

CREATIVE COMPONENT
ACCESSIBLE DESIGN AND TRADITIONAL CHINESE
ARCHITECTURE IN TAIWAN

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INTRODUCTION

The military academy, West Point, has "Duty, Honor, and Country" as the motto for their cadets. The military academies of Taiwan, Republic of China, have the same motto but we have a different priority. We put "Country" first then "Principles, Leaderships, Honor and Duty". I graduated from the Chinese Air Force Technical School, and I retired at the rank of major in 1980. Although I am retired, the motto has been immersed in my mind and it has been branded in my heart. Therefore, before I do anything, I will think of my country first; is it good for Her?

My country was a poor, small country. Before 1949, it had nothing, but in last thirty years, with the government and the people working hard together, today we have widespread prosperity. The country has more than \$700 billion dollars in foreign exchange reserves; in all the world, my country has foreign exchange reserves second only to Japan.

Six years ago, before I went abroad to study, I told myself that I needed to learn something new and useful for my country as well as to learn something interesting for myself to bring back to serve my country. Going back to my country to do my internship this summer is the second step in performing my oath to serve my country. I knew my country had no program for the studying of interior design so I got to know that field of study so

that I could serve my country. Some questions I asked myself were "What should I learn before I go back to Taiwan?" "What are the real needs of my country?" These are the reasons I went back to Taiwan to do my internship. I knew that doing my internship there was not as convenient as doing my internship here. The living conditions, studying conditions, and getting information are more difficult than the conditions here. Furthermore, there is no summer school. Therefore, it was very hard for me to contact some professors. I had no car, no computer, no typewriter, not enough money, etc., in Taiwan in this summer. But I had my motto, my oath, my confidence, my friends, my relatives, and my teachers' help and encouragement; I overcame the difficulties.

On May 9th I started the twelve weeks internship and I finished it on August 1st. The goals of this internship included understanding how to use accessible designs for the handicapped in my country, observing Chinese traditional buildings, and practicing interior design work. During the summer, I was worried about having too many things to do to finish my work. Therefore, I worked more than eight hours everyday and on the weekends. I went to the exhibitions to see, and to presentations to listen. I went to the libraries to study the constitution, the social welfare laws, the child educational laws, the senior citizen welfare laws, the

Taipei city traffic laws, the architectural laws and the welfare laws for handicapped people. I checked and measured the facilities for the handicapped in some national buildings, the newest career training center for the handicapped, the schools, the deluxe tourist hotels, and the underground side walks in the capital city, Taipei and in the second largest city, Koushiung. Also, I went to see the famous traditional buildings in Taipei, Touyuan, and Koushiung to take many pictures and slides. I interviewed the government officers and professors, and I attended the meetings for revising the welfare laws for handicapped people. I wrote many papers advocating the concept and the importance of accessible design. At least three were published in The Independence Evening Post and The China Post, the nationwide newspaper.

I stayed in a small room in Taipei with no air conditioning, in summer temperatures of more than one hundred degrees Fahrenheit. I took the least expensive bus to go to the south of Taiwan. I drove a motorcycle in Koushiung and I took city buses and walked in Taipei to see, to ask, to write, to interview, to take pictures, and to find my information. After eight weeks, I was almost finished with the first two items of my summer work. My supervisor, Mr. Wang asked me to join his company to practice the interior design work and to design a commodious apartment on the Zen-i road, the

highest class residential area in Taipei. I worked on the project with Mr. Ling, an employee of Mr. Wang's company. I learned the way they do a project. During the night I learned perspective drawing at Wang's private school and I taught English at an adult school in Taipei to earn my expenses.

It had been six years since I had gone to the U.S. and left my parents. But due to the limited time and hard work of the internship in Taiwan, I visited my parents only twice in the three months I was there. As an excuse to comfort myself, I told myself that I would spend more time with my parents after I finish my degree at the end of the year. And I told myself now, they are doing very well staying with my brother. My parents understood that I had important work to do and they supported me and encouraged me to do well in my work.

The work of my internship, was to see the accessible designs in my country, and to research the traditional Chinese buildings. During the time I took Dr. Brewer's classes, "Housing for Special Groups" and "Housing in Other Cultures" I found my interest, and Dr. Brewer indicated my study direction and encouraged me to do this internship in my country. Practicing interior design work in my country was the best opportunity to find out about the interior design situation there. Also, it was the only opportunity to know what they need and what I need to learn about interior design.

In accomplishing this internship, I would like to thank my country, my parents, my teachers, my wife, my relatives, and my friends; they love me, teach me, encourage me, and help me. Without their help I believe I could not have finished the internship.

AN OBSERVER'S REPORT OF ACCESSIBLE DESIGN IN TAIWAN

Introduction

A sense of equality and righteousness is supported by the majority of the society in Taiwan, Republic of China. The people are offended by the so-called "Ugly Law" which is what they call the lack of resources and accessibility for the handicapped. This "Ugly Law" prevents them from participating fully in society. Twenty years ago the handicapped were called "different from the normal" as an excuse to use the "Ugly Law" to exploit their basic human rights. In 1980, my country passed a special law, The Welfare Law for Handicapped People, to protect and to benefit them.

This paper explores my research and interview work about the current situation of accessible design and offers suggestions about accessible design at school, work places, family homes, community centers and transportation in my country. Meanwhile I compared these facilities in Taiwan with the codes of ANSI A117.1-1986 (American National Standards Institute) for buildings and facilities for physically handicapped people. This paper also presents my critiques, analyses and suggestions about the welfare law and some activities for the handicapped in my country.

The social construction has changed from agriculture to industry and the family construction has changed form

extended to unclear in Taiwan. Before if a family had a handicapped child, the family thought that was God's intention and punishment. Some families thought having a handicapped child was shameful and their punishment for a past incarnation, therefore the child was deserted or kept in darkness. However this situation has changed as society changed. The handicapped have almost the same opportunity to live and to get an education in my country now.

The Current Situation of Accessible Design in Schools

The Chinese believe that learning is the noblest of human pursuits. Educational opportunity is every citizen's basic right; it does not belong to certain privileged minorities anymore. Article 159 of The Constitution of the Republic of China states that people have equal educational opportunity. Also the first Article of the Education for All Handicapped Children Act, my country proclaimed that all handicapped children should be given proper educational opportunity in order to develop their talents, to cultivate their healthy personality and to increase their abilities and opportunities to serve the country.

In Taiwan, there are several special public and private schools for the hearing and visually impaired children. The children can study free from the elementary level to the senior high level free at the public schools, or they can be subsidized by the government at private schools. According to the Department of Education, there are 36 colleges (four year colleges) in this country, but only 3 colleges have the teaching facilities to help blind and deaf students. An educational officer told me that almost no schools in my country have accessible design.

Most colleges practice the "Ugly Law". The wheelchair restrained students cannot take certain classes because the schools have no accessible design in some buildings. Some colleges, frankly speaking, do not like handicapped

students to attend the schools because the schools have no accessible design. Although in Article 22 of The Welfare Law for Handicapped People stated that all government-financed buildings must have accessible design, there are no details mentioned about what kind of accessible design facilities should be built. It does not mention what kind of design there should be or how many accessible facilities should be offered, or what kind of architectural standard or code should be followed. Article 22 can only be explained as a sign that the government and the people are beginning to pay attention now to accessible design for the handicapped.

It was almost thirty years ago, but I still can remember the newspapers that reported and praised the stories of a mother or a father who carried their handicapped child on their back to go to school everyday. And of how a good neighbor child or classmate had carried a handicapped friend by bicycle to go to school and had helped the handicapped student to go to the restroom for several years at school. Every time after I finished reading the reports I respected the parents and admired the friendship of those students. But it is a sad story to me and to everybody now, because the people know that the government and the society have the responsibility to provide a barrier-free environment to the people. Also the people know that all schools should provide an accessible environment and the people know that everybody

should have an equal opportunity to go to school. Due to the laws that have not been instituted perfectly and due to the fact that my government has not practiced the laws seriously a grand rally and protest was held by the handicapped people last December in the capital city in order to arouse the public to pay more attention to accessible design and to their basic human rights.

At most colleges I visited last summer, I found no curb cut outside the schools and no ramps outside most buildings. I found some class doors were not wide enough and the doors too heavy to open by a wheelchair-restrained person. The rest rooms and elevators had neither enough turning space for wheelchairs nor braille for the blind. There were no parking spaces reserved for the handicapped, no handicapped signs or braille on the residence halls and other buildings. Simply speaking, there were no accessible designs in most colleges.

Suggestions for Accessible Design in Schools

Evidently, the Welfare Laws for Handicapped People were instituted too loose and too late, but it is better than nothing. I suggest that to revise the welfare laws and to add accessible design codes in the architectural laws and traffic laws, the schools should institute these changes:

1. All the buildings must have at least one accessible entrance.
2. The doors must have a clear opening of at least 32 in., and the weight required to open a door should be 5 lb but not exceeding 8 lb.
3. Floors must have nonslip surfaces.
4. The elevator size must allow for a 180 degree movement of a wheelchair.
5. Elevators' call buttons should be centered at 42 in. above the floor. A visible and audible signal indicating direction of travel should be required.
6. Primary corridors should allow for the passage of two wheelchairs side by side.
7. Each floor of a building should have at least one toilet facility available to physically disabled people of each sex.
8. The toilet stall must contain a clearance of at least 60" x 60" for wheelchair turning and the stall should have with a outswing doors.
9. At least one lavatory shall be wall mounted with a 29

in. minimum clearance underneath the apron of the fixture to provide wheelchair approach.

Above are the accessible design suggestions at schools (ANSI, 1986).

The Current Situation of Accessible Design at the Work Place

The Chinese believe that learning is the noblest human pursuit, therefore a college graduated or job trained handicapped student has a better opportunity to find a job than a handicapped person without training. The job opportunity of a handicapped person is dependant on the educational opportunities or job training opportunities; therefor, accessible design of school buildings decides the future of handicapped people. Because there is no accessible design in the schools, there is no educational opportunity for handicapped people and they have no future in the jobmarket.

Article 125 of the Constitution of The Republic of China prescribed that the country should provide working opportunity for people who have working capability. According to Article 14 of the Welfare Laws for Handicapped People, the social affairs bureau of the local government bears the responsibility to provide training and working opportunity for handicapped people. Article 18 say that the able-bodied cannot be employed in the massage work, and Article 19 says the handicapped have the highest priority to become venders or to open grocery stores in supermarkets or shopping malls. All the local governments pay expenses for handicapped people's job training, and local governments provide loans for the handicapped opening businesses. Above are

the related articles of job training laws and protective activities for the handicapped in this country. Article 17 of the Welfare Laws for Handicapped People also specifies that any public or private organization should be rewarded by the government for hiring the handicapped at more than three percent of their total employees. This article is not rigidly practiced by most companies. To me the article appears to be encouraged and praised, but in reality not carried out.

Suggestions for Accessible Design at the Work Place

According to the information of the Social Affairs Bureau in Taiwan province, there were 300 physically handicapped people who finished job training. Of these, 156 got jobs, and 35 opened their own businesses in 1984. The percentage who got was low. The reasons are the following:

1. The law for helping the handicapped to find a job is not effective.
2. There is no accessible design in most companies and there is no rule specifying the subsidizing of accessible design in company buildings.
3. Most employers do not like to employ the handicapped because of their perceived low working efficiency.
4. The modern production technology reduces the man power need.

The suggestions:

1. Revise the Welfare Laws for Handicapped People in the following ways: create a fair minimum hiring percentage of handicapped people as a percentage of the total employees in a company; specify that the minimum salary of the handicapped be equal to the minimum wage of the able-bodied; exempt the taxes on all imported facilities for creating accessible designs; prevent discrimination against handicapped people; give a subsidy to the employer who adds accessible design and facilities; and add to the

articles a clear citation of the rewards for hiring more than the required number of handicapped employees and the punishment for hiring fewer than the required number of handicapped employees in a company.

2. Create an organization to collect job placement information for handicapped people.
3. Add more job training centers and job placement information centers.
4. Add accessible design standards to the traffic laws and the architectural laws.
5. Encourage and reward public and private building owners for considering the needs of the handicapped people.
6. Ask the handicapped people's opinions before making any decisions which relate to the welfare of handicapped people.
7. Advocate the need and importance of accessible design.
8. Encourage society to give handicapped people more working opportunities.
9. Add more funds to the budget for handicapped welfare.
In 1987 there was 3,800 million yen allocated for handicapped welfare; that is about 0.04% of the total budget of 7,782 billion. To compare with our neighbor, Japan, the budget for handicapped welfare was more than 2,000 billion yen in any single year

between 1981 and 1987.

10. Add more job training areas for the blind, deaf and mentally retarded in the job training centers.

The above are a listing from my research and suggestions for job training and job placement for the handicapped people. All the suggestions will require a lot of money in order to be implemented. When I spoke with a social welfare officer and we both agreed the investment is worthy because it helps the handicapped people to acquire job skills and independent living capability. This investment would also release the burdens of their support from the families, the society and the country forever. It is a reasonable investment. From the point of view of humanitarianism, the handicapped possess the basic human rights to live, to work, and to get an education. Thus, to subsidize the handicapped person's basic living requirements, to provide them with working opportunities, and to acquire educational opportunities for them is the responsibility of the society and the country. I hope that in the near future the handicapped can acquire their basic rights-to study, to work and to live in a barrier-free environment and to enjoy an equal and happy life in my country.

The Current Situation of Accessible Design in the Family Home

Man is a social creature. The most intimate group of man are family and community, because the basic human needs such as food, shelter, emotional and physical comfort can be found at home. Meanwhile the facilities which meet modern man requirements, such as schools, hospitals, churches, theaters, groceries, parks and public facilities are found in the community. How do we design the facilities in family and community buildings for the special populations (the elderly and handicapped)? The most important consideration is when a designer plans to build an environment is that, as Thomas M. Payette, FAIA, said, "the environment there should be no different than the environment we try to create for anybody-in an institution or not. The issues are openness, friendliness and delight." (Nesmith, 1987, p. 60)

The government of Taiwan has advocated and encouraged the people that three generations (grandparents, parents, and children) should live together as a family. The ideal to be hoped for is to preserve the traditional spirit, to maintain family relationships and to reduce the burden on the government budget. According to Lynn Nesmith, an elderly welfare advocate, the handicapped and elderly are grouped into one name-special populations- because the elderly will have the same problems as the

handicapped have, such as lost hearing ability, decreased visual power and mobile impairment. Thus, all the accessible facilities and designs in communities and public buildings for handicapped also can be used by the elderly. The government of Taiwan should remind the families that this special population has need of accessible design in the homes when the ideal of three generations living together is encouraged. Otherwise, the ideal of three generations living together will become a burden, and an inconvenience for the families. The inconvenience will be compounded by taking care of the elderly without accessible design in homes and in the community.

In my country, the apartment is the typical living environment, even in the suburbs. Most apartments have four or five floors in the buildings, and most apartments have no elevator. There is one public door and stairway leading into the building. The Chinese believe that a family with many generations and many members-especially boys or men-was an auspicious family. Also the Chinese have a traditional family concept that to take care of old parents is the responsibility of the elder son or sons. Today, people still cannot accept the concept of letting their parents live in nursing homes or senior citizen centers. Putting parents in a nursing home is considered the same as deserting parents in our society. Therefore in our society most elderly live together with

their family.

It is a fact in my country that people are living longer then before. According to the Office of Accounting and Statistics of Taiwan, 15% of the population will be over 65 in 1990. Also this office estimates that 11% of the population will have sensory or mobility impairments. If those with temporary handicaps are counted, the numbers skyrocket. Since most people will be disabled at some point in their lives-by disease, accident, or old age-accessible design applies to everyone; accessible design is not for the special population only. It could be an "entire life span" design, because we are only able-bodied for a certain portion of our lives.

Due to the traditional family concept and the actual number of elderly and handicapped people in our society, we cannot ignore the real requirements of accessible design in the community and at home. Therefore a barrier-free community and an accessible housing design are urgently required in our society to cope with the traditional extended-family concept and the increased number of older citizens.

Suggestions for Accessible Design in the Family Home

People living with the elderly should consider the housing design and the user needs. These include adjustable countertops and storage facilities, wider doorways and corridors, protected building entrances, well-lit ramps and walkways and the like. The following are some tips for making accessible design in a small home, like an apartment, more manageable:

1. Interior space should be direct, level, flat and uncluttered. Give attention to the relationship of spaces to the functions they serve. For example, it is better to place the dining table near or in the kitchen. Towels should be stored near the bathroom. Laundry facilities, ideally, should be near the bedroom where clothes and liners are stored and changed.
2. Because visual losses often accompany aging, clear color definition can be very helpful. Chairs should contrast with floors so the elderly can readily see them. Likewise, doors should contrast with surrounding walls.
3. Shades of red, yellow and orange are more easily perceived and tend to promote cheerfulness and stimulate activity; while they also project feelings of heat and can cause agitation in some people, they still can be used effectively as accents in a predominantly cool color environment.

4. Monochromatic schemes are not advised for the elderly.

While it is true that such schemes tend to "enlarge" small spaces visually, one color throughout can be boring, lead to sensory deprivation and, most important, fail to define areas.

5. Great care must be taken to provide adequate lighting. Without light, there is no color.
6. Texture and pattern will denote change in objects and areas by providing tactile and visual definition. A person who has difficulty in distinguishing objects and defining edges, for example, will be able to identify a favorite chair by the feel of the fabric, or know by the texture of the walls when an area ends.
7. Raising electrical outlets from 12 inches to 18 inches, front-mounted stove and range controls, leg room under sinks, grab bats placed where needed.
8. Some furniture details that make life easier for the elderly include hard-edged sofas and chairs; it is difficult to rise from those with soft edges. The best seating is firm with fairly straight backs about 18 inches from the floor and with fabrics that have been treated for stain-prevention or are washable.
9. The corners of tables and shelves should be rounded to avoid painful bruises.
10. Door handles should be about 36 inches high,

preferably the easily manipulated lever type (Altman, 1987).

The three generations living together is the ideal in my society and complies with the traditional cultural spirit and meets the requirements of the modern Chinese family. Because in most families, both parents are working outside in the day time, the elderly can take care of the children and the parents can take care of the elderly when the elderly need. But if a family and a community are without accessible design, the ideal will become a burden on the families.

Since the Welfare Laws for Handicapped People is not instituted thoroughly and perfectly, the architectural designs and traffic facilities have neglected the needs of the handicapped people and the elderly. In my country most public buildings, government office buildings, transportation stations, schools, and resorts have some accessible design, such as curb cuts, direction indicator tiles, sounding direction signs, and braille direction indicators. But the accessible designs that are not considered carefully are restroom doors that swing inside, no leg room under lavatories, not enough turning space in elevators, direction indicator tiles there are not wide enough and gradients of ramps that are not in a good ratio of length to height.

Summary

From the Welfare Laws and those accessible designs that do exist, we know that the barrier-free environment concept has been sprouted in my country. Although the barrier-free concept has begun to be established in my country, in my opinion, revising the welfare laws and setting the accessible design standard code in our architectural law is most urgent needed. The welfare laws and architectural laws should carefully specify how, where, when, and what is needed for the welfare of special populations in regard to accessible design of the buildings and transportations facilities.

People are equal in my country, but why does the government provide an accessible environment only to the able-bodied? And why does the government not provide an environment which can be lived in by able-bodied and the disabled? The barrier-free environment is needed by everybody; it is not only needed by the handicapped. As long as the country has no barrier-free environment, it is difficult to eliminate the "Ugly Law." As long as Taiwan has no barrier-free environment, it is difficult to stand among the developed countries. Also as long as Taiwan has no barrier-free environment, it is difficult to help the handicapped to live, study, and find jobs. As long as Taiwan has no barrier-free environment, it is very hard to set a real standard for a fair society.

TRADITIONAL CHINESE ARCHITECTURE IN TAIWAN

Introduction

The Chinese say, "It is not until one has understood the past that one may know the present," and we may go further and say that only thus can one begin to imagine future developments. The traditional architecture is both witness to the past and a mark of cultural development. From a study of the traditional architecture, one may gain an understanding of culture, society, politics and the economy as they existed at some moment in the past. The presence of Chinese civilization in Taiwan dates back only a few hundred years, yet one can hardly deny that the achievement of the early settlers from Kwangtung and Fujien represents the spirit of the Chinese at their best. The traditional architecture in Taiwan remains and gives concrete expression to such mainstay traditional values as obedience, family solidarity, and national strength, and provides the means for a deeper understanding of the roots of Taiwan's cultural development. Due to unstable conditions prevailing throughout Taiwan's history, especially during the early period of the seventeenth and eighteenth centuries, there was considerable depredations to historical sites during the later period of Japanese administration (1895-1945). The number of representative historical sites surviving intact is not large. But from

the layout, site, design, materials, motifs, styles, and modes of the preserved traditional architecture-city walls, study halls, private residences, gardens, temples, portals, stelae and cemeteries-fully reflect the central orientation of the Chinese architectural characteristics.

Traditional Chinese architecture is, like other countries, affected by economy, culture, politics, society, religion and individuals. Religion has probably been a powerful force in the development of monumentalism in architecture, but this force in China (including Taiwan) was far less powerful than in Europe. This research paper will explore traditional Chinese architecture in Taiwan through cultural, social, religious and economic aspects by means of six unique characteristics: a Chinese myth, Confucianism, materials, color, courtyards, and Fengshui. People always say, "seeing is believing"; this paper intends to prove what I have written in the research paper for the course, Housing in Other Cultures, about Chinese traditional architecture. Therefore, this paper combines the theories of traditional Chinese architecture from books with my personal experiential observations of the traditional architectures in Taiwan. It is impossible to discuss or to understand a country's architecture without relating it to its culture.

A Chinese Myth

The Chinese believe there is a god in every business and the god will help and protect the business; therefore, certain businesses worship certain gods in certain times of the year. P'an Ku, Lu Ban Kong and To Dee Kong are the gods of architecture and are worshiped by architectural business in Taiwan. P'an Ku hatched from an egg-shaped through the power of the natural force. The parts of the egg are separated, the heavy elements forming the earth (Yin) and the light portion forming the sky (Yang). P'an Ku grew in height ten feet per day, becoming a giant, pushing the sky and earth further apart. His great body became a pillar. From his efforts the sky became domed in shape and the earth square. His death created the remaining details of the materials of the universe. His breath became the wind and clouds; his voice, thunder and lightning; his left eye, the sun; his right eye, the moon. His blood was transformed into rivers, his flesh into soil, his sweat became the rain, and his marrow became pearls and precious stones. His limbs determined the four directions with his stomach being the center. The myth of P'an Ku is one explanation of the ordering principles of Chinese cosmology: centrality, axiality, and symmetry order. P'an Ku's birth brought order out of the chaos of an unformed universe; his labor and death created a material universe. These principles are at the heart of

Chinese thought and culture and form the foundation for understanding Chinese (The University of Minnesota Institute of Technology, 1981).

There are two more gods-Lu Ban Kong and To Dee Kong-also worshiped by architectural businesses in Taiwan and Hong Kong. Lu Ban Kong, the patron of carpenters and bricklayers, was a very famous master of carpentry in Han dynasty and his wife was a famous painter. They made many wooden masterpieces, second-to-none, together and their accomplishments and skills were admired and respected by their descendants. Lu Ban jing (the Lu ban Manual), was recorded by Lu Ban in the fifteenth century. it contains information on how to heighten the prospects for the good fortune of a wooden structure, and introduces the possibility of damaging curses. Lu Ban jing has governed building practices and dimensions to the present, in Taiwan and Hong Kong. The carpenters used a special ruler (the Lu Ban Shi) which is divided into eight segments, each with four divisions. Used to determine the size of rooms as well as the dimensions of windows and doors, the Lu Ban rule had the effect of standardizing measurements by virtue of avoiding those proportions which presaged misfortune. In Taiwan, the Lu Ban rule also has been used to determine the depth of courtyards in proportion to the height of the ridgepole, the length of rafters, the size of tiles and bricks, and the dimensions of stoves, among other things. To Dee

Kong is the most popular god in Taiwan; people believe To Dee Kong controls the earth. Therefore, every business is related to the earth worships this god. No matter what god they worship in Taiwan, it is a reflection of the traditional Chinese cultural spirit: respect for the sky and the earth and obedience to the scholarly and the wise.

Confucianism

The Chinese cultural essence is Confucianism. Confucius, the greatest sage and teacher in China formulated a code of ethics based on the concept of Jen, which is "to love men joyously from the innermost of one's heart." Jen, which is inborn in all human beings, represents the essence of humanity and must be cultivated. Confucius wanted to set up an ideal rules for both society and for the individual. Central to Confucian thought was the establishment and maintenance of a hierarchical system of obedience, with the five human relationships: between sovereign and subjects, father and sons, husband and wife, among brothers, and among friends. Above this hierarchy, nature was supreme; the sky and the earth must be respected. Common people were expected to be obedient first to their emperor, then to their parents, and next, to their teachers. Respect for elders and obedience to scholars thus became an integral part of ancient Chinese daily life and ritual, a value that has persisted till today. In addition to the social hierarchy of obedience, Confucianism established a rigid patriarchal family structure, giving responsibility and power to the eldest male (Boyd, 1962).

Based on Confucian principles which are rather rigidly patriarchal, the family, in its complete form consisted of the parents, their unmarried children, their married sons with their wives and families, all living under one

'roof'. Married daughters left the family and became members of their husband's families. Any male member, along with his principal wife, might have a secondary wife or wives, whose children were also part of the family. In one house the members might be four or five generations along with many servants, and may consist of several hundred persons.

Ancestral lands owned by the family were held in common and administered by the head of the family from central family funds, as were the household expenses. Individual salaries of male members were paid into the family fund. In the hierarchy of the family, the older generation had precedence over the younger, and the head of the family was the oldest male. The position of women was secondary to men, in any given generation, and they did not have an official voice in family councils. A woman could have authority over men of a younger generation, by virtue of the Confucian principle that both parents had authority over their children throughout their life. Confucianism has been a way of life for the Chinese and it has greatly influenced Chinese culture and civilization (Sorensen, 1979).

Building Materials

Chinese civilization first developed in the Yellow Earth region of China, where good building stone was scarce and timber supplies abundant. But the famous British architect, Joseph Needham, had another explanation about the material used in ancient Chinese buildings and wrote clearly in his distinguished book, Science and Civilization in China. He believed the wooden structural building system in China was the result of a society which had no slave system during that time. In the ancient time, China had no slave system like the ancient Egyptian, which used massive slave power to build much stone architecture. China had already had their architectural characteristic-wooden structures-before they had a slave system to build the Great Wall, the massive stone architecture at the Ching dynasty. Another explanation is the Chinese believe that the human beings are in charge of society. European believed that God was in charge of society. Because man's life is short and god's life is perpetual, the buildings for man and the building for god are different. Using wooden structure rather than stone (in ancient Chinese building) is still a puzzling and perplexing question (Su, 1964).

Timber as a material is light for its strength, cheap to transport, easy to work, carve, mass-produce, and to standardize. It can be massive and also durable when protected by a periodically renewed protective skin of

stain. For the purpose of Chinese architecture and planning, as they had developed in the Han times, the timber system was not only eminently suitable but more suitable than other systems. The timber construction had a lower degree of permanence, but not all societies put a high value on permanence. Rather, what the ancient Chinese wanted was "renewability"; therefore, complete rebuilding, being relatively cheap, was frequent. It is just as Rapoport states, "There are cases in which the way of life may lead to almost anticlimactic solutions, with the dwelling form related to economic, [culture, and social] activities rather than climate." (1969, p. 20). The basic elements of Chinese architecture, both small and large, are few and simple.

One of the typical traditional Chinese structural is the base or podium, whose original function was to raise the floor and the structure of the hut above the dampness of the ground. Four thousand years ago a famous Chinese scholar, Mor Zis, said, "the low places hurt man." Some researchers believe the podium ideal is the result of people who had experienced a flood. Another explanation is that the Chinese already knew the "spread footing" concept, a gravitational terminology in modern architecture. The podium structure also can be seen in many Japanese traditional buildings. This base consists of hard rammed earth for humble buildings and brick or stone for grander ones. It varies in height and

elaboration according to the "rank" of the building (Boyd, 1962).

Traditional Chinese building roof forms are of five basic types: the gabled, the hipped, the half-gable, half-hipped, and the pyramidal. All the roof timbers are ordinarily meant to be seen. In important buildings an internal wooden ceiling fixed to or suspended from one of the levels of cross-beams is often provided as a decorative feature. The ceilings are basically a squared framework forming panels or coffers, which were painted. A central space in an important hall would often be ceiled in an octagonal or circular raised or domelike shape formed by means of brackets, carved and painted woodwork. This emphasis on the roof, the greater eaves overhang, the curved roof lines and the bracket cluster with painted traditional color, are especially familiar features of Chinese architecture (Lee, 1982).

Colors in Architecture

Color is one of the most interesting qualities of Chinese architecture. The main traditional Chinese colors for building are red, green, blue, yellow and white. The whole building is designed in color as well as form, and in a complete and brilliant range of color. The functional basis is the protection of the timbers from decay and parasites; the aesthetic aim is to have timbers play a major part in a totally polychromatic building, from top to bottom. The actual colors used vary according to time and place. Their general distribution is to enclose walls on which a building stood. If plastered and not left in the natural materials, one color is used, often red, or perhaps white, yellow or blue. Red was often used on beams, brackets, rafters, eaves, and ceilings. A range of vivid colors and patterns, often with blues and greens predominating are used in the buildings. The roof is a single color throughout: blue, green or yellow. One reference mentioned black, this is wrong, because the Chinese believe black is ominous, even the funeral home do not use black as their roof color (Lee, 1986).

Courtyards

Another interesting traditional architectural quality is the use of walls and courtyards. Traditional Chinese homes have a walled enclosure composed of one or more courtyards, each with lesser and lower buildings on the east and west sides of each courtyard. The purpose of the wall is to provide quiet and privacy. There were, of course, many local and historical variations of courtyards. A traditional Chinese family house is usually surrounded by three main buildings and walls. The whole house faces into its own courtyard. The principle rooms are typically in the higher building, opposite the main entrance. The entrance is in the middle of the south wall. Entrances have always had some form of screen or screen wall on the inside for privacy. A typical house would be the main living and reception room, the parents' bedroom, a study, and a child's bedroom on the suite on the north. The older children were in one of the side suites, a married son in the other, and servants in the suite on the south. Sometimes, the servants' quarter would be enlarged into a courtyard of its own, separated by a wall or verandah from the main courtyard. Most Chinese courts were paved with stone slabs. Within the court a small pond might have lotus and fish growing in it. Trees grew in the courtyard and flowers in pots were always set out around the court. Artificial mountains or strangely shaped

stones could be in one of the corners. In some large houses there were two courtyards which were separated by a long guest room or reception hall. The inner courtyard was where only relatives and intimate friends would normally be invited (Han, 1973).

Traditionally, the floors of the rooms were of slabs, and carpets were few. All rooms facing the courtyard side were composed of a panel of windows and doors. Windows were of thick translucent paper. In the spring they were rolled up and the rooms opened to the outside air. Wide eaves protected the rooms from rain and from the midday summer sun. The traditional houses was perhaps not so perfectly adapted to winter as it was to the other seasons. The oiled paper windows had a certain amount of thermal resistance, but tended to let in blasts of cold wind. External shutters could also be fitted to the windows. The general method of heating was always the portable charcoal brazier, in a bowl form brought into the house by the servant. Some palace buildings had underfloor heating; this heating system was like the common form used in ordinary houses in the north of China. It was the k'ang or raised heated dais extending over part of the room. (There were never chimneys in Chinese houses.) The dais served as a sitting area by day and a sleeping area at night. Artificial lighting was by oil lamps or by candles and used inside the house; lanterns were used only outside (Su, 1964).

There are two living necessities which are not always shown on traditional Chinese house plans. One is the kitchen, which is sometimes in the open air, on a verandah or in an outbuilding. This is why traditional Chinese houses have no chimney. The other necessity is the privy, often built as a separate little shed in some convenient corner. It consists essentially of a narrow lined rectangular pit about two feet deep, with a seat consisting of a narrow board over one end. Sewage disposal in Chinese towns was by a system of carts, often run by private enterprise. The privies are emptied from door to door collection at night. Then the sewage is delivered outside the towns to the surrounding farms, where it was composted and used for fertilizer. This system still can be seen in many cities in the mainland today. Another familiar element is the bathroom which also does not usually appear in the house plan. The toilet arrangements in the homes of the well-to-do, including bathing and washing, were mainly provided for by means of basins, bath-tubs, commodes, etc., brought to private rooms by the servants (Boyd, 1962).

Due to the fact that labor of servants in China was cheap, therefore an ordinary family always had two or three servants living inside the house and several part-time servants living outside, with their own families. Usually man-servants would sleep in the servants' rooms on the outer courtyard, or by the main entrance. The

maids would sleep in the family rooms with the woman or children in their charge.

The quality of a Chinese house that a Chinese would value most might well be its seclusion. Some famous traditional larger homes were formed on the same principles by accretions of more rooms, more courtyards, and of course by addition of gardens. Among the "extra" kinds of rooms in larger homes might be the chair-hall or covered space for sedan-chairs near the entrance. Others include studies and libraries, "flower halls" or garden rooms (opening directly onto pools or gardens), and various kinds of pavilions and summer homes in the garden itself. In most larger houses there might be several hundred persons including four or five generations and along with their servants, several hundred persons. The most famous traditional home, Lin's garden, built in the Ching dynasty in Ban-chaio, Taiwan, occupied six hundred and thirty thousand square feet, in which lived more than six hundred people of five generations including servants, at one time. It was an old Chinese belief that a family with many members, especially boys or men, was an auspicious family; even in the modern times, they still believe so in Taiwan (Han, 1973).

Fengshui

Traditional Chinese buildings and today's modern buildings are linked with a unique esoteric mystical ecology called Fengshui. Literally, Fengshui means wind and water. Fengshui is a traditional mystical belief which helps home-owners to select proper sites for providing good fortune and many progeny. Fengshui is a compiled record of traditional folk beliefs and experiences in the choice of building sites. It encompasses an array of patterns and symbols to assist in the selection of proper sites for dwellings, palaces, cities, graves, roads, etc.. "The effect of site is cultural rather than physical, since the ideal site depends on the goals, ideals, and values of a people or period, and choice of the "good" site-whether lake, river, mountain, or coast-depends on this cultural definition" (Knapp, 1986, p. 107). The Chinese believe that "when a man sets up a building he inserts something into the landscape and between him and his neighbors" (p. 109).

The Chinese believe that

"the physical universe is alive with forces that, on the other side, can be shaped and brought to bear on a dwelling and those who live in it, and on the other side, can by oversight or mismanagement be made to react disastrously, But the very act of siting and constructing a house to one's own advantage may be to

the detriment of others. Modifications in the landscape reverberate. So that, in principle, every act of construction disturbs a complex system made up of nature and society, and it must be made to produce a new balance of forces, lest evil follows" (Knapp, 1986, p. 109).

The Chinese believe that the physical universe is alive with forces and is in a balanced condition. The abstract elements in the universe, Yin and Yang, are the balancing conditions. Yin means the female aspect, representing passivity, the tiger, darkness, softness, weakness, the moon and water, etc. The man, or Yang, expresses brightness, activity, the dragon, strength, hardness, the sun, mountains, and fire, etc. Anything small or large in the universe must be in a balanced condition. To confuse these natural qualities is to invite adversity.

In Fengshui, there is a "shi", the geomancer, who follows the esoteric manuals determining a proper building site, a Yin and Yang balanced environment. The Fengshui-shi also can assist the family to make a site conform to a balanced condition.

"The Fengshui characteristics of a site are linked to those who will utilize it by relating the time and date of the principal's birth to the particulars of the site. The temporal and spatial personalization of a site isolates for an individual and his family

the fund of good fortune that accrues therefrom. In a world of limited resources, Fengshui provides a means of assuring a reasonable share of good fortune that includes wealth, progeny, good harvests, health and official positions" (Knapp, 1986, p.110).

Fengshui manuals include abundant diagrams portraying a multiplicity of terrain patterns that might be encountered. Fengshui principles help manage the use of an environment by underscoring elements of the natural order which have worked for generations of forebears.

Fengshui manifests the Chinese tradition as well as demonstrating those factors which bind the individual, family, and society together and link them to the past. Using the practice of Fengshui, builders sought to insure prosperity and employ auspicious and inauspicious numbers and directions. Builders and Fengshui masters presumably have been able to warrant those living in a household benefits that accrue to a specific site and dwelling layout. The concept of Fengshui reveals a clear understanding of local environmental conditions, especially as these relate to sun angle, drainage, and winds. The Fengshui has affected building in China as long as Confucianism. Fengshui and Confucianism have been a way of life for the Chinese for over 4,000 years. Fengshui is a traditional belief system and practice that still directly affects building decisions in Taiwan, Hong

Kong, and Singapore, but it was not used in mainland China from 1949 to 1974, when chairman Mao died. Because the Chinese Communists in the mainland hoped to build what they thought of as a "New China", Mao wanted people to destroy the "Four Old Stuffs": old ideas, old cultures (Confucianism), old traditions and old customs.

Summary

This research paper is combined with personal observational experiences. It is very hard to write down all the information about the topic, especially for an old country with a long period of history, a large scope of environmental issues, and many varieties of esoteric traditions. But this paper was compiled by a person who has practical experience seeing, touching, and living in this environment, and has been immersed in this culture, thought, traditions, and customs for over forty years. Furthermore this paper is to prove the saying, "seeing is believing." I went to Taiwan to observe the traditional buildings and to prove what the book I read on traditional Chinese buildings has said. The paper also took in to consideration the instructor's comments and suggestions for making a more detail observation of a previous paper, "A Cultural Interpretation of Traditional Chinese Architecture." To this end, the value and insight of this paper has extended beyond mere dependence on scholarship.

This paper attempts only briefly to introduce the culture and meaning of traditional Chinese architecture in Taiwan. A famous Chinese historian and author, Lin Yu Ton (1893-1967) bemoaned that sometimes one could only find traditional Chinese culture in Taiwan, Hong Kong and Singapore. Those places have preserved the traditions because the governments have treasured and respected the

precious traditions morethan the Chinese Communists did on the mainland China. The Principles of Chinese architecture--centrality, axiality, symmetry, and hierarchical order--are established and influenced by the essence of Chinese culture: Confucian thought. The traditional folk beliefs and experiences-Fengshui-also occupy a very important position in traditional Chinese architecture. These traditions, then, are what I observed in the traditional architecture of Taiwan. They have been an important influence for thousands of years and are still practiced today.

CONCLUSION

If an interior designer performs his or her business in a country without knowledge of the culture and traditional background of that country, the designer is like a ship sailing in an ocean without a compass. Thus, it is very difficult to practice the business of interior design in a country without knowing something about the traditional architecture of the country. Also it is very hard to help the handicapped people of a particular country without knowing the current situation of the social welfare laws and regulations regarding accessible design in that country. The Republic of China's founding father, Dr. Sun Yat-sen, said "The purpose of a life is service." Six years ago, when I decided to go abroad to study the interior design in the United States, I told myself that I should learn something new and bring it back to serve my country.

Interior Design is a new field of study in America. Accessible design for the handicapped did not begin until the 1960's in the U.S. This is the reason I, having ten years of mechanical engineering experience as an airman, switched my major from engineering to interior design so that I could learn something new to serve my country. Although I am Chinese, traditional Chinese architecture is like a stranger to me. Like most Chinese, I could recognize a Chinese building but I could not tell the characteristics of Chinese architecture. After taking

the course "Housing for Special Groups," I found my interest in the field of interior design. Then after studying the course "Housing in Other Cultures," I discovered the necessity of applying cultural knowledge to the practice of interior design in my country. I have acquired basic knowledge of interior design and knowledge of the traditional architectural of my own country, and have gained the confidence to help my country in this field. Going back to my country to do my internship was a way to find out what I should learn before I go back home. What are the real needs of the interior design field in my country? The internship gave me a good chance to understand and to answer my questions and to practice what I have learned at school.

Another aspect of learning that I discovered through the summer internship was that it is impossible to perform a new idea and concept without tears and perspiration. In the summer, I started to write articles advocating the concept and the importance of accessible design. Although there were some articles published in some newspapers, the majority of articles were rejected for publication. The ideas I presented were too unfamiliar to the editors for them to give the attention I felt they desired.

Completing this internship report is the start of a new task: to advocate the new concept of accessible design to my society and to devote what I have learned

about interior design to my country. There will be more struggles and distress for me to overcome. With the acquired basic skills and knowledge of interior design I learned from the U.S., along with my summer practice experiences from Taiwan and, the most important objective, confidence in myself, I am sure I can overcome the struggle to help my people, my society and my country.

To whom it may concern:

This is to certify that Mr. Robinson King wrote two papers in Chinese published in The Independence Evening Post. The first paper, "The Welfare Laws regarding Barrier-free Working Environments for Handicapped People" was published on June 19, 1988. And the second paper, "The 'Ugly Law' and Barrier-free Environments" was published on August 3, 1988. The Independence Evening Post is published nationwide everyday in the Republic of China; it is the most popular evening newspaper in the country.

Purportedly, the paper, "The Welfare Laws regarding Barrier-free Working Environment for Handicapped people" said that Article 17 of the Welfare Law states that "any public and private company should hire at least three percent handicapped of the total employees." Article 22 of the law states that "the government has the responsibility to build facilities for the handicapped in public buildings."

Recently some people have argued that Article 17 makes the hiring percentage of handicapped too high; but others said it is not high enough. In the paper, Mr. King said the percentage is not important but to practice Article 22-to build the facilities first in public buildings-is more important. It is a vain effort for people to argue on the percentage if there is no barrier-free environment. Mr. King suggested in the paper that

Article 22 should further clarify what kind of facilities should be built. Who are the users of the facilities? the blind? the deaf? the wheel-chair restrained? How many facilities should be built in a building? What kind of standards should be followed to build the facilities? In closing the paper, Mr. King suggests instituting the national standard for buildings and facilities for physically handicapped people as soon as possible. Building the barrier-free environment first and then talking about the hiring percentage of the handicapped is the correct priority.

The second paper, "The 'Ugly Law' and Barrier-free Environment" said that the name "Ugly Law" came from the people who gave the name to cities, buildings or organizations which had no barrier-free environment. They accused them of dodging and to shirking the responsibility for any accident that may happen in their areas or businesses. The United Entrance Examination of the colleges in Taiwan is an example of the "Ugly Law," the paper said, because the examination committee set restrictions on the handicapped students. The reason for these restrictions is that the schools can not accept the handicapped students in certain buildings that do not have accessible design. The paper said the "Ugly Law" has buried the talents of many handicapped as well as having deprived the fair contest opportunity of the handicapped in studying and job hunting. The reason that

society has neglected the problems of barrier-free environments is that the voice of the handicapped is too small. The handicapped population (140,000 in my country) is a minority in the society; their organizations have no power and no money to advocate their needs. In the paper, the author suggested that the handicapped should unite with the elderly people (1,080,000 are over 65) to be the "special populations" and strive for their rights together. Also the paper suggested that society:

1. set national standards for buildings and facilities for physically handicapped people.
2. amend Article 22 of the Welfare Law for Handicapped People to more clearly state the needs of the handicapped.
3. set national interior designers qualifying examinations.
4. have questions in the examination about the accessible design for handicapped people inside and outside buildings.
5. add accessible design courses in college interior design and architectural departments.
6. advocate that society prepare for the increase of the elderly population and notice the importance of barrier-free environments.

In the conclusion, the author said that it is difficult to eliminate the "Ugly Law" if there are no

barrier-free environments. It is also difficult to stand among the developed countries, if Taiwan, Republic of China has no barrier-free environments. It is difficult to help the handicapped to live, study and find jobs if there are no barrier-free environments. It is also difficult to set a real standard for a fair society if there is no barrier-free environments for the handicapped.

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