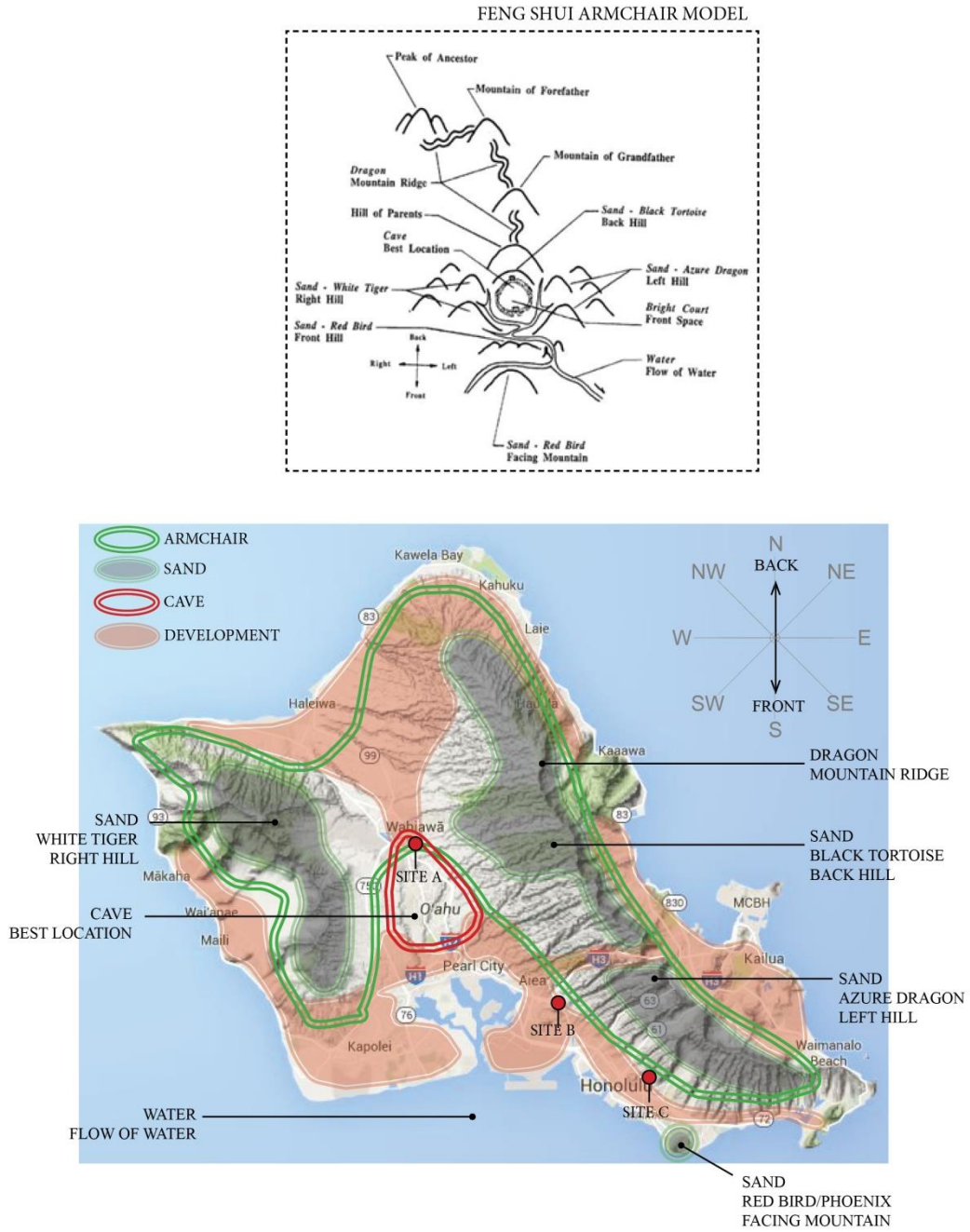


Figure 32. Development and Three Sites

Three sites were chosen in order to compare and discuss the best location for the project. Both suburban and urban neighborhoods were considered. Site A, B, and C were chosen according to their location, limitations, and neighborhood. Each site also has their advantages and disadvantages based on site observations. The site analysis guideline tool is used for each site to analyze the feng shui characteristics and then used to compare and select the best choice for the project.

5.2.1 Site A

“Feng Shui Spot”

Address: 95-202 Waikalani Drive, Honolulu, HI 96789

Neighborhood: Mililani Area

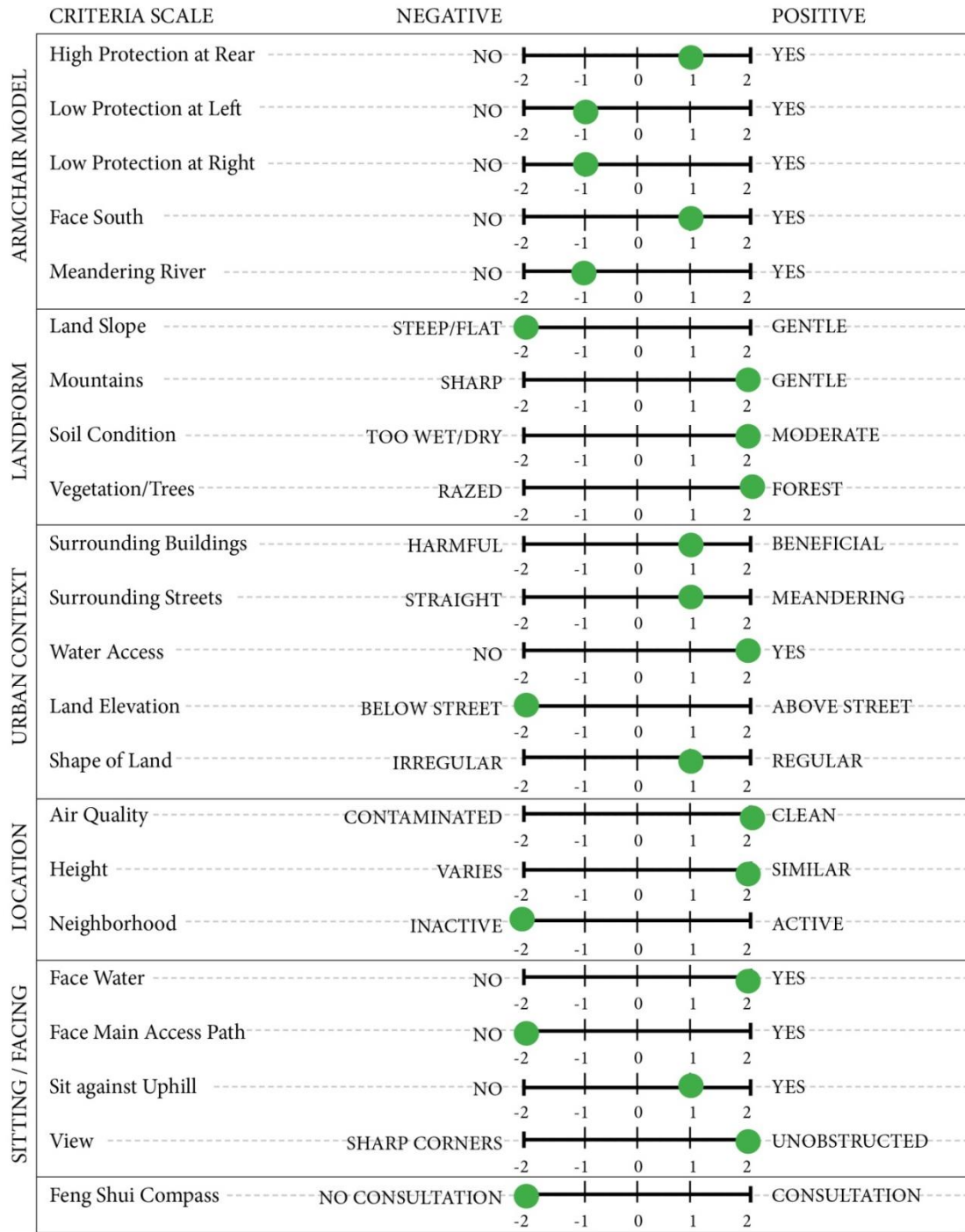
Area: 43,734 SF

This site was chosen based on analyzing the best feng shui area on Oahu. The lot was found from several resources on land for sale in Mililani. Although it is an area which suggests single-family homes, it is applicable to propose a multifamily residential. Located within the analyzed boundary of the “best location” of the armchair model, this site is in a gated community surrounded by forestry, single family homes, and low-density residential. The site is in a gated community and on an undeveloped lot. It has the back hill as high protection at the rear, but its left and right sides are exposed. It orients to the east and faces a hidden meandering stream in front. The land slope is very steep with gentle mountains. The site is full of trees and, therefore, has great soil condition and vegetation. In a quiet area, the site benefits from the surrounding buildings and streets but appears to be below street level which is negative. The shape of the lot is regular, the air quality and height of its surrounding buildings are similar, but the neighborhood is very

inactive. In fact, the road leads to a dead end of single family homes. The site faces water but it does not face the main access path. Other benefits include the site slopes downhill with an unobstructed view in front. The summation result for this site is 9.



Figure 33. Site A Context



Total = 9

Figure 34. Site A Application

5.3.2 Site B

“Residential Spot”

Address: 2965 Ala Napuaa Place, Honolulu, HI 96818

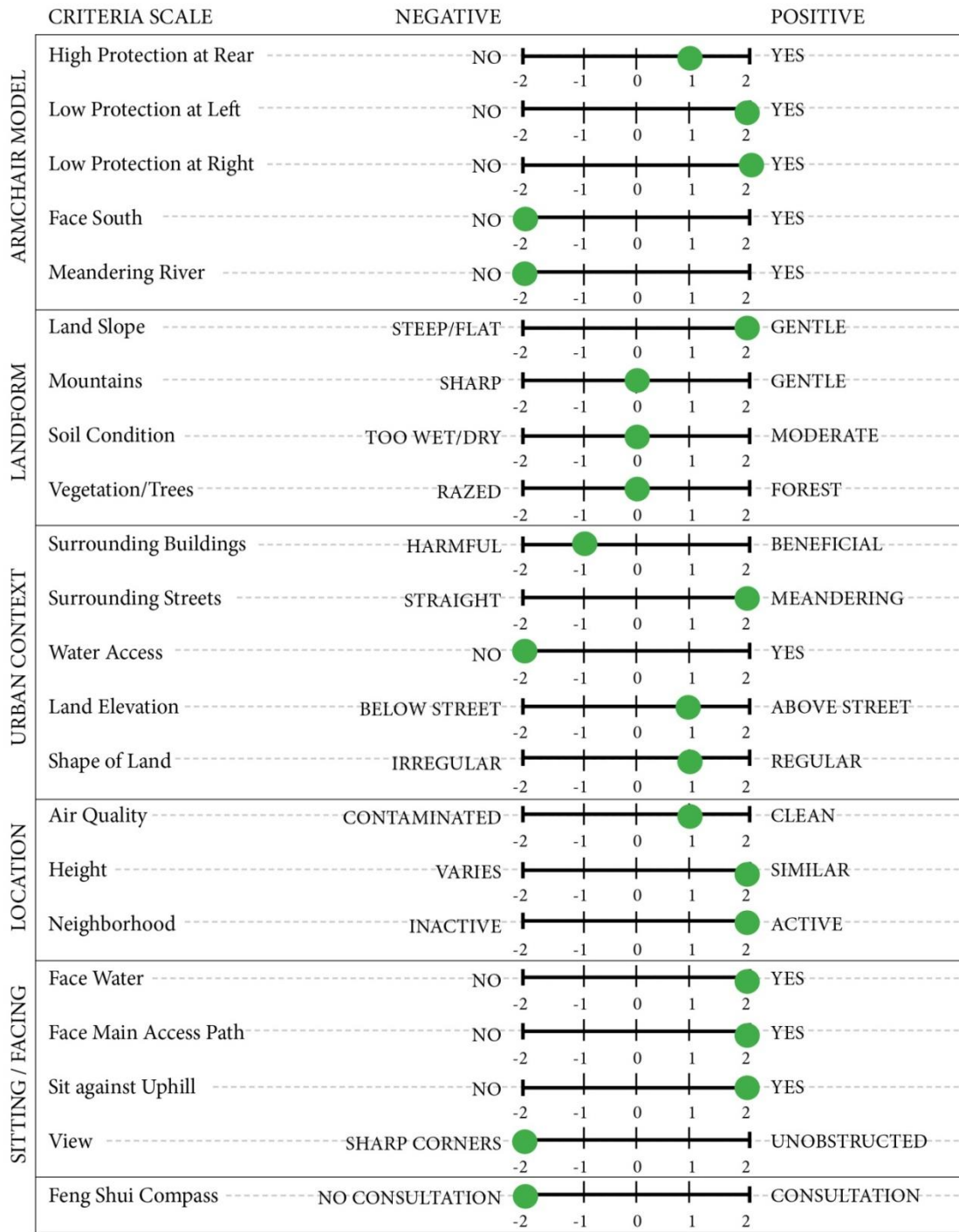
Neighborhood: Salt Lake

Area: 21,461 SF

This site was chosen based on its high Asian population. The lot was found from several resources on available land in Salt Lake. Surrounded by low to medium density residential buildings, this site fits into the setting of a developed multifamily residential suburban area in Salt Lake. The site is located on a small winding street which leads to a dead end. The surrounding buildings are mainly low-rise apartment buildings; four to seven stories high. It is selected mainly because of the existing slope. Instead of opening to the south, the site opens and slopes down to the north to the access road. Figure 26 shows a street view from the Northwest side. This means that the back of the site faces the ocean while the front faces the mountains. On the contrary, the building faces a nearby lake which can be viewed if the building is built high enough. Although the directions are opposite to the ideal orientation, the armchair form is expressed; not by mountain or trees, but by its urban context. The retaining wall against Salt Lake Boulevard is the high protection at the rear and the two adjacent buildings are the low protection on the sides. However, these elements may create conflict rather than protection. For instance, Salt Lake Boulevard could be too noisy for the residents, and the building to the right and front of the site is “pointing” to the site, which may be harmful. The building design stage would need to address this matter. The summation result for this site is 11.



Figure 35. Site B Context



Total = 11

Figure 36. Site B Application

5.3.3 Site C

“Development Spot”

Address: 1266 Rycroft Street, Honolulu, HI 96814

Neighborhood: Ala Moana

Area: 7,053 SF

This site was chosen based on the convenience of the location of Honolulu and the challenge of designing in a developing, urban context. Seen on the proposed Transit Oriented Development (TOD) zoning recommendations for the upcoming Ala Moana Center Rail Station, this location lies near a central intersection of the “Med-Density Apartment (A-2)” zone shown in yellow. The site is surrounded by low-rise apartment buildings, from one to four stories high. Part of the challenge of this site is that there are a lot of surrounding buildings that can affect the site. Also, it lacks protection from the rear and on the left because it is located at an intersection. This means that two sides of the site are exposed to the street. The site faces south, which means it faces the ocean. The site is on a flat land and the condition of the soil and vegetation is close to being balanced as well. The site lacks water access and nice view but it faces the main access path and benefits from an active neighborhood with walking distance to a commercial area. The summation result for this site is -3.

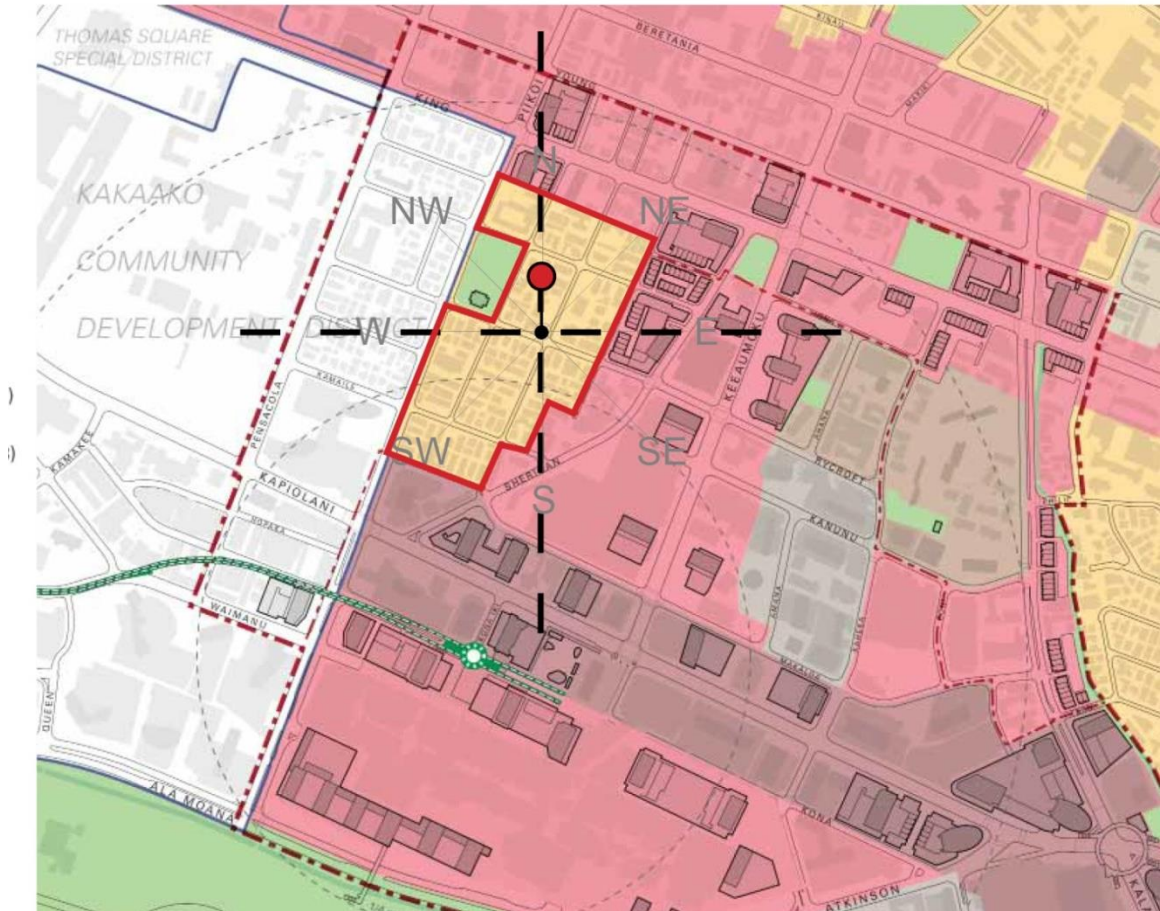
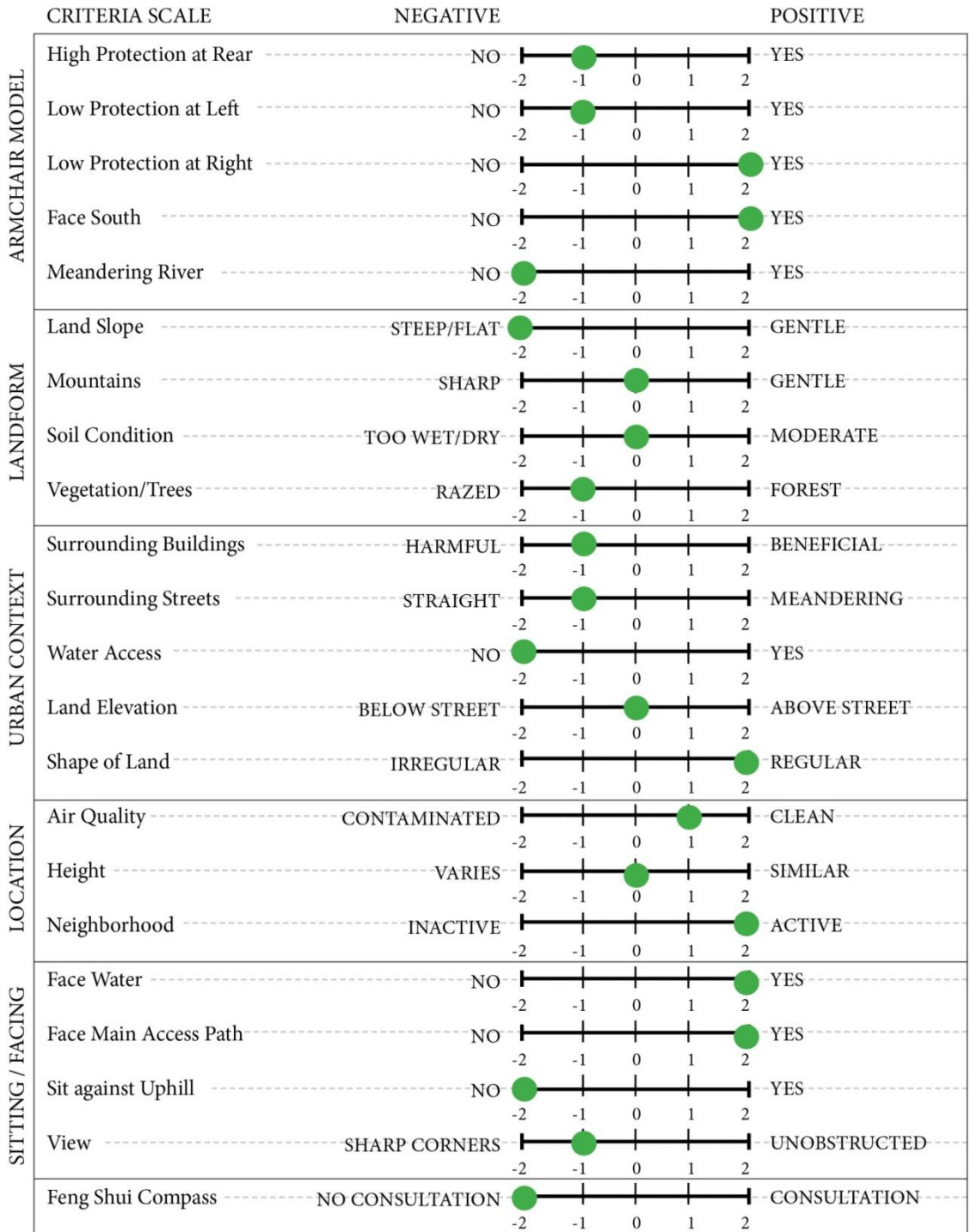


Figure 37. Proposed TOD Zoning Map¹⁷⁶

¹⁷⁶ City and County of Honolulu. Digital Image. <http://www.honolulu.gov/tod/neighborhood-tod-plans/dpp-tod-alamoana.html>.



Figure 38. Site C Context



Total = -3

Figure 39. Site C Application

5.3 Summary

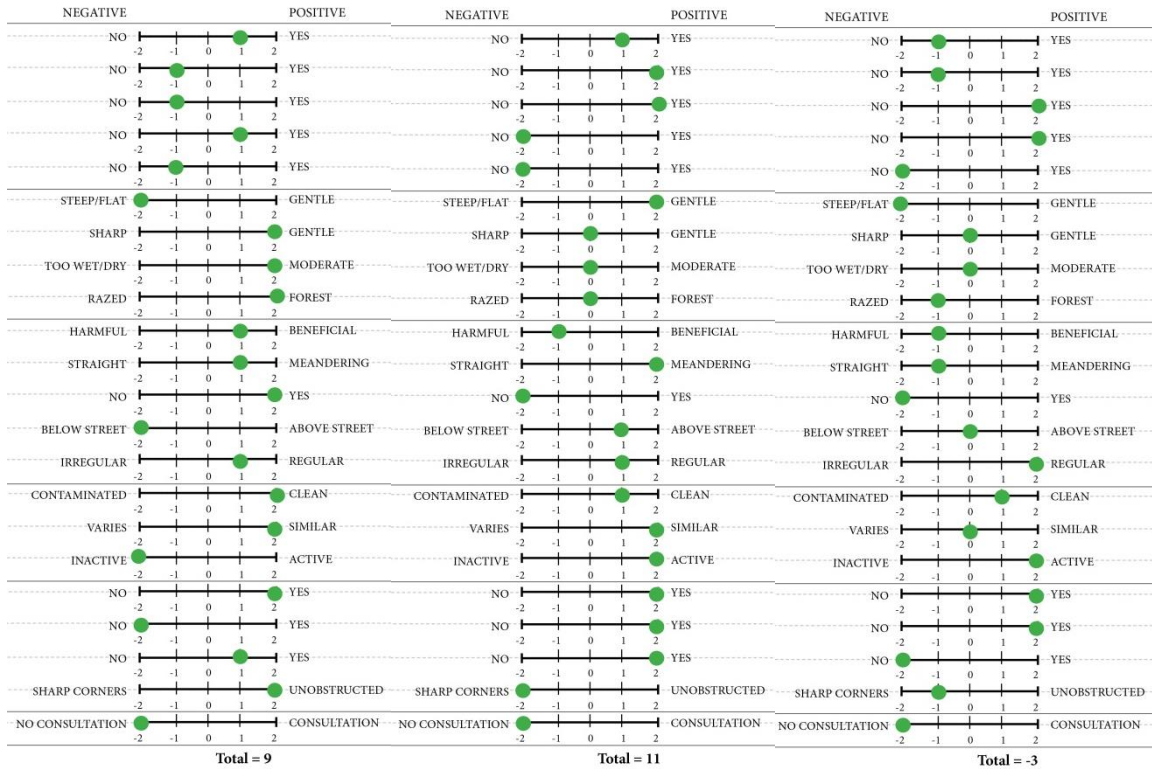


Figure 40. Site A, B and C Comparison

The comparison shows that Site C has a summation result closest to 0, which is the ideal number. The comparison also shows that a site in a forestry area is preferred over a residential site which faces north. Although Site A comes from the feng shui spot of Oahu, this analysis shows that the tool can be used in other areas as well. The tool also suggests that even though some criteria such as being on a slope and having protection are beneficial to the site, it may be harmful to have too many benefits. In other words, it is good to have some negative aspects to balance out the positive. Hence, Site C is chosen for the project. The next chapter will begin the building design stage for the chosen site.

Chapter 6. Building Design

The building design process involves three stages: Site Analysis, Building Layout and Space Layout. Next, materiality is explored with the concept of the five elements theory. Then, final documentation will show the finalized design through drawings and representations.

6.1 Site Analysis

In the site analysis stage, the sections include Gather Requirements, Analyze Qi, and Compass Design.

6.1.1 Gather Requirements

a. Site Overview

The location, zoning and building code requirements for the chosen site is reviewed to find building height and limitations.

802 Cedar Street, Honolulu, HI 96814
Ala Moana

Zoning
A-2

Max Height
150'

Lot Area
7,054 SF

Max Coverage
60% of Lot = 4,231 SF

Floor Area Ratio (F.A.R)
7,298 SF

b. Building Program

The general program requirements for a multifamily residential include the unit type and number of parking stalls. In this case, four units of 2 beds/1 bath, and two units of 1 bed/1 bath is chosen which results in eight parking stalls allowed according to building code and regulations.

Main Lobby

Unit - 2 Bed/1 Bath (4).....799 SF
Unit - 1 Bed/1 Bath (2).....599 SF

Parking

$$(1.5 \text{ Stalls} \times 4) + (1 \text{ Stall} \times 2) = 8 \text{ Stalls}$$

c. Perimeter and Axis

There is a 10' setback on all sides of the lot. In Figure 41, the red axis shows the facing and sitting directions which also determines its right and left side. The facing direction is towards Rycroft Street and the sitting direction is towards two-storey adjacent buildings. The front is determined by where the main access road is and where there is the most activity. The back is therefore the quieter side with least activity.

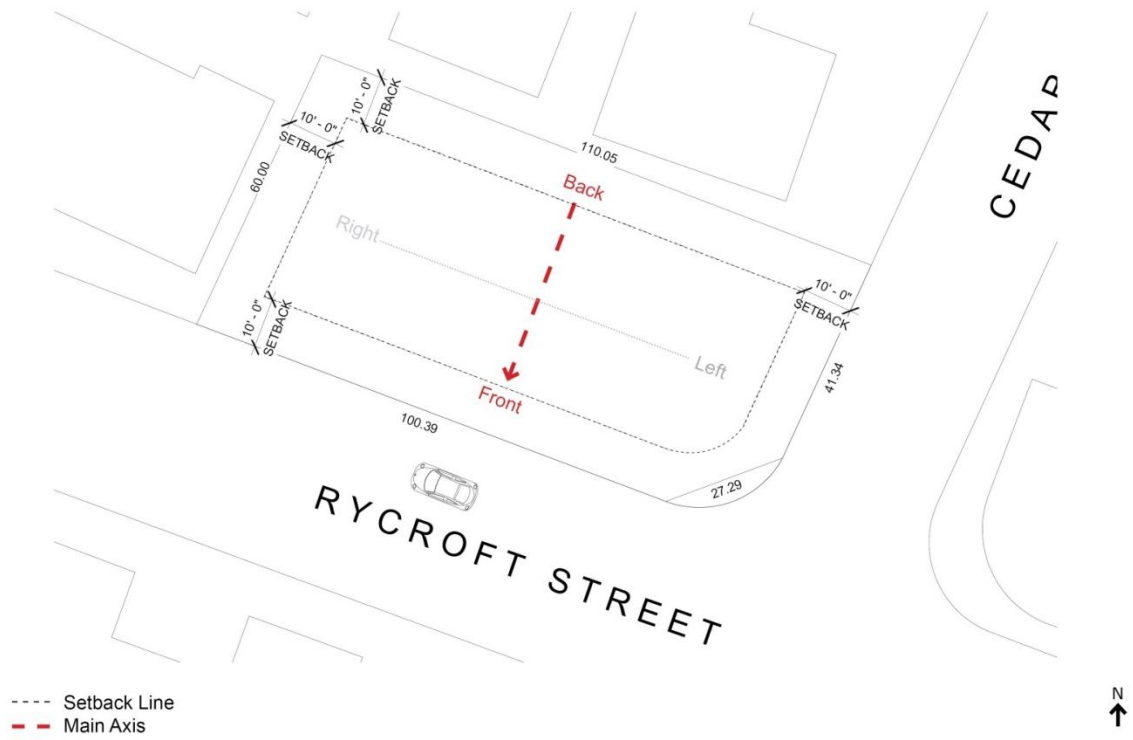


Figure 41. Perimeter and Axis

6.1.2 Analyze Qi

a. Climate

The trade winds of Honolulu travel from the Northeast and the sun travels from east to west with slight angle changes depending on the month. The good qi, drawn from the trade winds and natural light, are represented by blue arrows. It is important to note that although the site lacks rear protection, it may be beneficial to the site given that Honolulu does not receive strong winter winds. Having rear protection may be preferred in a non-tropical site.

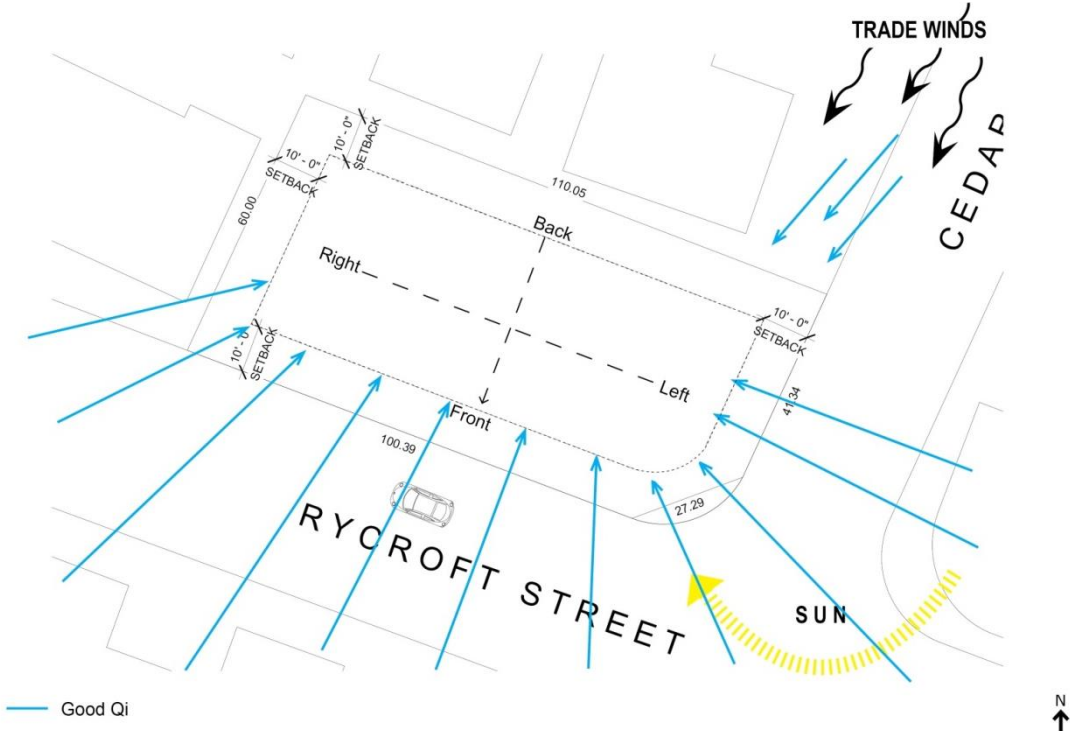


Figure 42. Climate Qi Diagram

b. Traffic

The site is located at the intersection of Rycroft and Cedar Street. Rycroft is a main two-way street. Cedar is a slow one-way street. Cedar coming down to the site brings qi down with it. Rycroft carries qi both ways. Even though intersections are considered a bad road pattern, in this particular case it seems to be less harmful since cedar is one way and not too busy. It also leads to a dead end, which reduces traffic as well. The following shows the overall site analysis with surrounding building heights and traffic type.



Figure 43. Surrounding Site Analysis

In context, because Rycroft is a two-way street, it brings double the amount of good qi than Cedar. At the same time, there is noise which is emitted from traffic and surrounding commercial buildings. This results in bad qi, shown in red. Immediately Rycroft has both good and bad qi while cedar only has good qi.

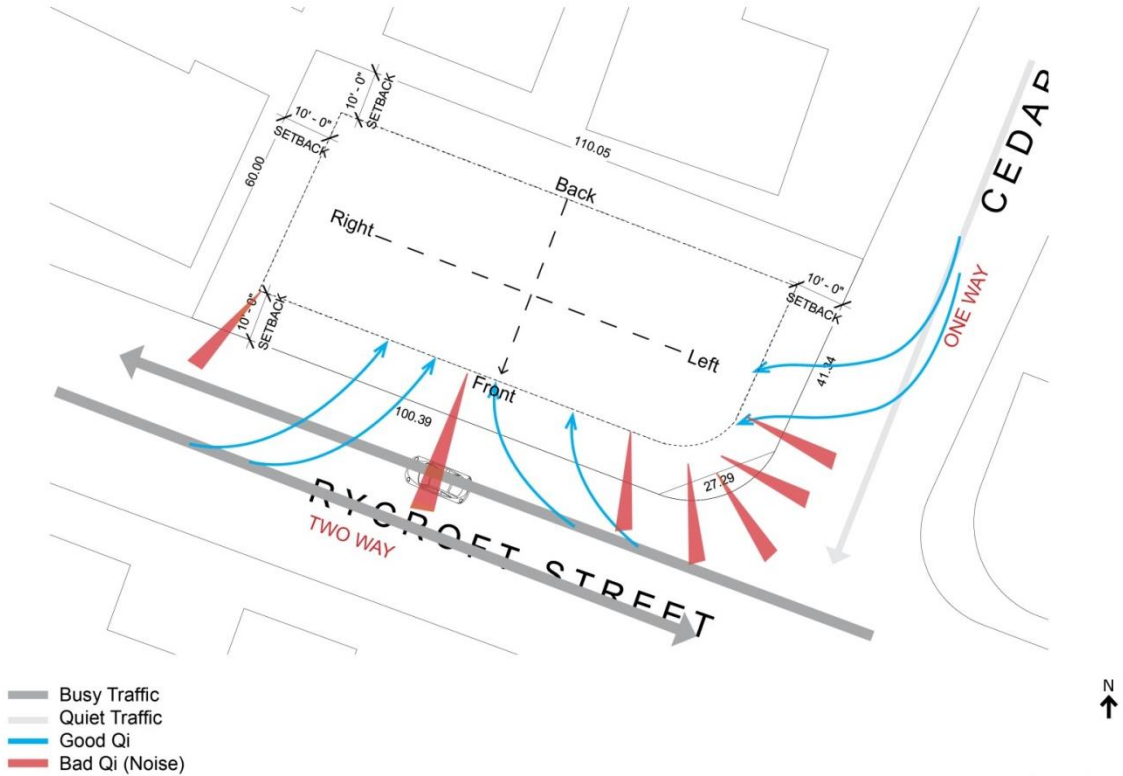


Figure 44. Traffic Qi Diagram

c. Surrounding Buildings

Any type of sharp edges is unfavorable in feng shui. Hence, it is important to know where the wall knives are coming from in order to avoid it during the design process. Shown in red, the wall knives directly send bad qi that pierces through the site.

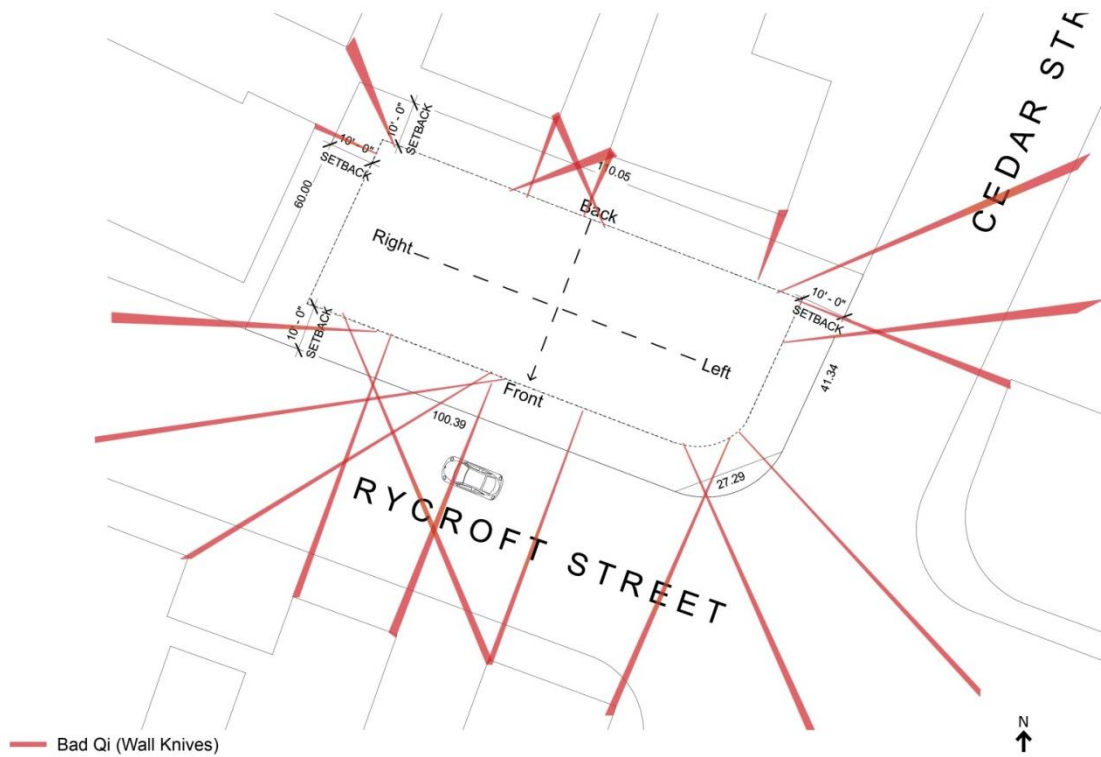


Figure 45. Surrounding Buildings Qi Diagram

d. Qi Gesture Diagram

In order to find areas that bad qi does not hit, this diagram combines all the qi analysis and provides blockage gestures. This provides a visual understanding of how much protection is needed for qi to come in.

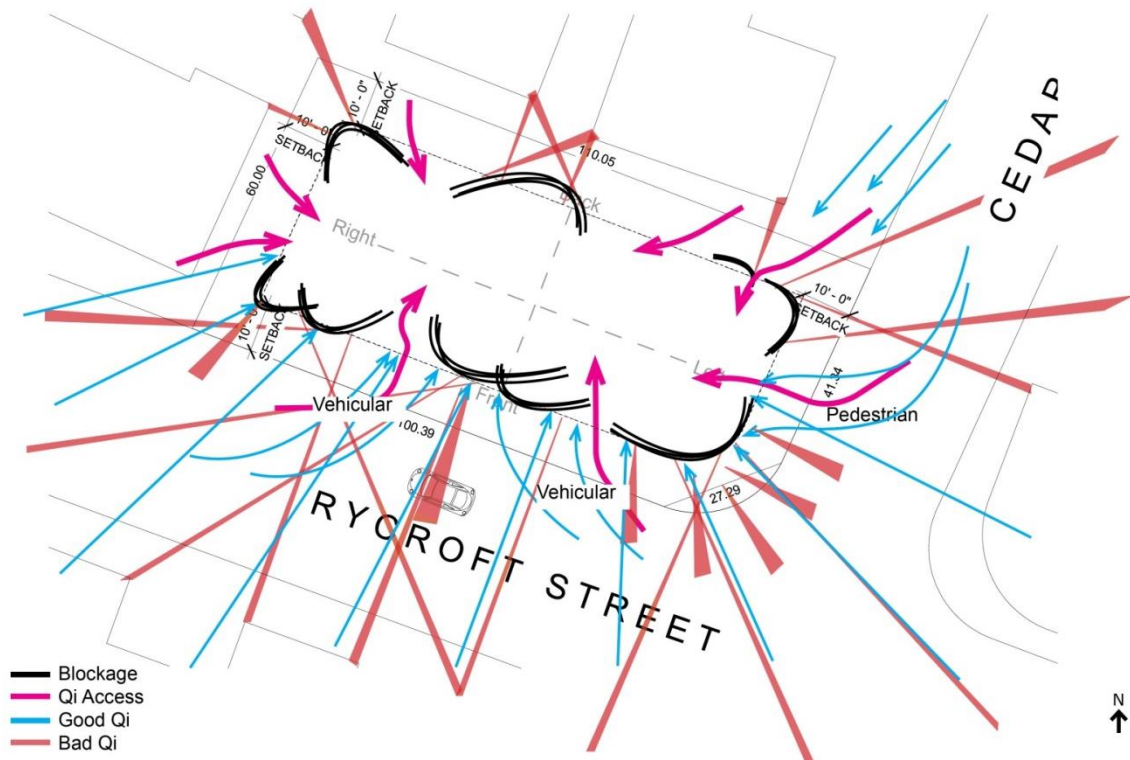


Figure 46. Qi Gesture Diagram

6.1.3 Compass Design

A compass is designed for the main reason of determining the facing direction of the project as well as relating it to true north and climate. This compass will be used as a tool for the next sections on building and space layout.

The components of the compass are:

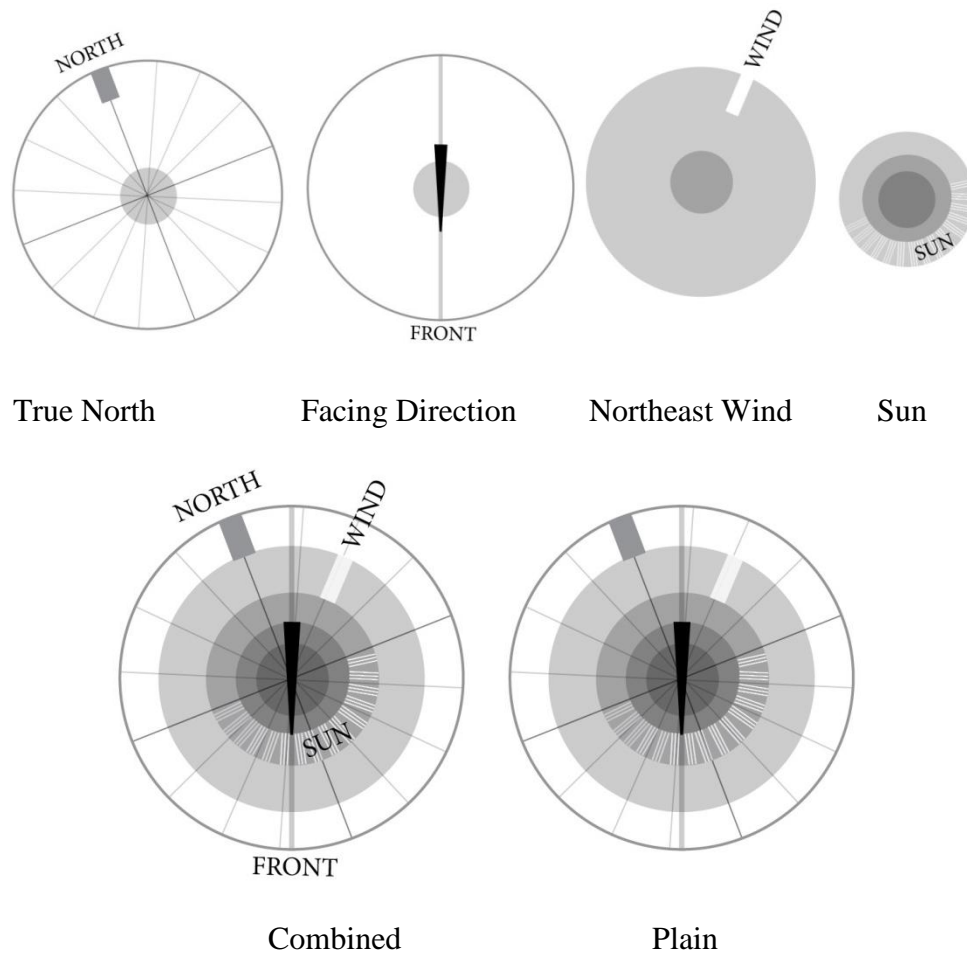


Figure 47. Compass Design

6.2 Building Layout

In the building layout stage, the sections include Core and Parking, Main Entry and Residential Building. The Core and Parking determine the base of the building, Main Entry determines the pedestrian entry, and Residential Building determines the building form and layout

6.2.1 Core and Parking

Located at an intersection, the site has access from the main road and a secondary road. Bad qi shown in red (Figure 48) are directed from surrounding building corners and traffic noise. They can be blocked with a solid wall or landscape shown in green. In this case, the core (elevator, stairs, and mechanical space), which is made of mostly solid wall, is placed in the middle front to block bad qi. In other areas where bad qi hits the site, landscape is used as a blockage. Aside from vehicular circulation, the layout allows space for parking on the side and back of the site, giving little space for the pedestrian.

Good qi shown in blue (Figure 49) are directed from the climate (wind and sun) and road access. The openings which good qi are able to enter the site are opportunities to allow qi to flow through. The openings in the front connected to the main road are vehicle access and the opening connected to the secondary road is pedestrian access. Openings shown on the side and back of the site do not have good or bad qi directed to it, hence, should be left open to allow qi to flow through. The circulation of qi is always recommended. It is important to note that there should be a separation between pedestrian and vehicles to enhance the qualities of the main entry.

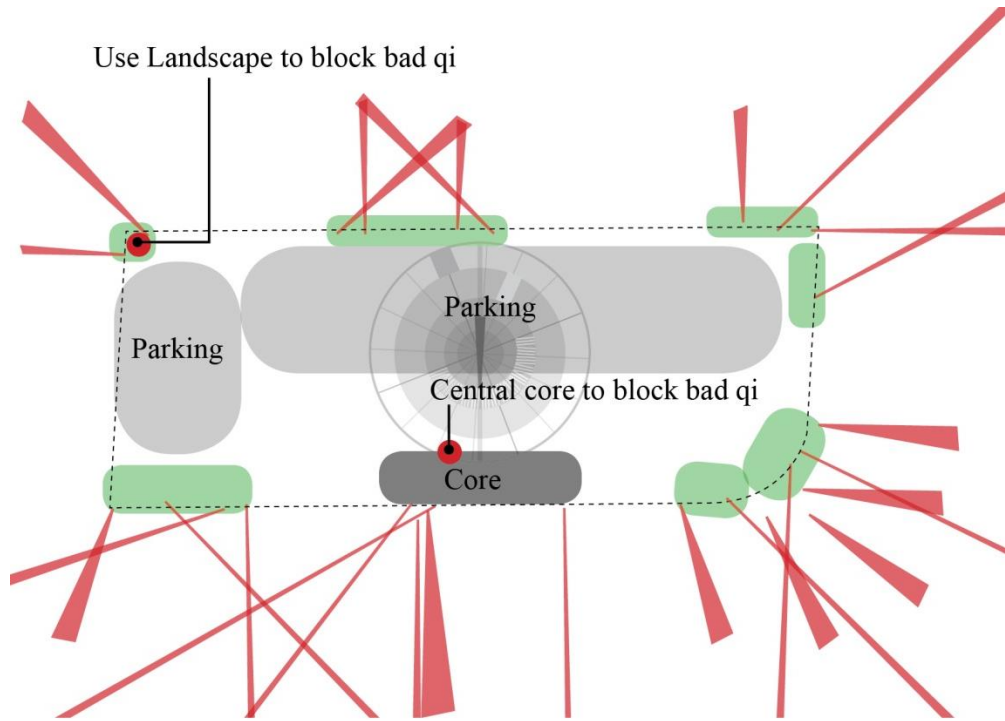


Figure 48. Core and Parking Bad Qi Diagram

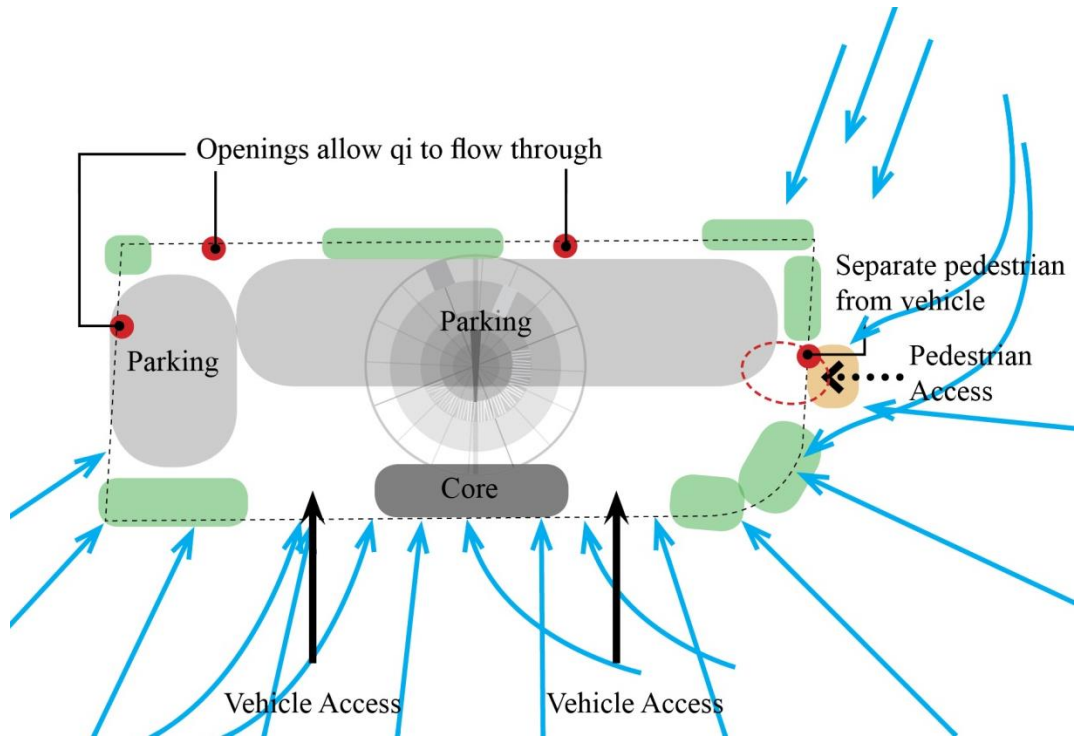


Figure 49. Core and Parking Good Qi Diagram

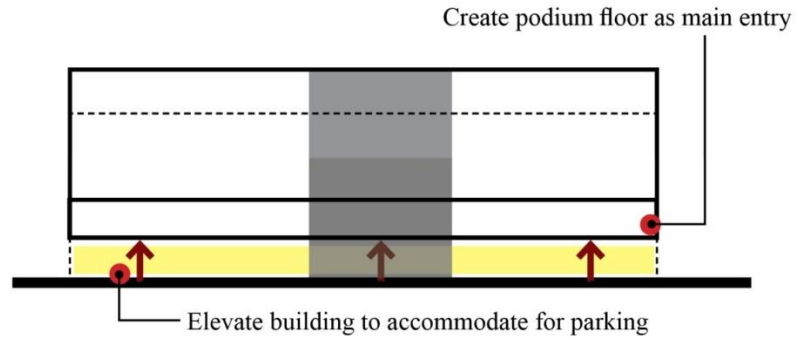


Figure 50. Podium Diagram

Since the first floor allows little space for pedestrian experience, the building is elevated to not only accommodate for parking but also to create a podium floor as the main entry (Figure 50).

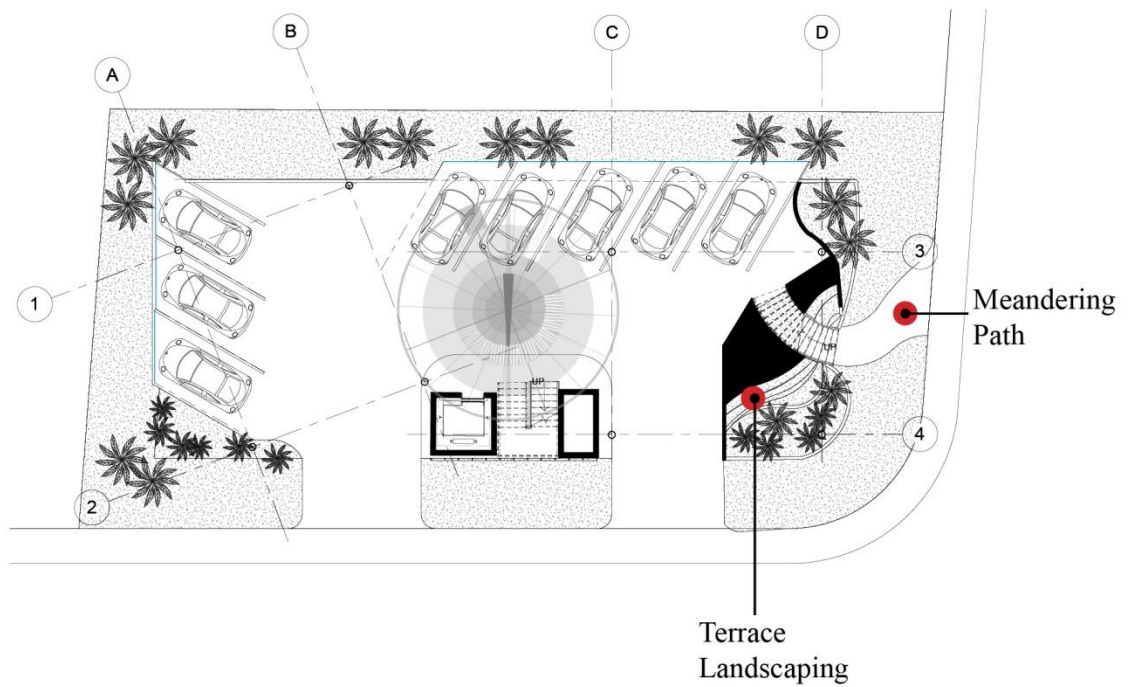


Figure 51. Level 1 Diagrammatic Plan

A total of eight parking stalls is shown on the plan (Figure 51), along with the central core (elevator, stairs, and mechanical space) and surrounding landscaping. Pedestrian access is shown as a meandering path leading to a stairway. In addition to landscaping on the corner condition of the site, terrace landscaping along the stairway serves as bad qi blockage as well as a transition from street level to the building.

6.2.2 Main Entry

In the second level or the podium, there should be a strong relationship between the entry, water, and core (Figure 52). This relationship emphasizes the importance of the entry. The entry can also be the “Qi Mouth”, where qi comes into the site and benefits the entire building. Again, the bad qi is shown in red and the central core and landscaping is used as qi blockage.

Openings created from the landscape allow good qi to come in and flow through (Figure 53). Water is used to attract wind. Both wind and water are important aspects in feng shui and are emphasized in the project. The pedestrian access from the street to the podium enhances the street to building relationship. The entry also is oriented to face north, a principle drawn from traditional feng shui.

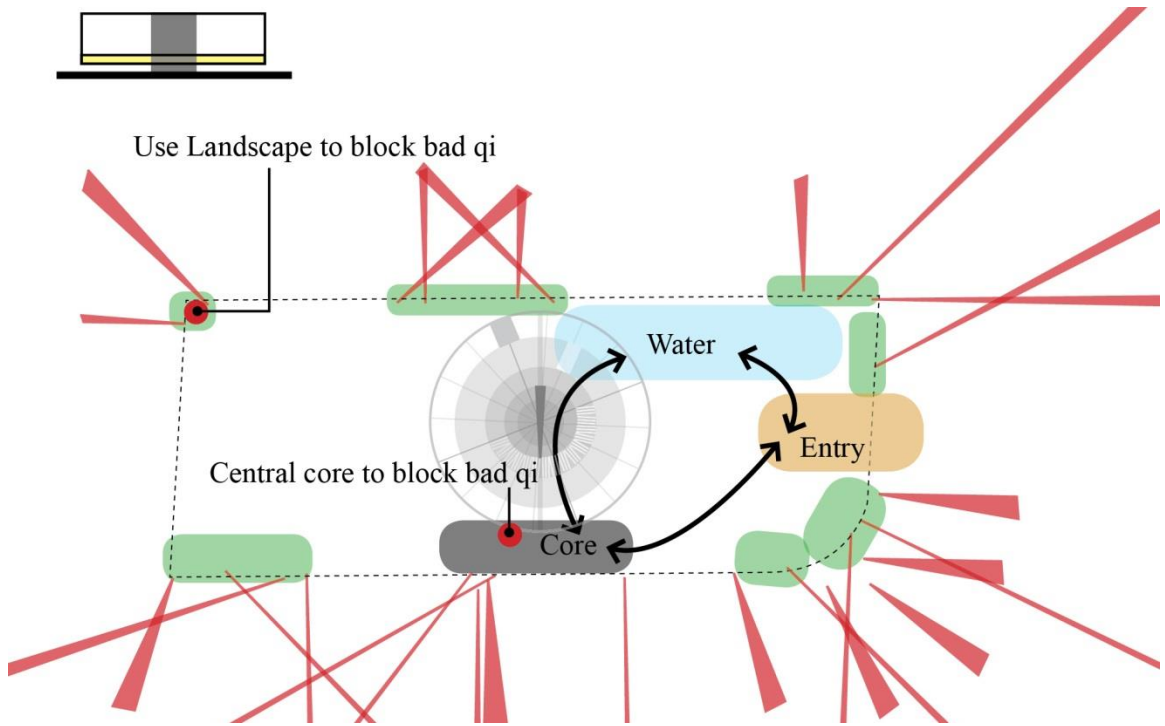


Figure 52. Main Entry Bad Qi Diagram

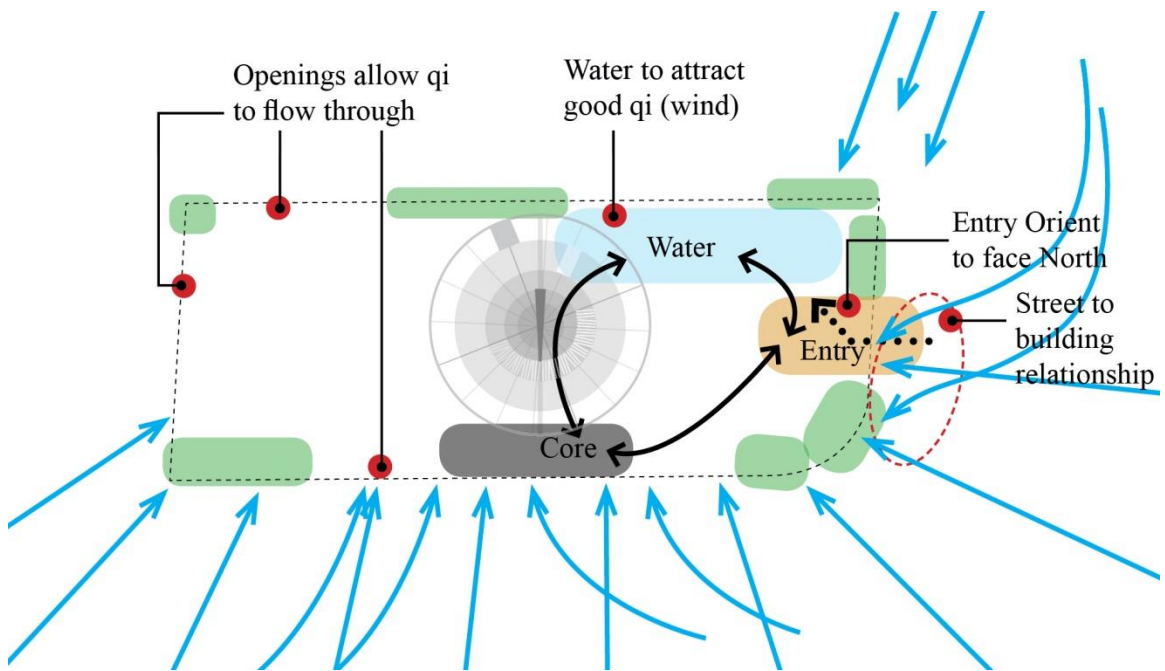


Figure 53. Main Entry Good Qi Diagram

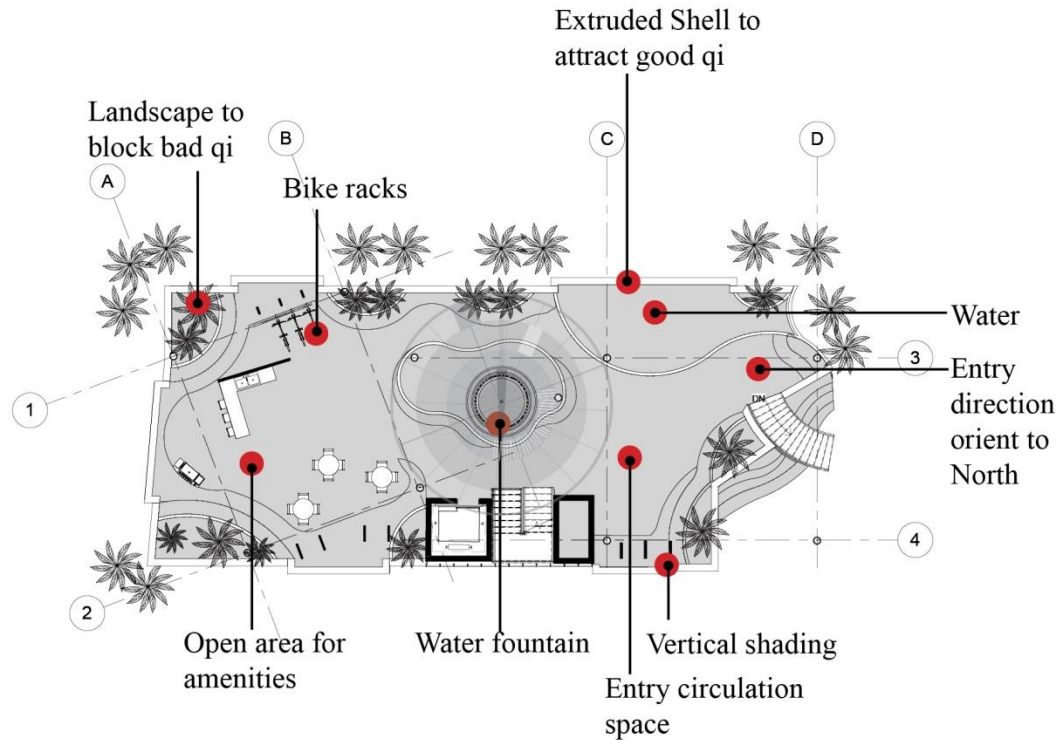


Figure 54. Level 2 Diagrammatic Plan

Water is represented as a pond to attract the northeast wind coming in. Another pond is placed in the center of the building, including a water fountain which aligns with the core. As residents walk up the meandered stairs onto the podium, they immediately view water. They are able to either explore the landscape or meander to the core to access the upper floors. The form of the overall plan including the landscape is developed from the good and bad qi hitting the site. Where the bad qi hits, trees are shown. Where the good qi hits, the shell of the plan is extruded. This is to express that the building wants to attract the qi to come in. In addition, vertical shading also serves as a gateway for qi to come in. On the left is an open area for amenities. In this case, a barbecue area, open bar, seating and bike racks for residents to use.

6.2.3 Residential Building

In order to emphasize the water-to-building relationship, the residential building is split into two structures. Also, the larger surface of each structure is oriented to take advantage of the northeast wind. The top diagram in Figure 55 shows the required footprint and the bottom diagram shows the second structure to be oriented slightly, facing north.

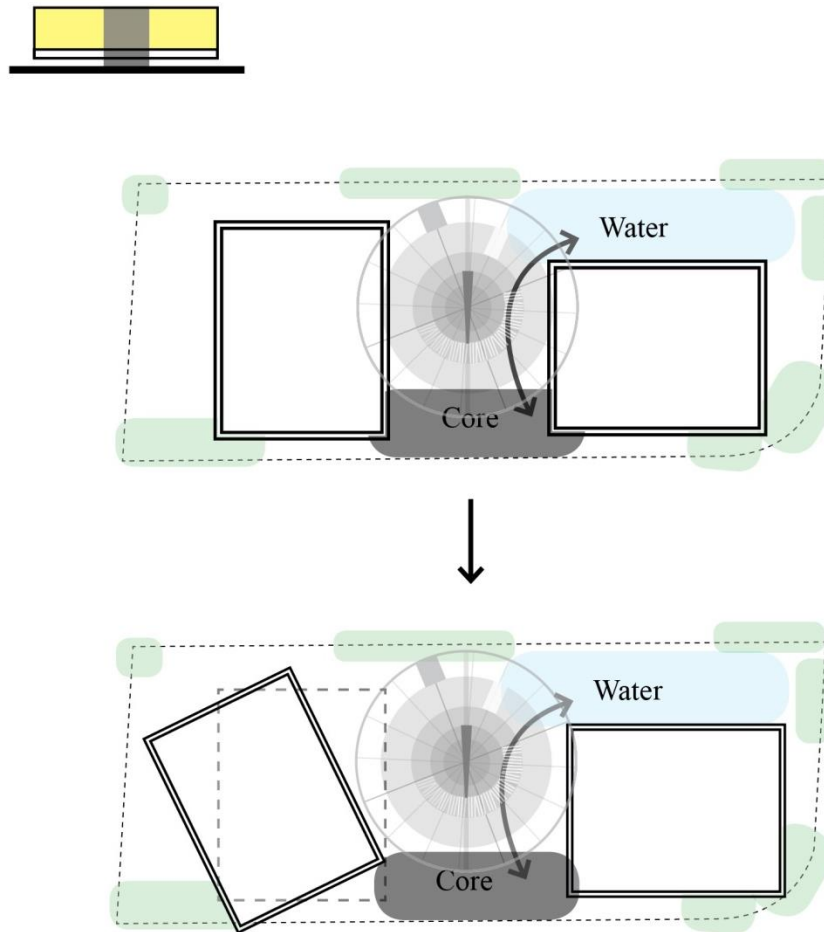


Figure 55. Residential Building Orientation Diagram

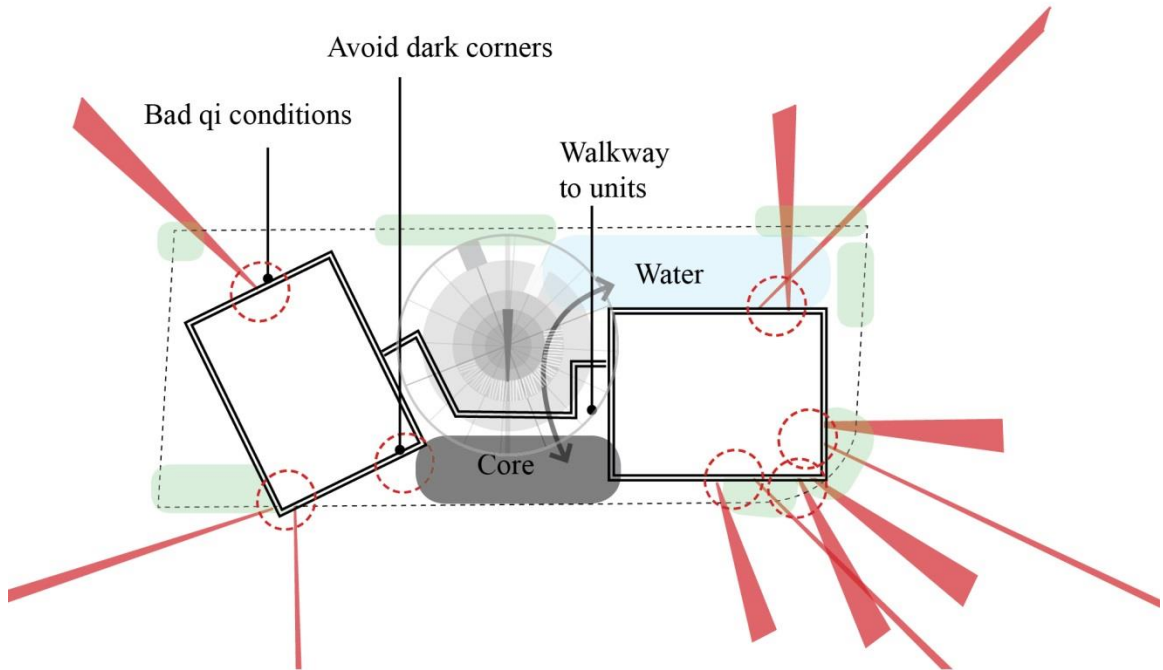


Figure 56. Residential Building Bad Qi Diagram

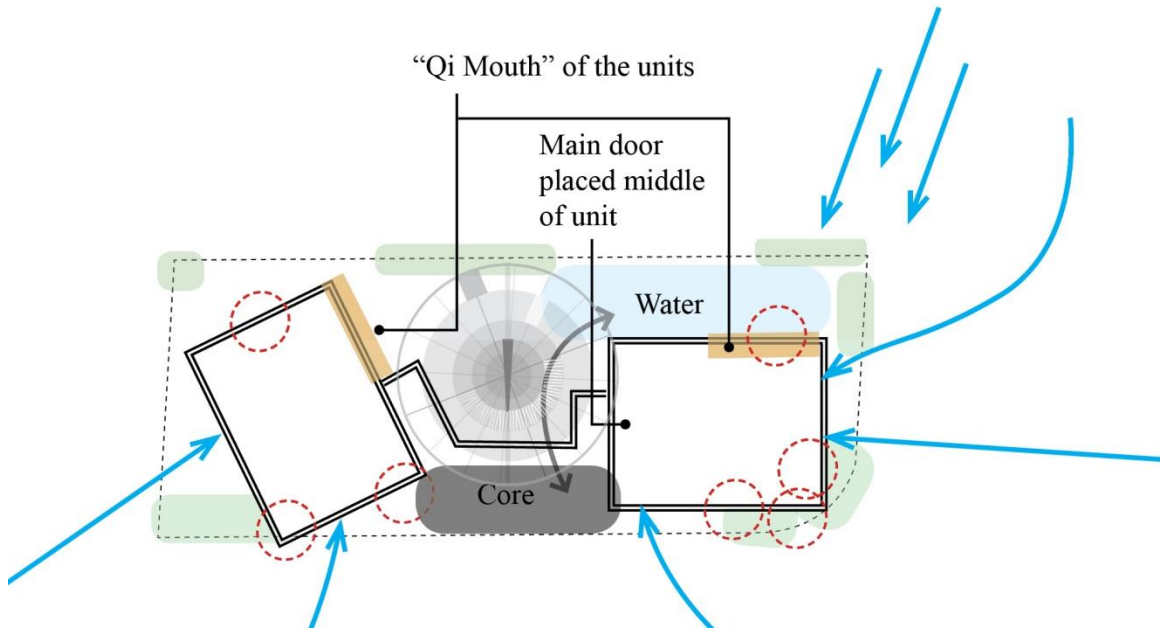


Figure 57. Residential Building Good Qi Diagram

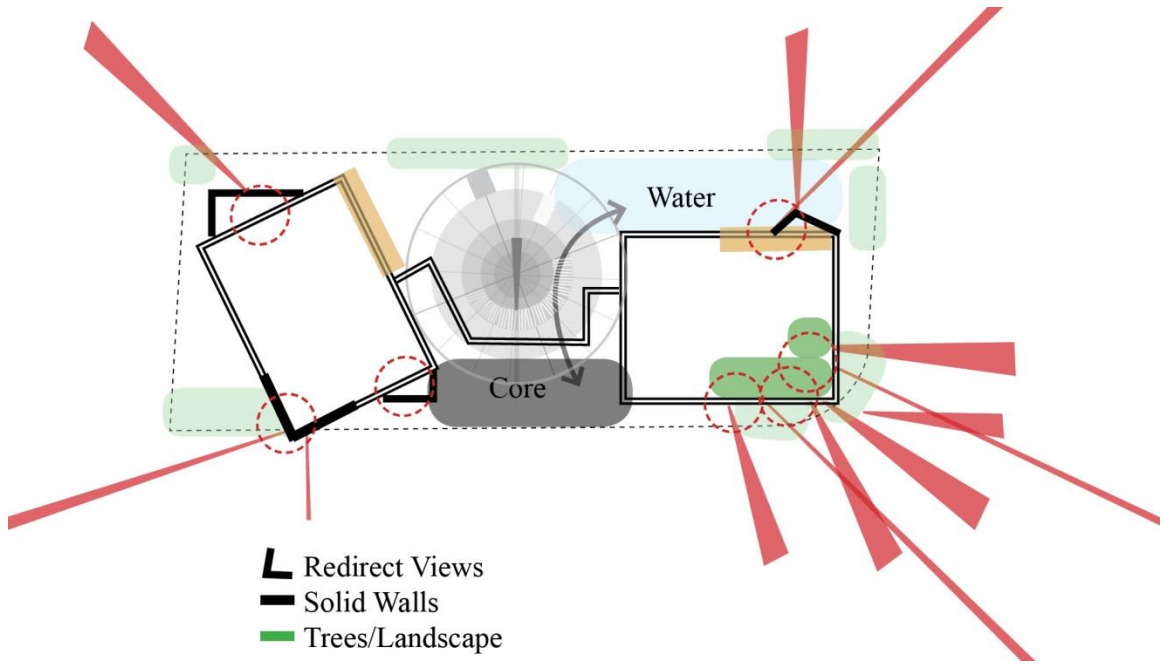


Figure 58. Residential Building Bad Qi Remedy

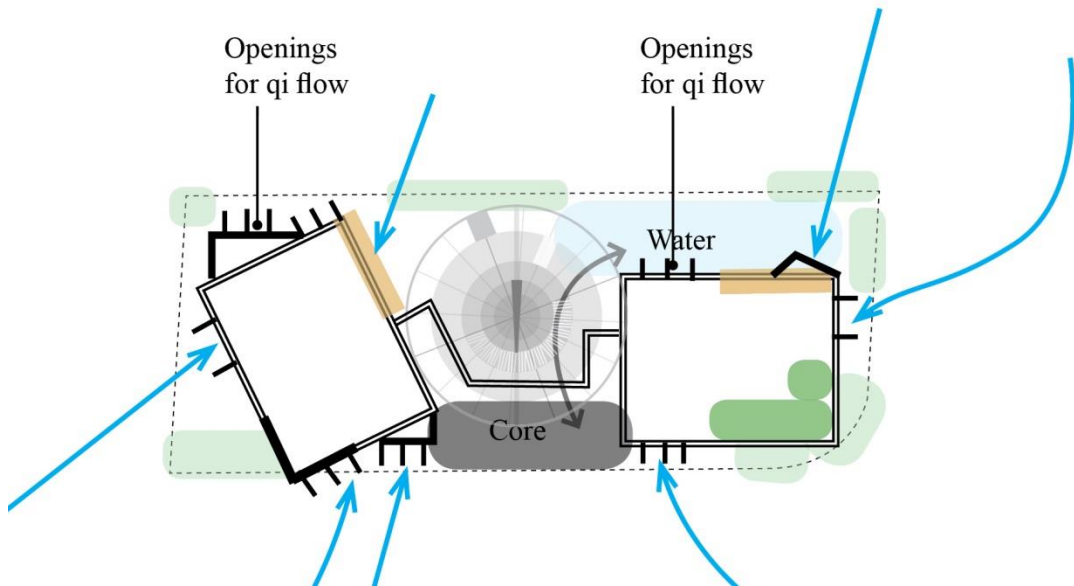


Figure 59. Residential Building Good Qi Gateways

The bad qi conditions that affect the building are highlighted (Figure 56). These include bad qi that hit the site and dark corners. The diagram shows an overlay of landscaping from Level 2 which helps block bad qi that hit the site but not the building envelope. A walkway is also added to connect each unit to the core. When looking at good qi hitting the site (Figure 57), the unit “Qi Mouth” is placed on the larger surfaces to take advantage of the wind. There are also possible openings around the building that can provide a gateway for good qi to flow in and out of the unit.

After identifying the bad qi conditions, it is necessary to modify the building shell to avoid bad qi. Some elements include redirecting views, adding solid walls, and adding landscaping (Figure 58). On the other hand, in addition to establishing the “Qi Mouths”, opening up the building shell by adding openings (windows) or vertical shading can help express the qi gateways.

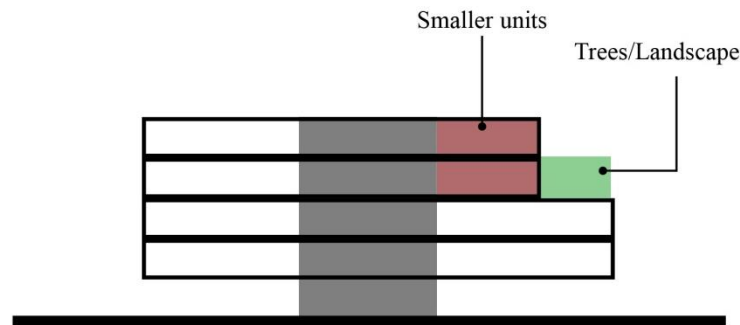


Figure 60. Residential Building Corner Landscape

Due to the issues relating to code, two units need to be smaller so they were placed on the side with bad qi condition which allowed the rooftop to be planting (Figure 60). The bottom floors with bigger units do not use landscaping to block bad qi and instead uses solid walls.

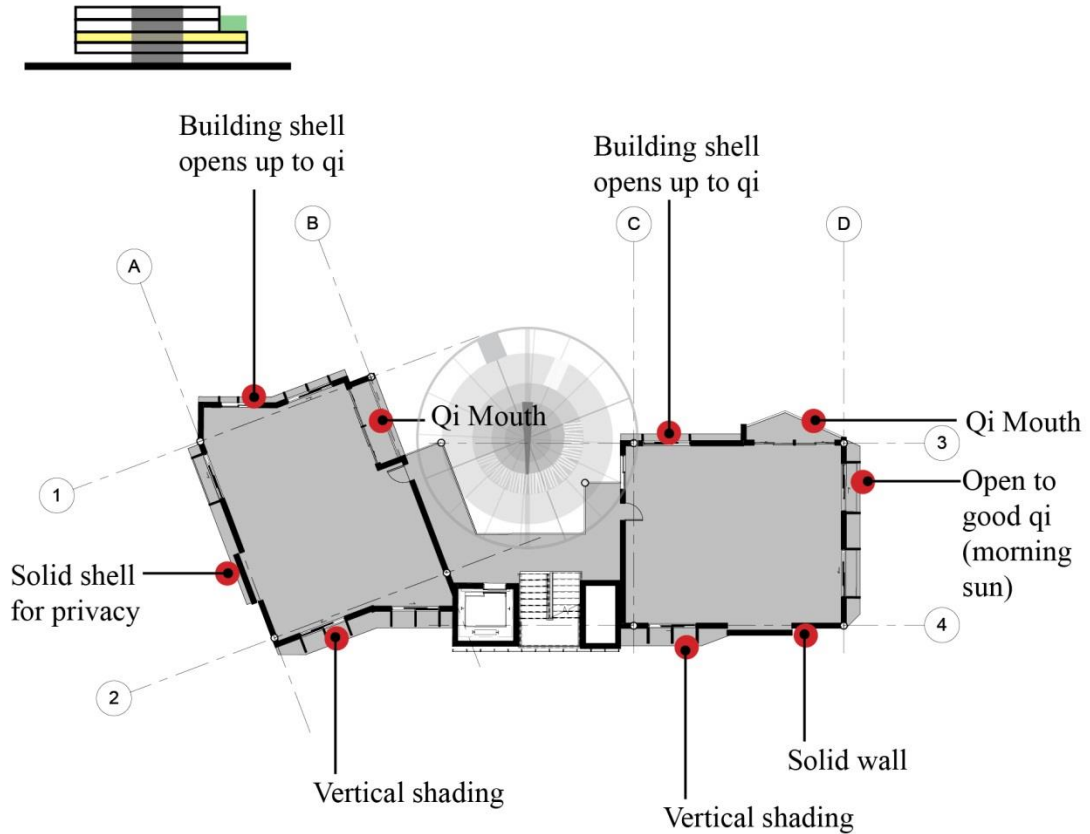


Figure 61. Level 3 Diagrammatic Plan

The building shell is expressed with a solid wall or opening or vertical elements (Figure 61). In addition, the shell is pushed out or pushed in to express the program. Where there is a solid wall, there is privacy. Where there is an opening, there is qi flow. The “Qi Mouth” is expressed as the balcony of the units. The main door is placed near the center of the units. Both units take advantage of the sun exposure, northeast wind, and the podium water features.

Similarly, Level 4 and Level 5 also express blockage and qi gateways (Figure 62 and Figure 63). Landscaping is placed on the exterior corner of the smaller unit of Level

4 and the rooftop of Level 3. Level 5 is the same except there is no corner landscape (trees shown on the level below).

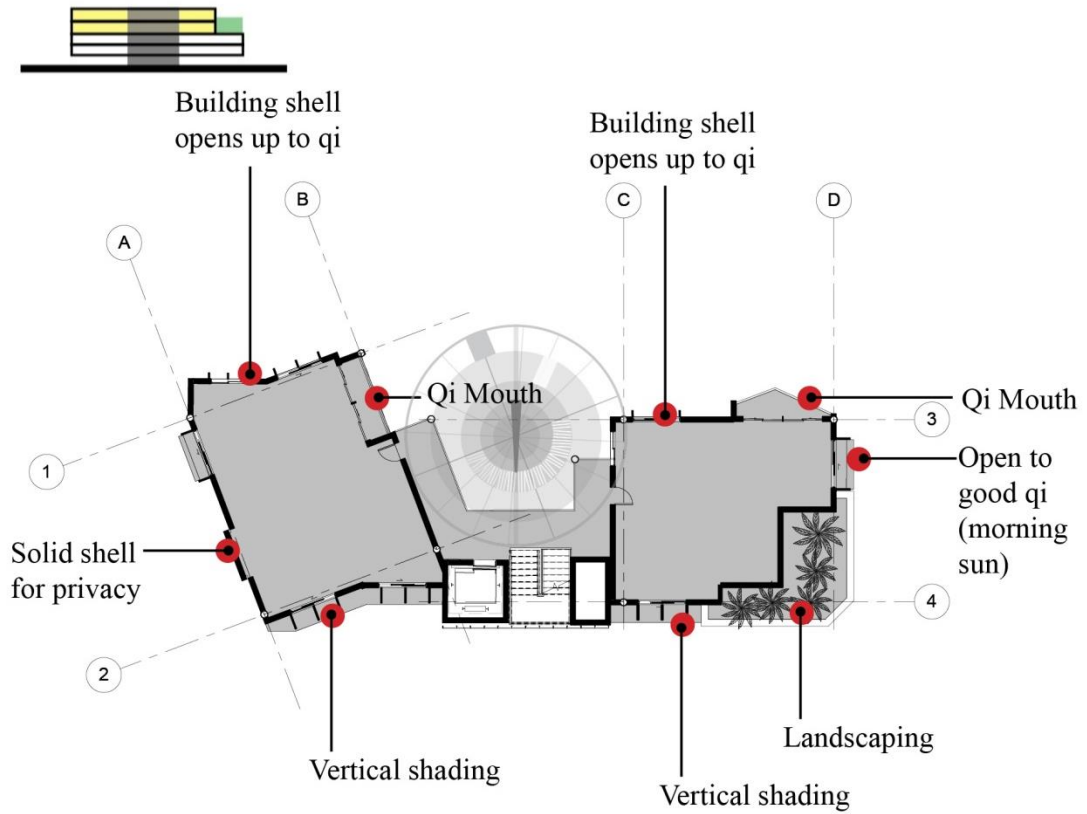


Figure 62. Level 4 Diagrammatic Plan

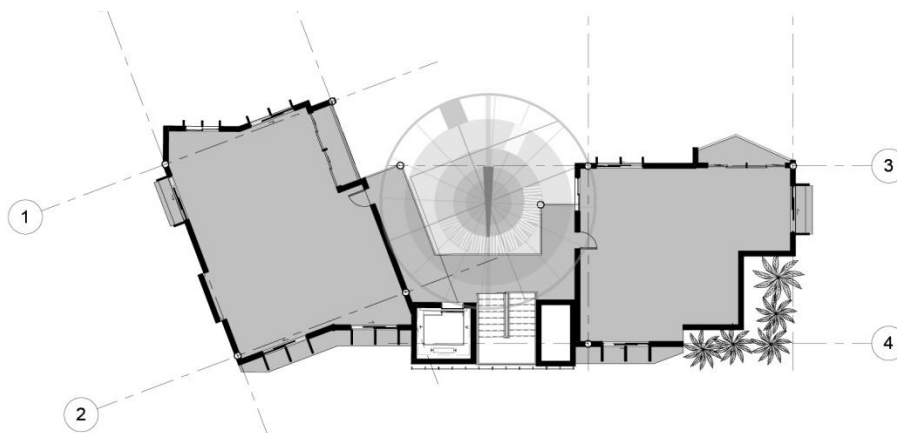


Figure 63. Level 5 Diagrammatic Plan

6.3 Space Layout

After establishing the building layout and shell expressions, the space layout will determine room placement and qi flow. In this stage, the sections include Unit Type A, Unit Type B, and Unit Type C. Type A appears on all three floors, Type B appears only on Level 3, and Type C is the smaller two units on Level 4 and Level 5.

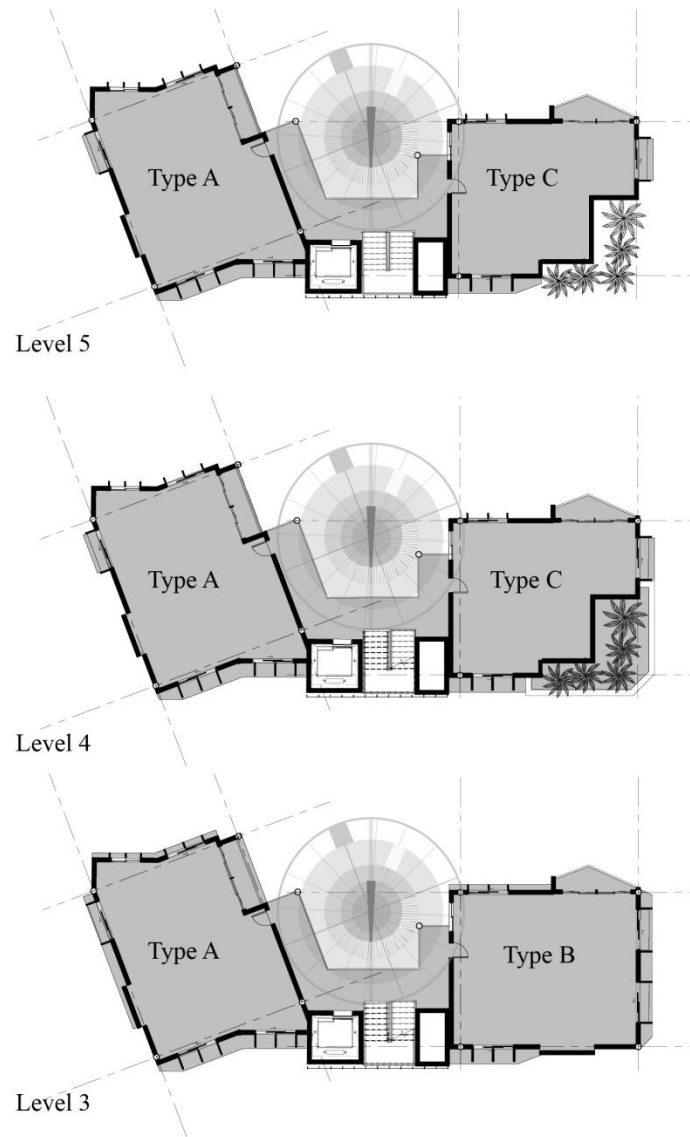


Figure 64. Space Layout Overview

6.3.1 Unit Type A (2 Bed / 1 Bath)

Unit Type A has a new facing direction. It is important to note that the building and unit can have different facing directions. As mentioned before, the building faces the main street in front. As for Unit Type A, the unit faces the main door, walkway and the side with more activity. In this case, the unit faces the podium.

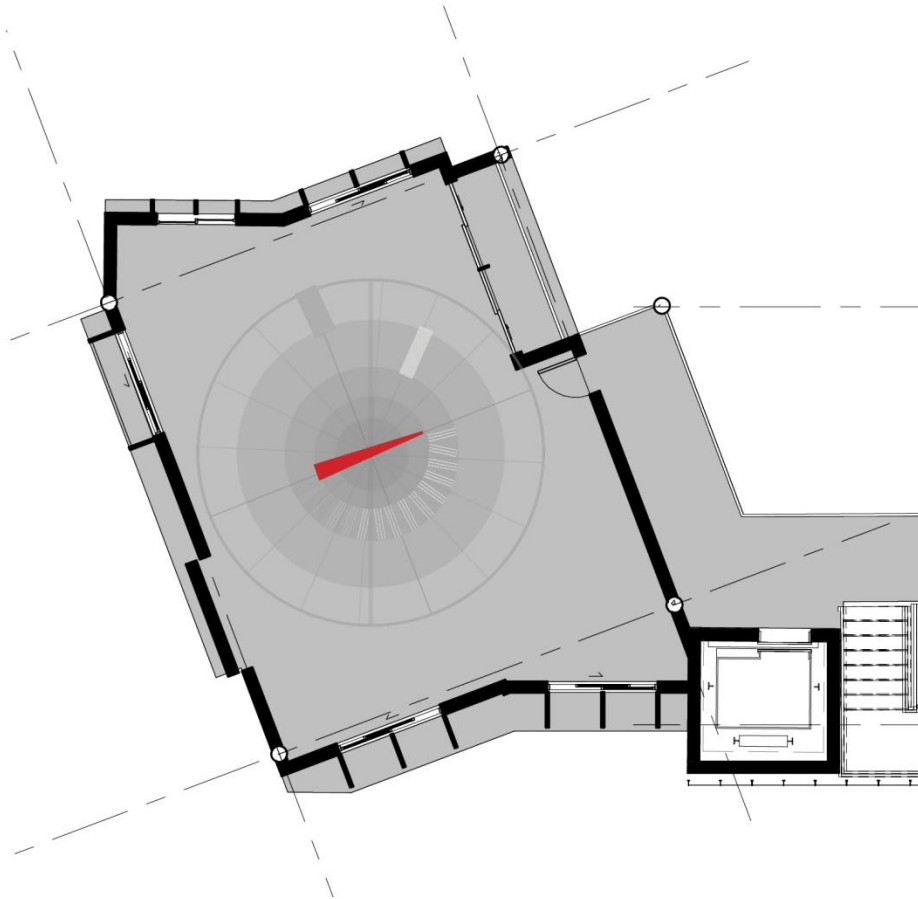


Figure 65. Unit Type A New Facing Direction

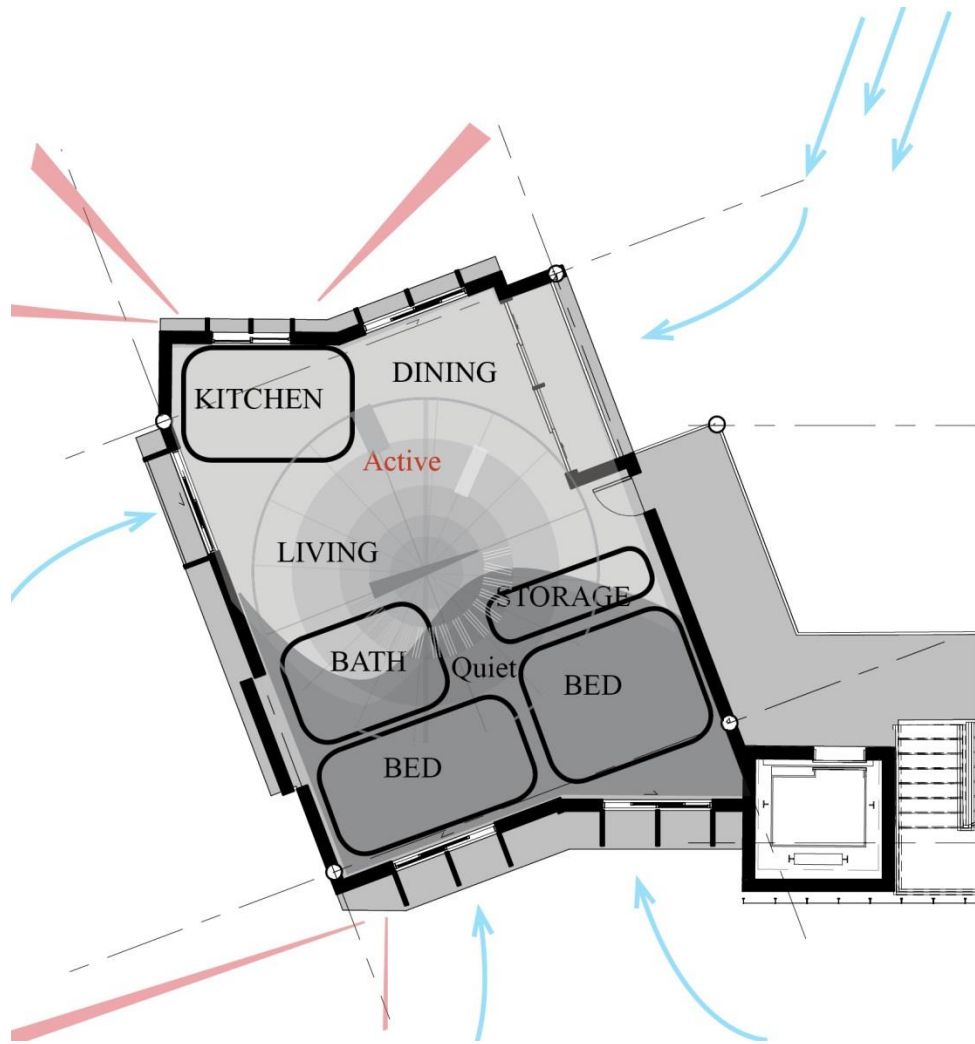


Figure 66. Unit Type A Space Layout

The unit is then split into two types of spaces, quiet (yin) and active (yang). The quiet spaces include the bedrooms where it is more private. The active spaces include the kitchen, dining, and living where it is more social and open. The bad qi in red and good qi in blue is again showed to emphasize the building shell expressions in relative to the program and surrounding influences.

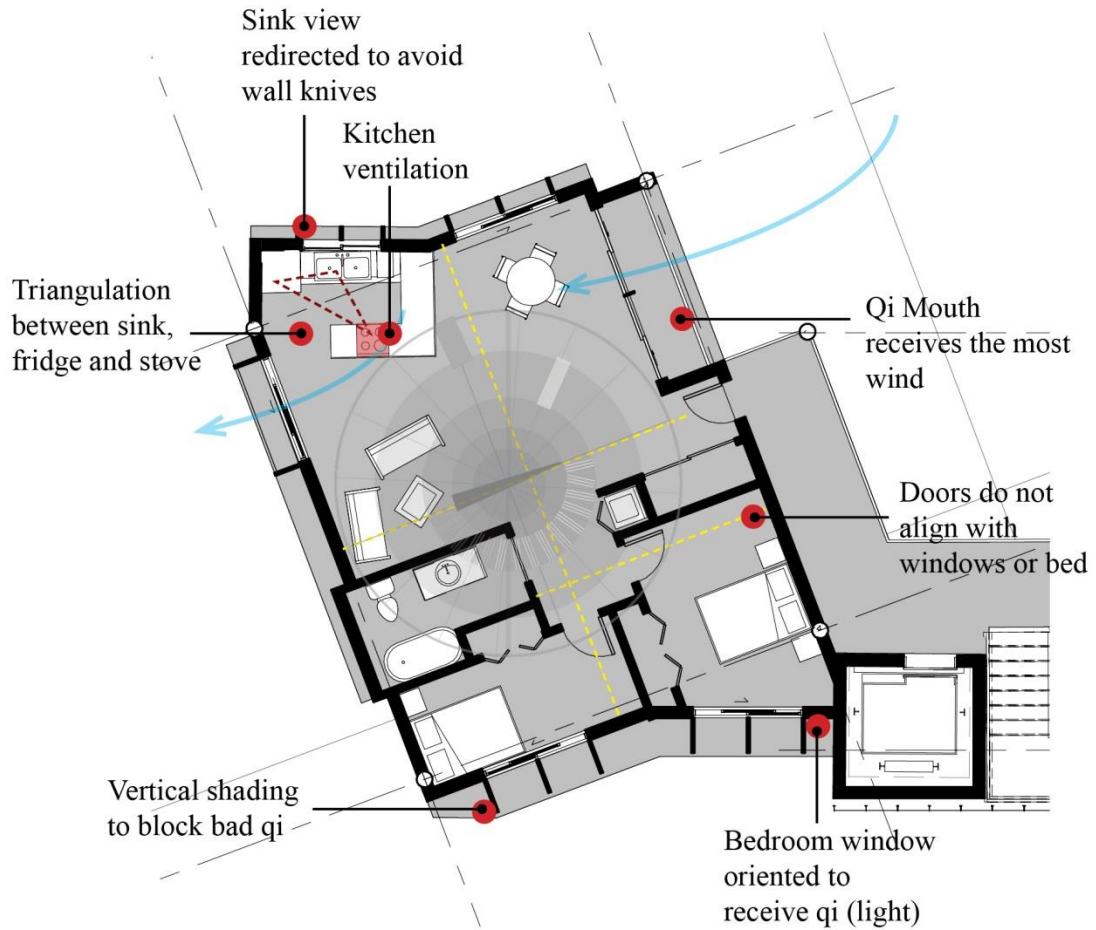


Figure 67. Unit Type A Floor Plan Analysis

In the floor plan analysis, the yellow lines show that the doors do not align with the windows, which means qi that flows into the unit will not immediately exit, allowing qi to flow through the unit smoothly. The bed also does not align with the door, which is considered part of the armchair concept. The blue arrows show ventilation for the kitchen, carrying bad qi created from the stove away. There is also a triangulation between the sink, fridge, and stove.



Figure 68. Unit Type A Qi Flow Analysis

In the qi flow analysis, the dashed blue lines show the main flow between openings such as from door-to-window or window-to-window. The solid blue lines show a lighter flow of qi into the spaces. The flow of qi is supported from the open active floor plan and the efficient placement of storage and closet space.

6.3.2 Unit Type B (2 Bed / 1 Bath)

Unit Type B also has a new facing direction. Similar to Unit Type A, it faces the main door, walkway, and the more active side. It therefore sits against the secondary street, the less active side.

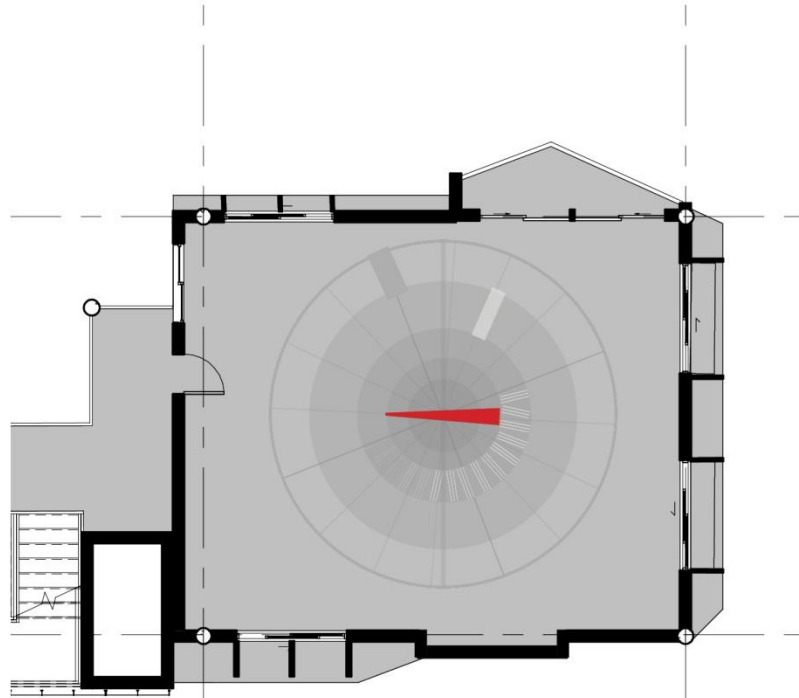


Figure 69. Unit Type B New Facing Direction

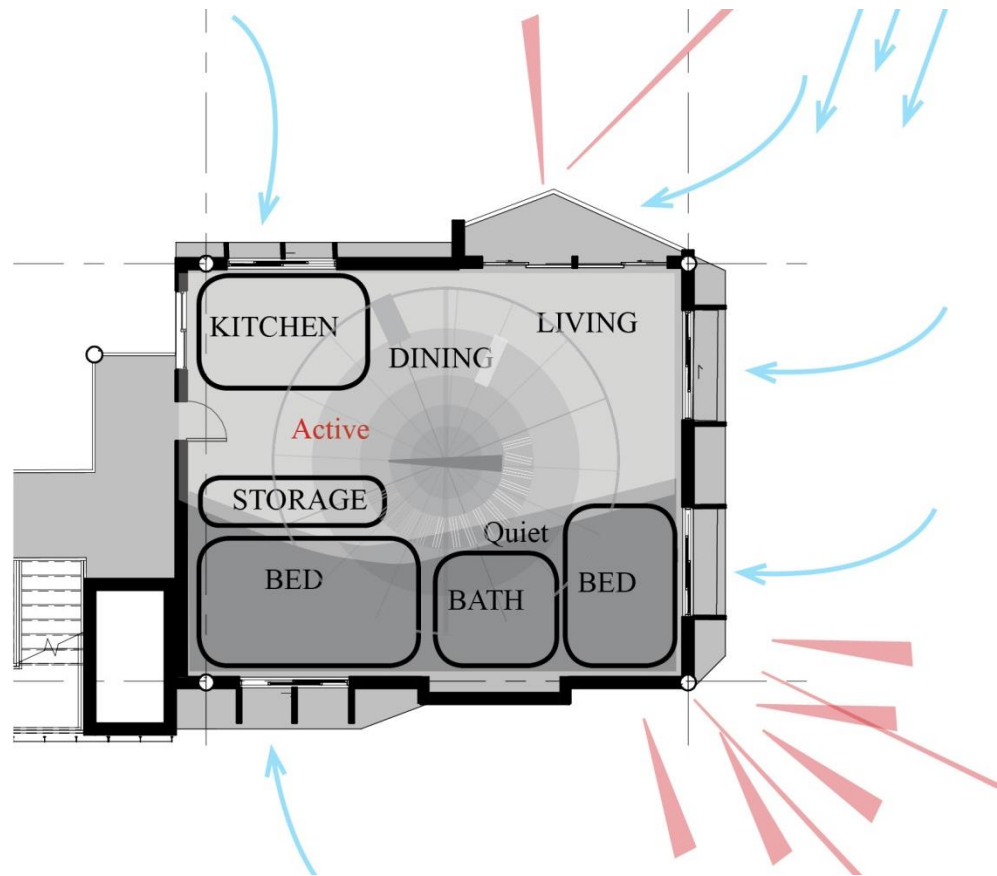


Figure 70. Unit Type B Space Layout

The unit is then split into quiet (yin) and active (yang) spaces. The quiet spaces include the bedrooms, which also sit against the main road. The active spaces include the living, dining, and kitchen. Again, the bad qi shown in red and good qi shown in blue express the building shell expressions relative to the program.

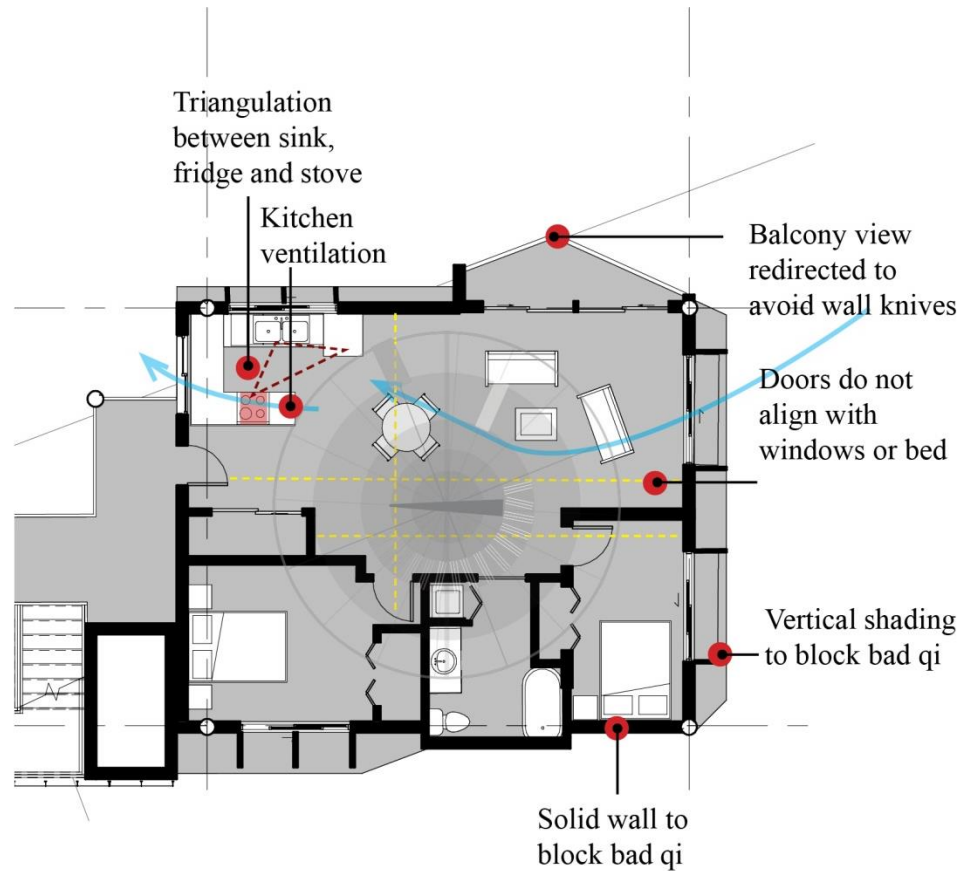


Figure 71. Unit Type B Floor Plan Analysis

In the floor plan analysis, the yellow lines show that the doors do not align with the windows, allowing qi to flow through the unit without exiting immediately. There are kitchen ventilation and triangulation between the sink, fridge, and stove. In addition, the balcony and other highlighted features of the shell express angled views, solid wall, and openness.

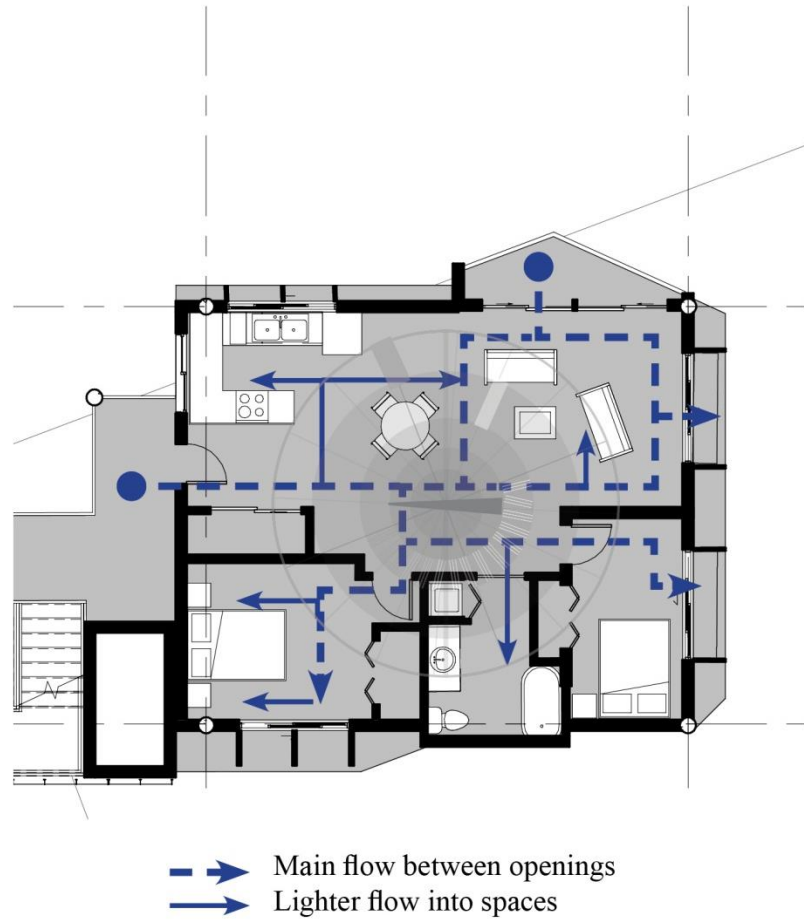


Figure 72. Unit Type B Qi Flow Analysis

In the qi flow analysis, the dashed blue lines show the main flow between openings and the solid blue line shows a lighter flow into the spaces. The open floor plan allows qi to travel into all spaces continuously without disturbance.

6.3.3 Units Type C (1 Bed / 1 Bath)

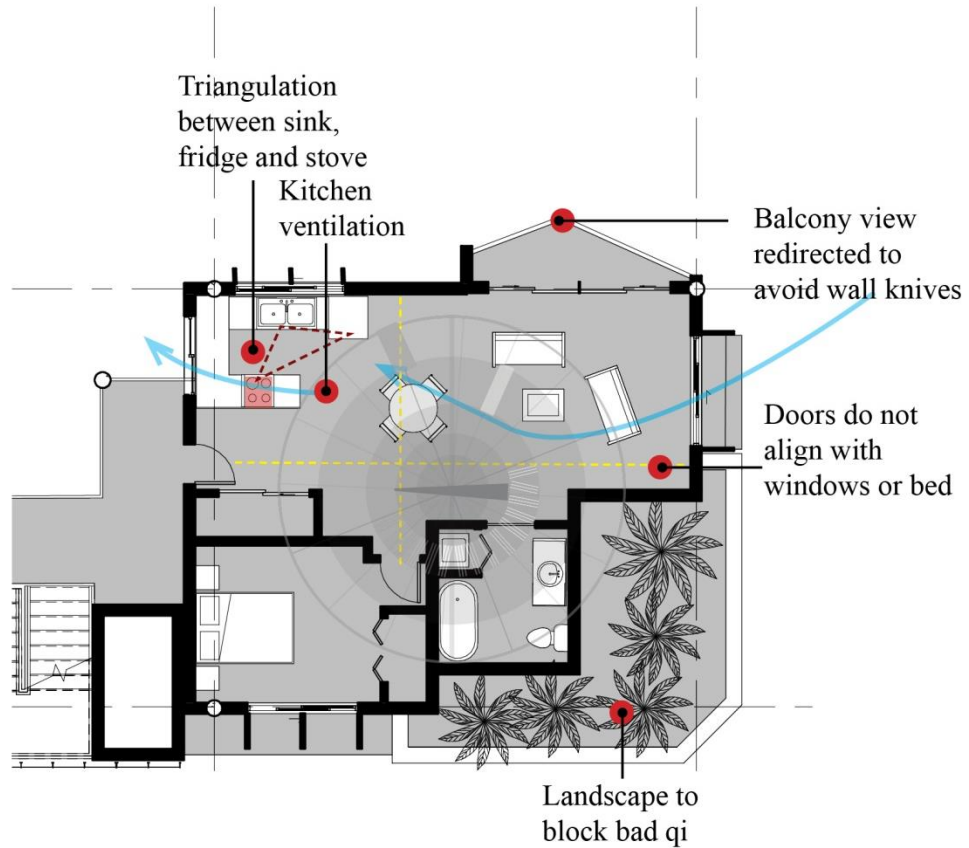
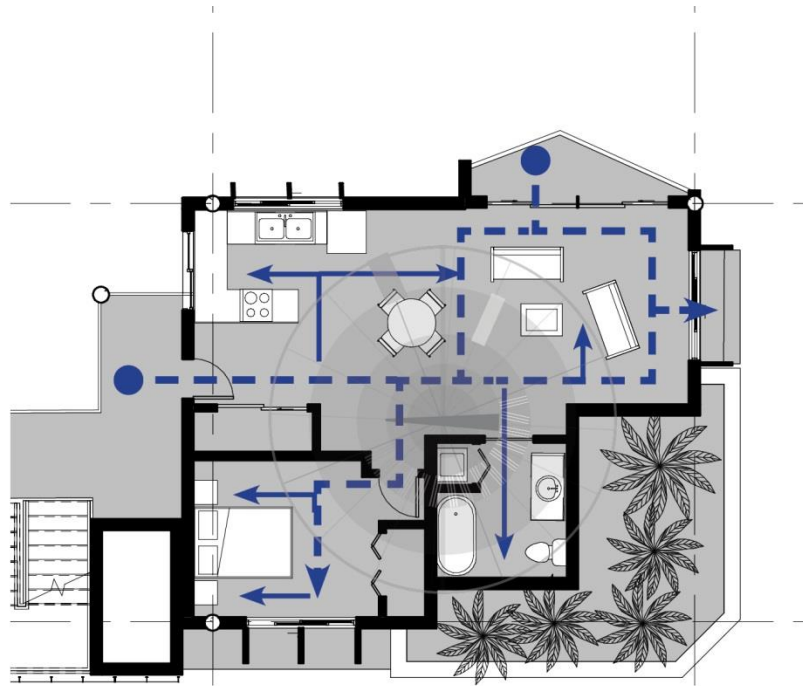


Figure 73. Unit Type C Floor Plan Analysis

With the same facing direction and similar floor plan as Unit Type B, the smaller units include landscape to block bad qi on the corner of the intersection. As mentioned before, the yellow lines in the unit show that the doors do not align with windows or the bed. Similar to Unit Type C, the principles of the kitchen ventilation and triangulation are applied. The balcony view is also oriented to avoid bad qi. Qi also flows through the unit continuously, benefiting the residents living in it (Figure 74).



- - -> Main flow between openings
- > Lighter flow into spaces

Figure 74. Unit Type C Qi Flow Analysis

6.4 Materiality and Expressions

In addition to the building form, materiality is explored to express the five elements theory of feng shui. The five elements are water, earth, wood, fire, and metal. These are laid out in accordance with direction and color (Figure 75). For instance, wood is associated with east and southeast with shades of green, and earth is associated with the center, northeast, and southwest with shades of brown and yellow.

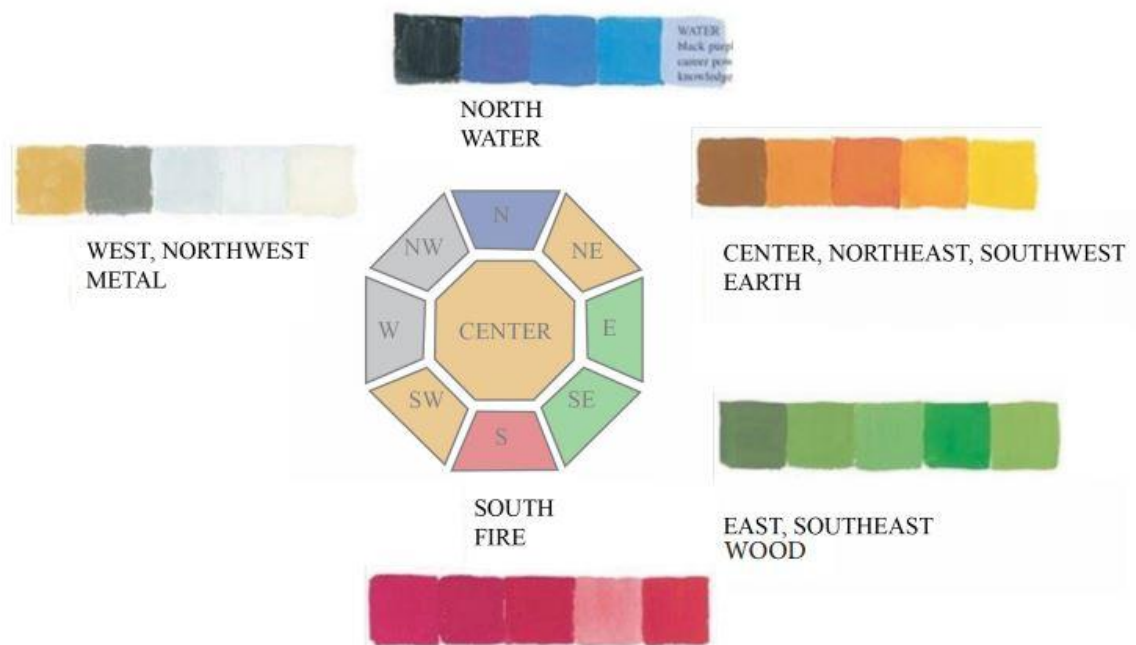


Figure 75. Materiality and Five Elements

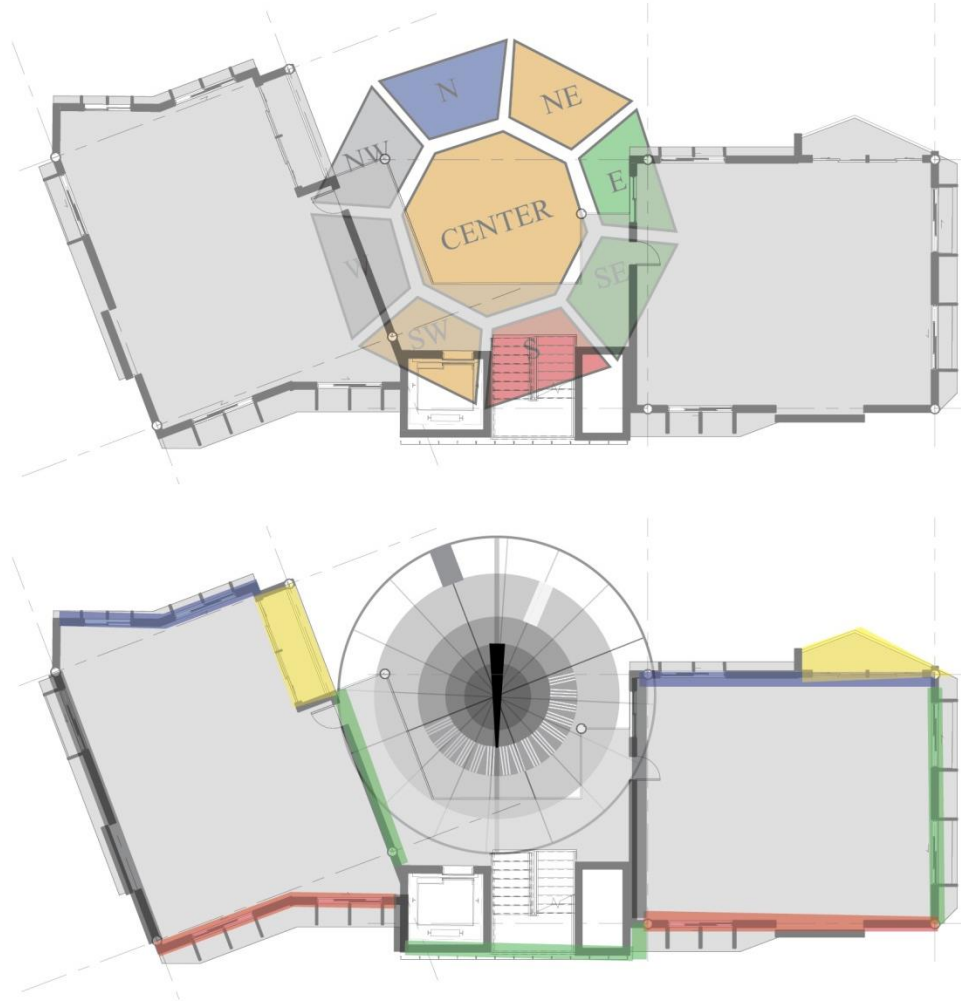


Figure 76. Compass and Five Elements Overlay

The five elements and direction tool is replaced with the project compass. Each surface of the building shell is color-coded in accordance with the associated element. On the front side is mostly “south” or fire which is shown in red. Wood is also present on the same side because wood balances out fire. On the other side is mostly “north” or water which is shown in blue. The balconies are associated with the element earth because they are oriented to the northeast wind. In addition to color, each element is also associated with material, texture, shape and feeling. Hence, a material palette is developed for the

project. The following are representations of the possible materiality and expressions.

There are three views, each with a material palette and an expressive rendering.



Figure 77. Materiality View 1



Figure 78. Expression View 1

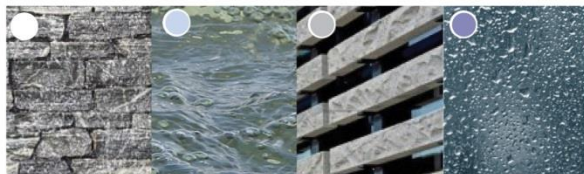
The exterior materials expressed are vertical wood slats, horizontal wood slats, and brick veneer. Materials which provide shading are aluminum fins, vertical planting, and concrete extrusions.



EAST, SOUTHEAST
 wood / green / family +
 health / grainy / vertical /
 plants / rectangle



NORTH
 water / blue, black /
 career / wavy / curving
 form



CENTER,
 NORTHEAST
 earth / brown, yellow,
 pink / education / firm /
 stone / square

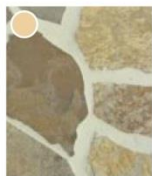


Figure 79. Materiality View 2

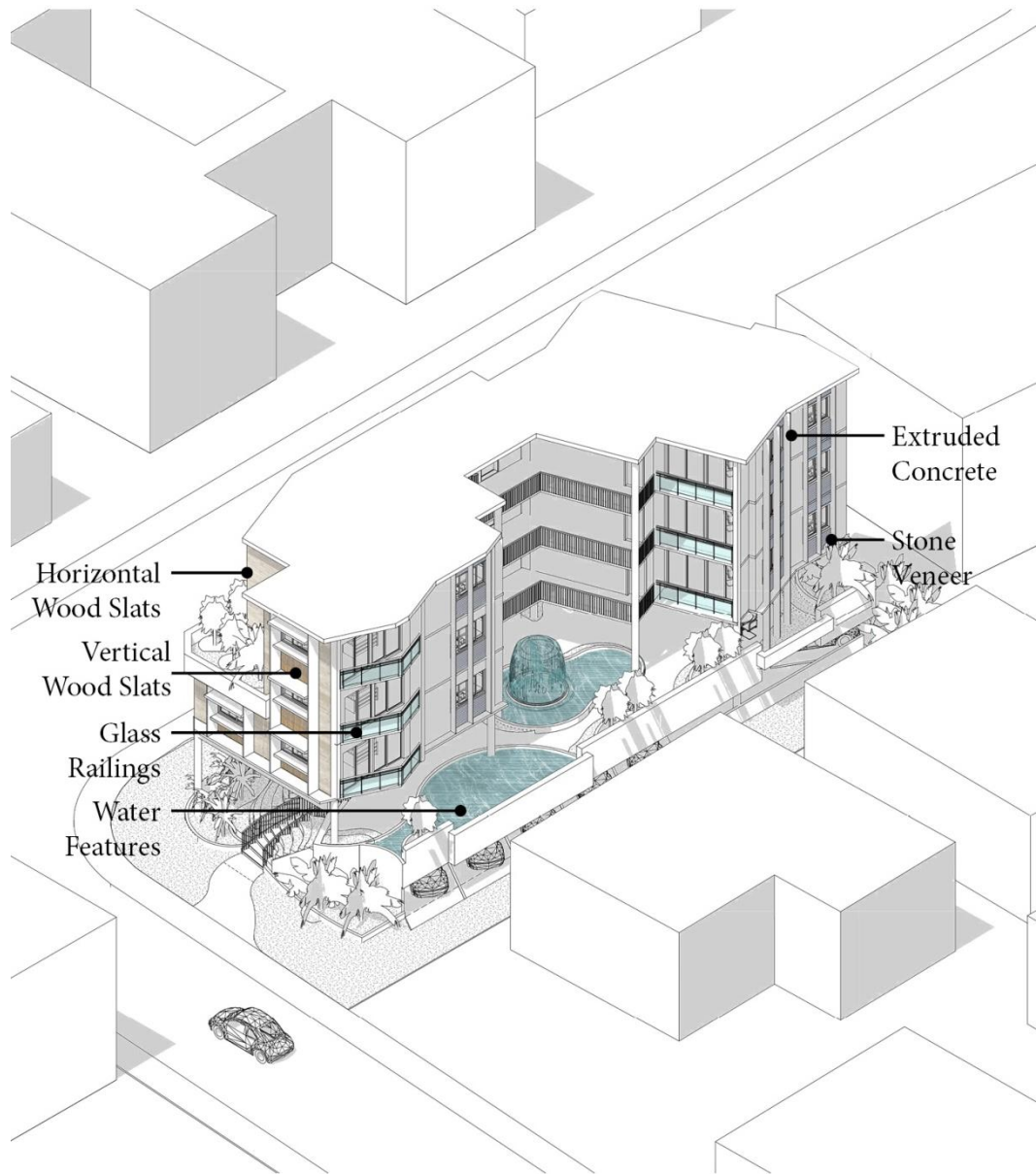


Figure 80. Expression View 2

The materials introduced here include glass railings and water features. The exterior material for this side is stone veneer along with extruded concrete for design purposes.

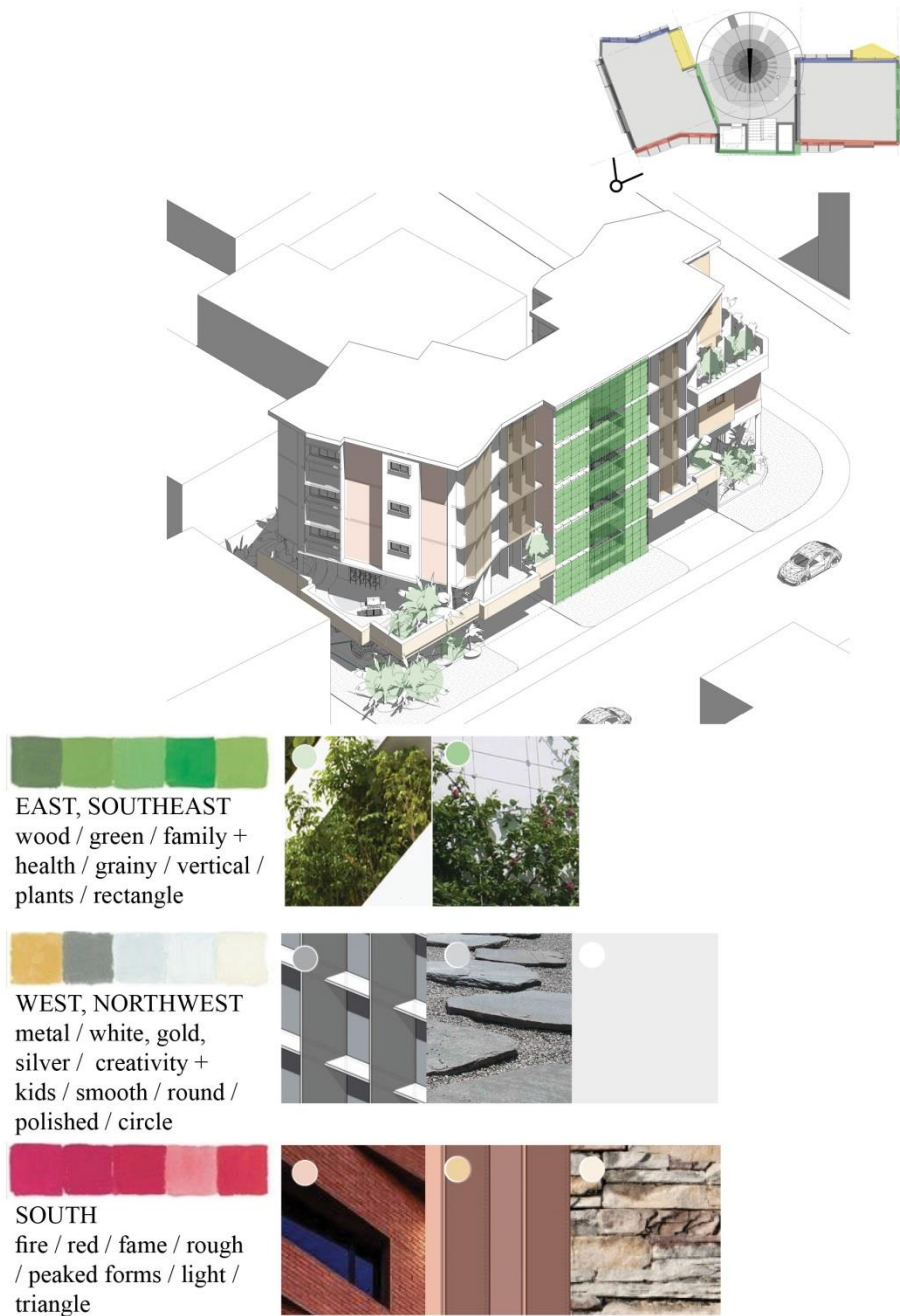


Figure 81. Materiality View 3

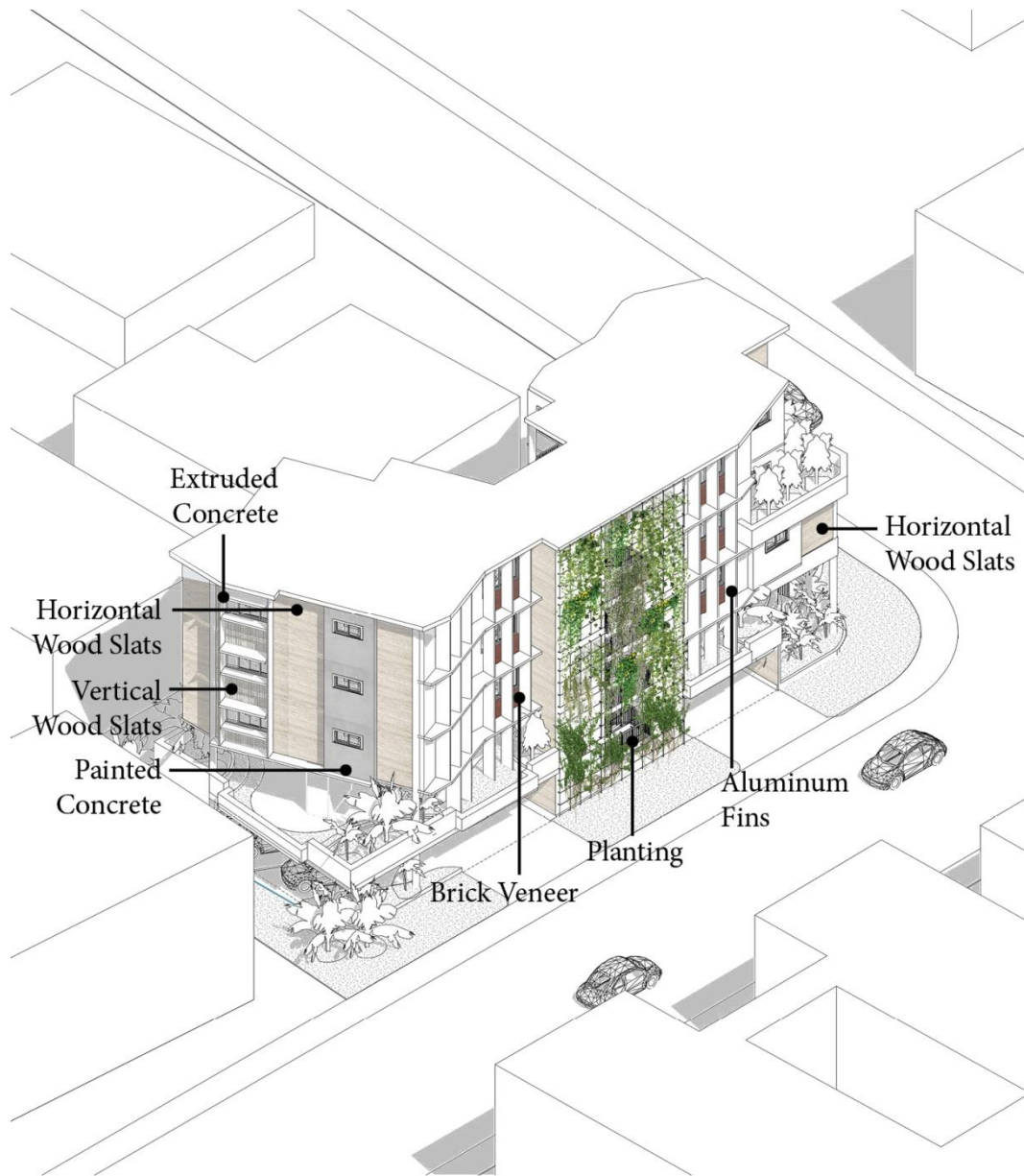


Figure 82. Expression View 3

The material introduced here is painted concrete, along with different types of wood. Again, extruded concrete is used for shading.



Figure 83. Expression View from Rycroft Street



Figure 84. Expression View from Cedar Street

6.5 Final Documentation

Final documentation includes floor plans, section, elevations, and renderings.

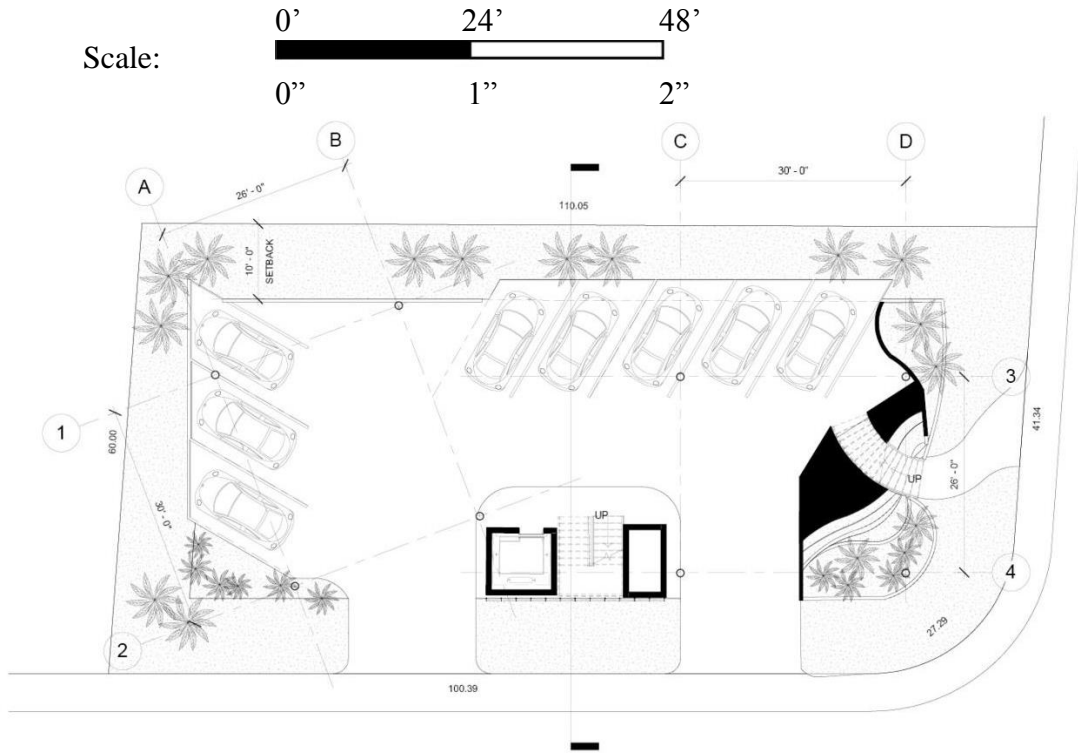


Figure 85. Level 1 Plan

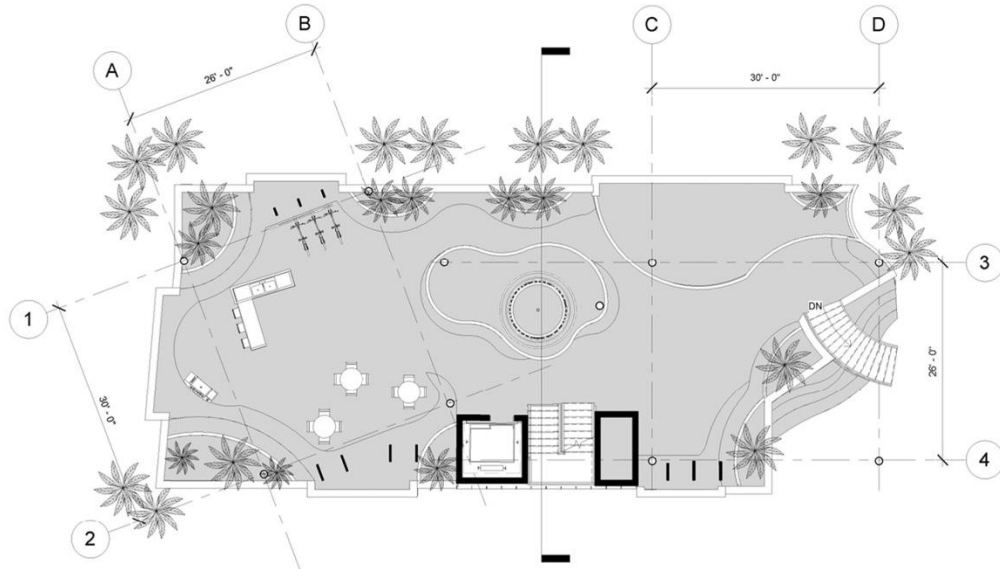


Figure 86. Level 2 Plan

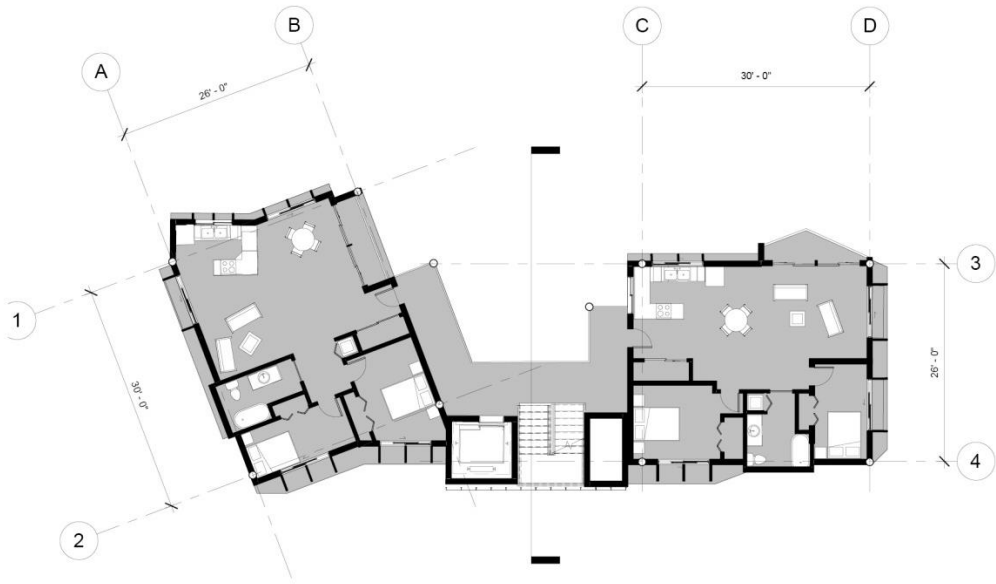


Figure 87. Level 3 Plan

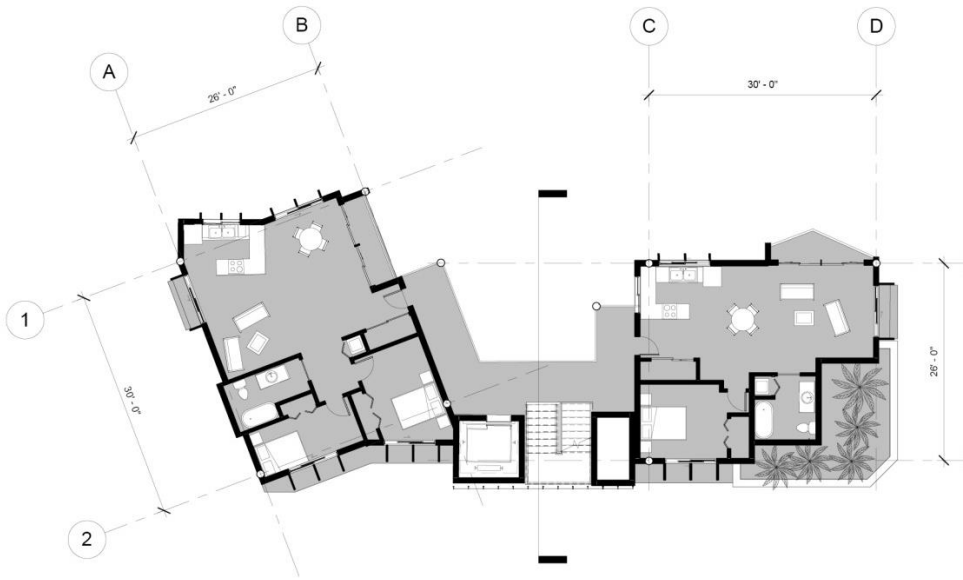


Figure 88. Level 4 Plan



Figure 89. Level 5 Plan

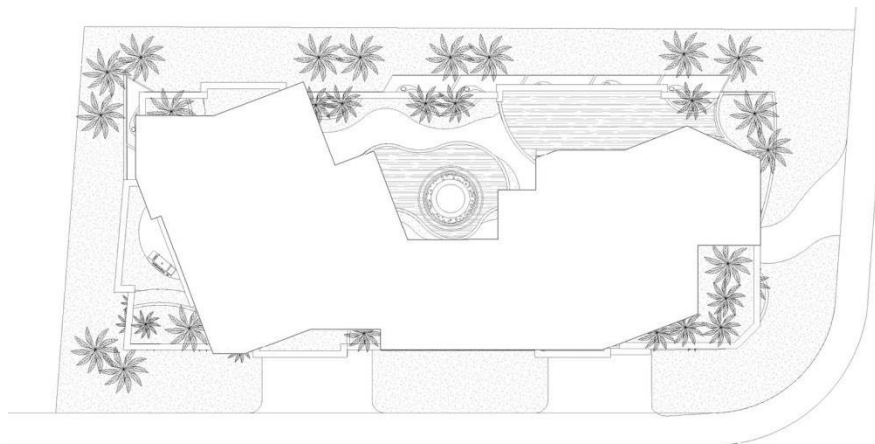


Figure 90. Site Plan

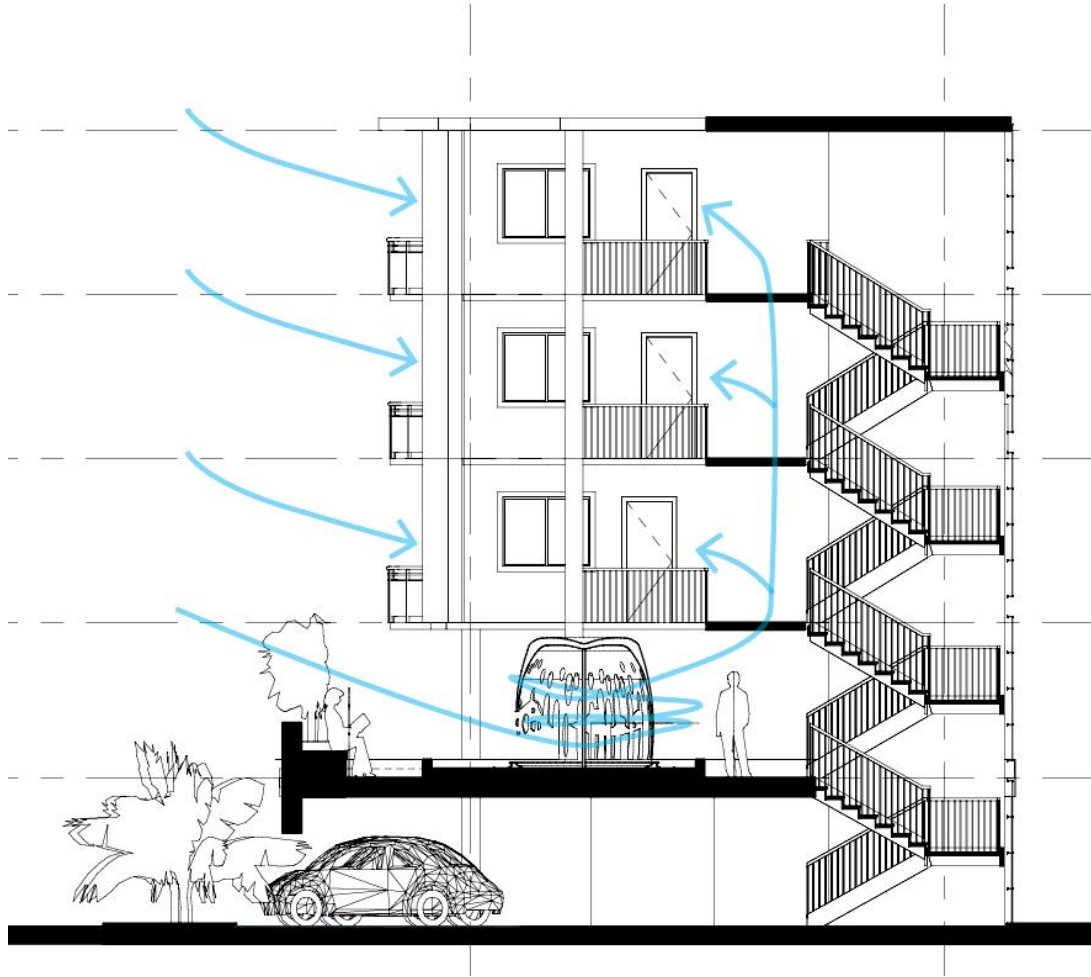


Figure 91. Diagrammatic Section

Good qi is drawn into the balcony or the “Qi Mouth” of each unit and also drawn into the podium entry where the water fountain directs qi up to the units, benefiting the entire building and all residents living in it.

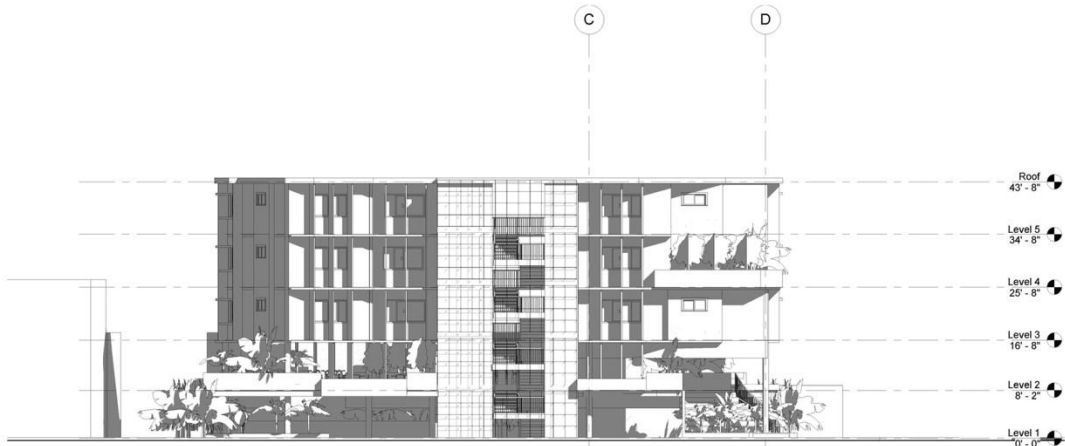


Figure 92. Front Elevation (NTS)

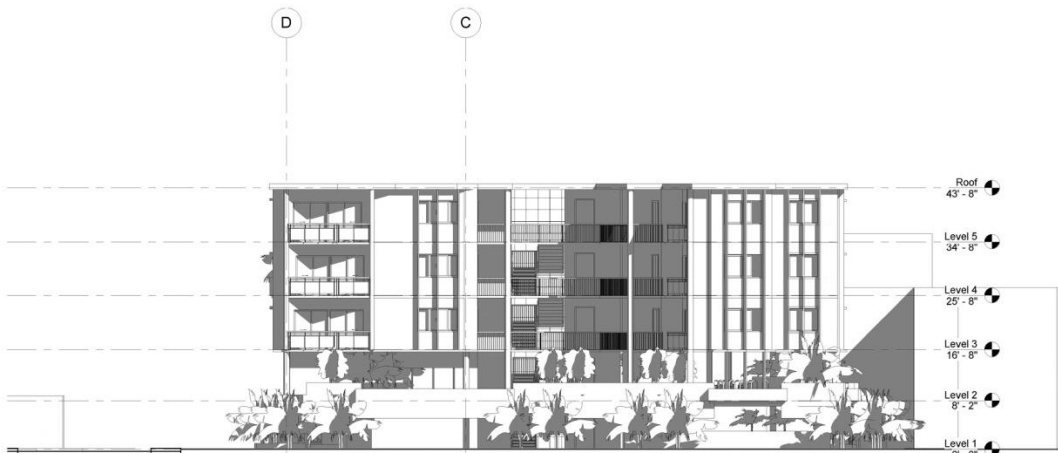


Figure 93. Back Elevation (NTS)

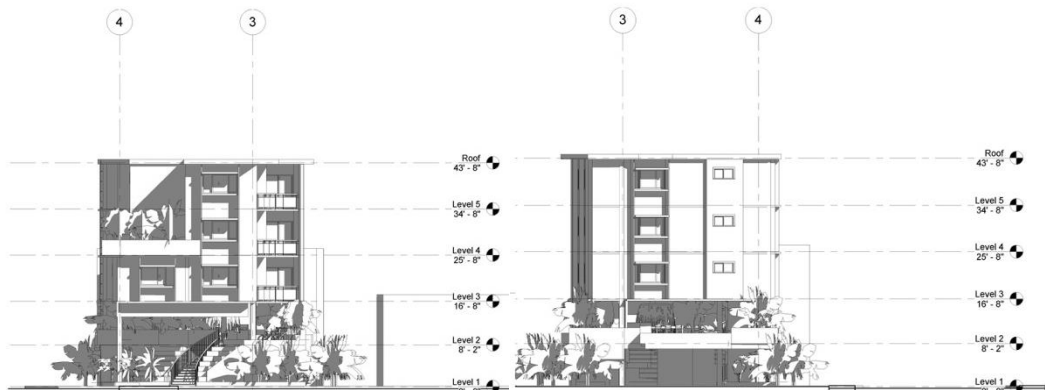


Figure 94. Left and Right Elevation (NTS)



Sidewalk View



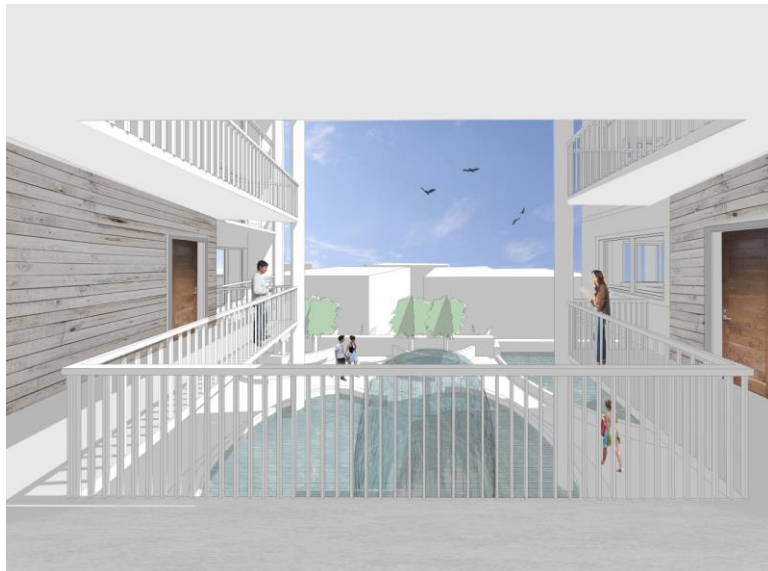
Entry View



Entering Podium View



Fountain View



Unit Floor View



Unit Type A View



Unit Type B View

Chapter 7. Conclusion

7.1 Summary

Although there is existing research on the development of urban feng shui and its growing popularity, there seems to be a missing element when considering feng shui in architectural design such as how and when feng shui can be used by the designer. In addition, an interview with a feng shui specialist in Honolulu contributed to the research indicating the important role of feng shui in multifamily residential buildings in the urban context. Hence, existing principles of feng shui from the two methods are taken further to develop design tools to address the practical application of urban feng shui to architecture. The combined design tools become part of a design guideline, demonstrated step-by-step and applied to a multifamily residential project in Honolulu.

Within the design guidelines, there are two stages: site selection and building design. In this project, the ideal site chosen is located in a developing residential area in Ala Moana. Then, building design begins with the site analysis where a program of four 2 bed/1 bath units and two 1 bed/1bath units is established. The surrounding context is analyzed through the good and bad energy of qi. The analysis is then translated to the next section; the building layout, where the core, parking, main entry and the building structure are designed to allow good qi in and keep bad qi out. This leads to the space layout where the placement of each space for the resident is considered and maximizes good qi flow. As a result, the design guidelines successfully address critical design decisions for a multifamily residential project. It recognizes urban feng shui as an

approach to design from a macro to micro scale which pays attention to cultural and environmental qualities that affect the well-being of people.

7.2 Recommendations

It is clear that feng shui plays a role in architecture. The research and tools in this project can be used by a designer or a professional architect. The design guidelines are useful when approaching a multifamily residential project. Since this project is a low-rise (six stories) project, adjustments may have to be made for a high-rise project. The different stages can also be used independently such that the designer can choose to only use the principles for site selection or only use the principles for space layout. Moreover, the design guidelines provide a platform for designers and architects to remind them the importance of cultural sensitivity and quality of living when designing for people.

This project can be taken further in several ways because the list of feng shui principles is not limited, but continuously evolves as the city and our lifestyles evolve, just like architecture. Professionals are encouraged to continue to explore this topic through client interaction and application in design projects. Additional research can be obtained by interviewing feng shui specialists, communicating with architecture firms that are known to use feng shui in their design, and studying architectural projects which promote feng shui. The design guidelines can also be adapted to other types of projects other than residential, such as commercial buildings and public parks.

This project also encourages students to be more curious and open-minded. Whether students are interested in geomancy or not, feng shui can be related to other

fields such as environmental psychology, human health, and more. This project gave an overview of the overlap of feng shui and architecture. Considerably, a third component can be introduced to take the research further. For instance, the triangulation between architecture, feng shui, and human health can produce a compelling research process for a thesis or dissertation.

7.3 Reflection

Through this process, I've encountered some difficulties. Firstly, feng shui has no right or wrong and therefore, is always up for interpretation. After careful and extensive research, I've attempted to translate the intangible concepts such as qi into design principles by intentionally relating it to a normal design process. Because feng shui concepts are relatable to architecture, the design principles make sense and can be useful. Secondly, given that this design project focuses mainly on architects and feng shui, there is less emphasis on other perspectives in the profession such as the developer and the feng shui specialist. From the developer's point of view, there may be criticism that the F.A.R can be maximized. On the other hand, the architect using urban feng shui design guidelines can argue that feng shui encourages social diversity. This is because feng shui can be both a belief system and a lifestyle that people are open to accepting. Not maximizing the F.A.R may simply encourage the diversity of activity, living spaces, and life experiences.

From the feng shui specialist's point of view, there may be criticism that the design does not follow feng shui at all. Because the design process of this project did not

involve consultation with a feng shui specialist, it is possible that the feng shui specialist or strong feng shui believers will disregard the aspect of feng shui as part of this project. Contrarily, the goal of this project was not to try to become a feng shui specialist but to attempt to fit feng shui into the design. As a result, the product is not a how-to manual for aspiring feng shui specialists, but a prototype which covers important architectural factors that align with feng shui.

The urban feng shui design process produced in this project is different from a typical design approach where factors are considered independently. For example, when looking at the orientation, sun exposure, wind, and surrounding context, a typical design approach would view each factor as its own; sun exposure would have different levels of harshness; wind would have different levels of speed. Alternatively, feng shui approach takes all those factors into consideration and translates them into the concept of qi so that all factors are viewed as either good or bad as a whole rather than independently. For instance, instead of analyzing different levels of sun exposure, sun exposure itself is translated into good qi because sun exposure is good. But, if sun exposure appears to be stronger on one side of a site than the other, it will be expressed with more good qi, which may be interpreted as too overwhelming. In addition, the good qi from sun exposure is combined with other factors such as traffic noise which is bad qi. If the goal is to avoid bad qi, then that side of the site will be manipulated accordingly. Hence, this type of analysis is all-encompassing; broad in scope but with a good coverage of architectural factors.

An advantage and disadvantage of this process may be the fact that feng shui can be controlling as it requires practice and an acquired set of principles. Although there seem to be demanding rules and restraint, I do not think the process impairs the ability to design in any way. In fact, I see feng shui as a way to inspire designers. Rather than allowing feng shui principles guide the design, I've found that feng shui provides certain outlets for creativity which ultimately inspires the designer to reinterpret their own ability to design.

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