

Architecture as an Investment in Health

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INTRODUCTION

“Architecture is a fundamental way in which all human cultures *mediate* between the individual and *nature’s utterly unbearable laws*. Vincent Scully stated this boldly at his Tau Sigma Delta Gold Medal Award speech for the 1996 ACSA annual conference in Boston. He went on to state,

“They create structures which indicate that life has some kind of meaning for human beings in the vast face of *natures indifference to us all*. And of those strategies architecture is almost the most effective. It not only *protects* and *shelters* human beings physically, but more than that psychologically, especially in giving them the sense that they can make an environment at their structure, with a meaning for them in the middle of the natural world.”

Compare this declaration with “feng shui” practitioner and author Dr. Evelyn Lip’s definition of feng shui:

“Feng Shui is the art of placing, siting and orienting a building so that the building is in harmony with everything that surrounds it, and the art of finding balance in nature and harmony in the home and working environment.¹”

These contrasting views between nature and humans are rooted in culture. Scully’s view is embedded in the western tradition which includes Greek tragedy—of which he makes several references—and the existentialism of an indifferent universe. It sees the natural environment as fundamentally entropic. In contrast, Lip’s view is rooted in eastern mysticism. It springs from a culture that sees the earth as fundamentally alive, full of spirit and unseen energies (*chi*) which, if brought into correct balance, can help the individual and society in many areas of life from health to business profits.

Despite these vast differences, the two authors and their respective cultures see architecture’s role in relation to the individual and nature similarly. Both regard architecture as a type of *mediation* device. Both imply that architecture is a

type of “environmental medicine.” Scully sees the mediation or medication as primarily protective, where the architect he says “protects and shelters the individual from nature’s ultimately unbearable laws;” just as a physician may protect a patient from infection through sterilization or from cancer through surgical extraction. Lip, on the other hand, indicates that architecture can resonate with nature; create a balance of forces as an acupuncturist does to the body when applying needles to stimulate or slow down the “life force” known as *chi*.

Both ways of mediation or medication have been written about and practiced for thousands of years. The far-east tradition has been documenting and practicing this mediation through feng shui since roughly 300 B.C. The western tradition of mediation has been writing about it since Vitruvius’s *Ten Books on Architecture*.

But western architectural theory promotes the architect more as an heroic creator rather than a humble physician. A fundamental shift in perception is needed—a shift that makes sense in an ecologically sensitive age that is beginning to see the vast impact the environment has on our well being.

This shift in perception is sorely needed in a time when the services of an architect are seen as an extra, not an integral cost. Inflation, new government codes and bank interest rates that nearly triple the original building price, exacts an economic burden on clients which makes today’s architectural services look like unnecessary decoration, and not a long term investment of individual and social health. This paper will demonstrate how three designs in Asia and the United States are seen as an investment in *health*. This translates into a kind of wealth either through profits, lifestyle or governance. The first case study, The Forbidden City in Beijing, demonstrates that the incorporation of feng shui was believed to benefit the health of a nation. In the Eurocentric tradition, two case studies: the Lovell Health House and the West Bend Mutual Insurance Company building, show that through a western view of health, a richer lifestyle results for the Lovells and greater profits result for the West Bend Mutual Insurance company.

CASE STUDIES

The Imperial Palace Complex in Beijing

In 1406 Cheng Gui was commissioned by Emperor Yong Le to build the Imperial Palace Complex in Beijing. Compositionally the complex was laid out on a north-south axis with the most important buildings oriented south. This orientation was not just a climactic response, but a reaction to the precepts laid down by the ancient pseudo-science/belief of kanyu, more commonly known as feng shui.

The documented practice of feng shui started around 300 B.C. in the West Han Dynasty where it was believed that the earth, its atmosphere and everything living had pulses of energy running through it known as *chi*. It is the task of the feng shui master to mediate *chi* in proper proportion and balance, for too little *chi* can make us weak and too much can overwhelm and kill.

As a Taoist art, feng shui has diverged into different schools of thought through the influence of Buddhism and Confucianism. Some branches are based more on earthly and psychological influences which parallel western scientific thought and common sense, while others are more mystical through the incorporation of astrology and symbols. The Forbidden City is based more on the symbolic and astrological influences. According to Dr. Lip, the Imperial palace follows the writings found in the *Lushi Chunqin*, the *Huainanzi* and the *Guanzi* which documents the importance of astrology and numerology. All three make reference to the correct timing of building in the application of kanyu. This kind of feng shui is also based on concepts of symmetry,

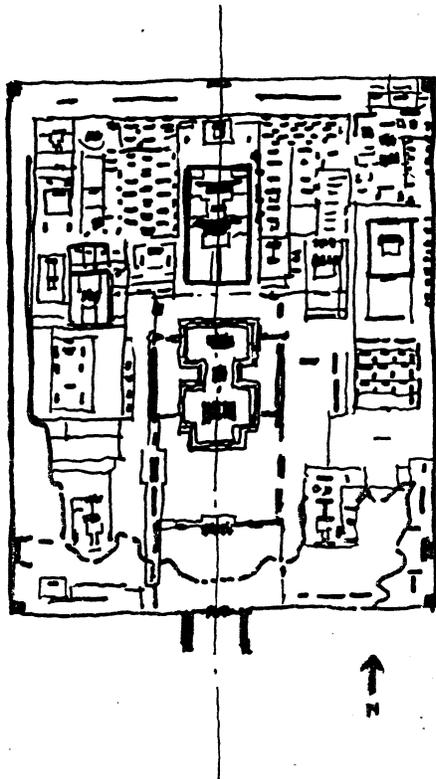


Fig. 1. The Forbidden City, Beijing.

balance, hierarchy of height, walled enclosures and orientation which explains the rigid axial order and hierarchy inherent in the complex.

The number nine plays a prominent role in the kanyu numerology of the complex which is derived from a nine square grid organization implied in the I Ching trigrams which total eight on the exterior and the open center making nine. Everything from the roof to stair steps has nine somewhere in the construction. The most ostentatious display of the number is configured in the number of palace rooms...9999.²

Since the Communist takeover of Mainland China, feng shui is no longer considered critical to the health of a nation. A former Imperial Complex guide person had little idea of the feng shui involved in its planning and considered it an "old superstition."³

Cultural Bias of the Environment's Effect on Health

In contrast to Mainland China today, the practice of feng shui in Hong Kong, Taiwan, Singapore and other Asian countries is still widely practiced. Norman Foster's Hong Kong and Shanghai Bank is just one example of where these shamans for a few thousand dollars adjusted the building's balance of energy. In another part of the city, feng shui principles were not used with I.M. Pei's Bank of China. Coincidentally, the bank has suffered a string of bad luck upon press release of the plan.⁴ Whether this luck has been due to a self-fulfilled prophecy, or the bank really does exhibit a harmful manipulation of *chi*, the country's belief in the importance of feng shui will undoubtedly prevail.

The endurance and popularity of feng shui is a testimony to how Asian cultures value the impact of the environment on their health and well being. Taoism, Shintoism, Confucianism, and Buddhism all view the environment as a living animated spiritual entity. Japan's Shinto belief alone claims 8 million "kami" spirits or gods that reside in rocks, trees, grasses, caves, rivers and mountains.⁵ The pagan religions in Europe before Christianity and Newtonian science arrived also believed in the spiritual living presence of everything in the environment. These views set up a respect and a belief that the surrounding environment can have a profound effect on an individual and society's well being. Perhaps this is why many Asian architects are held in higher esteem and compensated better than their American counterparts.⁶

In contrast, western thinking sees the environment as an inanimate, separate entity. Places are not seen to have guardian spirits or an internal life of their own. As Christian Norberg Schultz pointed out in *Genius Loci*, ancient desert landscape civilizations generally gave rise to one god or spiritual entity as opposed to hilly and vegetated landscape civilizations which gave rise to many spiritual entities and guardian place spirits. Judeo-Christian-Muslim religions started in the dry desert landscapes of the Middle East which supports little life other than that cultivated by humans. Since the Judeo-Christian-Muslim God is perceived, for the most part, as a separate entity from its creation, then the environ-

ment is also seen as having little or no spiritual presence. Scientists from Democritus to Newton, further explained the laws of God's creation which demystified and dismissed what was formerly considered spiritually alive by what little pagan presence remained in Judeo-Christian-Muslim cultures.

Despite the acceptance of the Newtonian world view, western scientific medicine had little credibility over folk remedies until the latter part of the 1800's. However, modern medicine's credibility jumped with Louis Pasteur's discovery of the harmful effects of bacteria, combined with Joseph Lister's promotion campaign of surgical sterilization techniques. Because of these two men's accomplishments in *protective medicine*, our life span has nearly doubled. Before the turn of the century, hospitals were seen as a place to die; operations were seldom successful and often hastened death. Through protective sterilization, western medicine could be seen as a legitimate science of recovery instead of death.

As a result, the elimination of germs became a prime concern in hospital design. Clean air and sunlight were discovered as two environmental substances that aided in the counterattack on germs. The relation of clean air's effect on health has been documented since Hippocrates and further elaborated in Vitruvius's *10 Books on Architecture*. At the turn of the century, sunshine was also discovered to kill harmful germs and aid the body in the production of vitamin D.

Just before the turn of the century, Southern California became a mecca for health seekers who sought relief from the cold damp winters and hot humid summers of the eastern half of the United States. Cold winters force people to live mostly indoors so fresh air and sunshine is compromised. In contrast, Southern California has plenty of both. Fresh air is plentiful in houses that can open up and allow the salubrious climate of Southern California inside. Additionally, the desert climate allowed many days of sunshine.

Lovell Health House

In the 1920's Dr. Lovell, a physician who popularized the importance of light and air in environmental planning through his weekly *LA Times* column called "Care and the Body," had a captive California audience. He endorsed the importance of fresh air and light and allowed R. M. Schindler to write two "Care of the Body" articles in the spring of 1926.⁷ Dr. Lovell later incorporated the principles of light and ventilation in his "Health Home" in Hollywood. To the disappointment of Schindler, Richard Neutra designed Dr. Lovell's most publicized home which utilized the health benefits of germ killing light and air to a state of the art. Large two story spaces with sizable south-facing windows allowed in plenty of sun while operable windows were strategically placed to allow for maximum ventilation and air change. Additionally, harmful microbes came under attack from the use of germ inhibiting ceramic tile on the floors and walls of both bathrooms and kitchen. Wall mounted toilets and fixtures allowed for more thorough

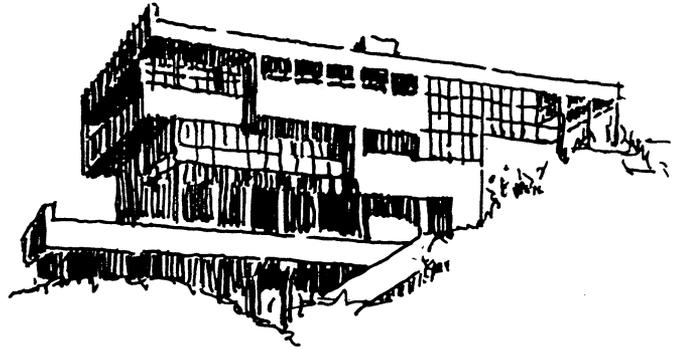


Fig. 2. The Lovell Health House, Hollywood, CA.

sanitizing through efficient mopping and sponge cleaning.⁸

No statistical studies have been made of the home's health benefits on the Lovell's or subsequent owners, but numerical statistics do exist on the next case study.

West Bend Mutual Insurance Company Headquarters

In the late 80's, the West Bend Mutual Insurance Company's leadership planned their new headquarters building near Milwaukee with the expressed aim to advance the health and welfare of the workers. This, they surmised, would increase company profits.

Air quality, thermal comfort, lighting and noise control is an integral part of their goal. Air quality is assured through the building's unique HVAC system that cleans the air more thoroughly than conventional systems. The conventional practice of placing air supply and returns both at the ceiling, short circuits the air exchange by keeping clean air at the ceiling which allows exhaled carbon dioxide to stay down at the work level longer. This contributes to fatigue. West Bend's supply vents delivers clean air at the desk, where it is needed most, through a system known as "Personal Environment Module" (PEM). Exhausted air is then safely returned to the ceiling.

In addition to air quality control, the "Personal Environment Module" assures workers control over their own thermal comfort, light and noise levels. This individualized control of the environment demonstrates Vincent Scully's existentialist notion of architecture's ability to give us "a sense that we can make an environment at our own structure."⁹ This individual control is accomplished through: 1. the speed and direction of the air through two air diffuser modules at desk level, 2. radiant heat panel located in the floor, 3. desk mounted task light and 4. a sound masking device.¹⁰

Rensselaer's Center For Architecture Research conducted a 51 week study on the impact of the Personal Environments Module on worker productivity. The report, entitled *Rensselaer's West Bend Mutual Study: Using Advanced Office Technology to Increase Productivity*, found the following results.

1. The combined effect of the new building and Personal

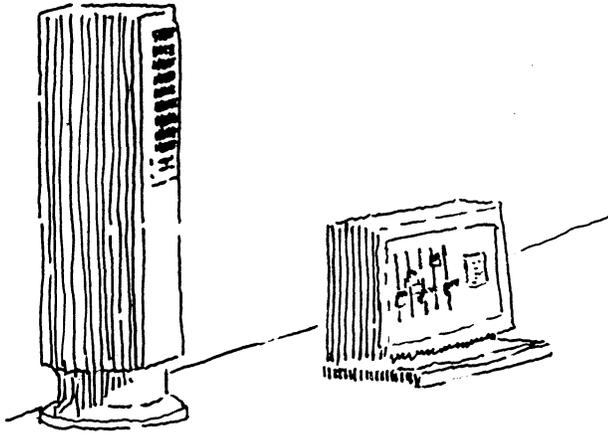


Fig. 3. Air supply and control panel for the Personal Environment Module.

Environmental Modules, produced a statistically significant median increase in productivity of approximately 16 percent over that of the old building.

2. Personal Environment Modules alone were responsible for an increase in productivity of about 2.8 percent relative to productivity levels in the old building. However, West Bend's Senior Vice President Ron Laurel stated that "by our results, productivity went up from four to six percent, and with a payroll of over \$10 million a year, that's a substantial return on investment."¹¹

CONCLUSION

As the world becomes smaller through modern travel and communications, eastern and western ways of thinking inevitably intermingle. This means that our western view of the environment and health is likely to absorb more of eastern culture. Eastern medical techniques, like acupuncture, are already beginning to be recognized by the West's medical establishment as a viable alternative. As a result, health insurance companies are now paying for acupuncture treatments. Even the elusive energy source known as *chi*, which is supposedly manipulated by acupuncturists and feng shui practitioners, is seen by some quantum physicists to curiously resemble the subatomic behaviors found in the *quantum field*.¹² Feng shui is making a large impact in California with: feng shui books commanding a separate section in popular bookstores, schools of feng shui taking root, interior designers who advertise the practice, and retail distribution with projected sales of feng shui

items totaling half a million in sales a year.¹³

As western science and eastern metaphysics begin to accept, and at times resemble one another, perhaps the American public's value of the environment on its health and well-being will increase. If architects can be seen more as physicians who can credibly shield from nature's harm, yet tap into and harness nature's healthy energy sources, then we can look forward to a higher degree of respect from the public. Our services will then have an added value and respect that Asian architects now command and physicians in the West already possess.

NOTES

- ¹ Lip, Evelyn, *Feng Shui, Environments of Power, A Study of Chinese Architecture*. (London 1995, Academy Group LTD London), p. 61.
- ² Ibid. pp. 61 - 75.
- ³ Conversation with Ni Li, an Imperial Palace guide who gave English tours in the mid 80's.
- ⁴ Chua-Eoan, Howard G. "How to Keep The Dragons Happy, The Chinese Art of Feng Shui Can Ensure A Prosperous Building." (Time Magazine, June 22, 1987), V. 129 p. 44(1).
- ⁵ Matsubaashi, Kazuo, "Spirit of Place, The Modern Relevance of an Ancient Concept" from *The Power of Place*, Swan, James Editor. (Wheaton, IL, Quest Books, 1991), p. 335.
- ⁶ Interview with Ralph Roesling, AIA of Roesling Nakamura Architects in San Diego. The firm has worked on several projects in Japan and has two partners who are Japanese Americans.
- ⁷ Schindler, R. M., Dr. Lovell, Philip, Editor. "Care of the Body." 14 March and 11 April 1926, Los Angeles Times.
- ⁸ Trade magazine article clipping found in the Neutra Archives, Box # 194, University of California, Los Angeles.
- ⁹ Vincent Scully, Sigma Tau Epsilon award speech at the ACSA Boston Conference.
- ¹⁰ Kroner, Walter and Stark-Martin, Jean Anne, *Rensselaer's West Bend Mutual Study*, (Troy, New York, 1992, Center for Architecture Research, Rensselaer Polytechnique), p. 5.
- ¹¹ Ibid. p. 53.
- ¹² University of California at Berkeley, research physicist Fritjof Capra finds parallels in quantum physics and eastern mysticism in his book *The Tao of Physics*. In it he writes: "The word *chi* literally means gas or ether used to denote the vital breath or energy animating the cosmos. Chi bears the most striking resemblance to the concept of the *quantum field* in modern physics.Like the *quantum field*, *chi* is conceived as a tenuous and non-perceptible form of matter which is present throughout space and can condense into solid material objects.....From the words of Chinese sage Chang Tsai, when *chi* condenses, its visibility becomes apparent, so there are then the shapes (or individual things.)" Capra, Fritjof, *The Tao of Physics*, (Boulder, Colorado, 1975, Shambala), pp. 213 - 14.
- ¹³ Interview with Sheree J. Deneen, Vice President of the Feng Shui Warehouse in San Diego, California.