DISCOVERY, INHERITANCE AND INNOVATION

INCORPORATING TRADITIONAL CHINESE FAMILY VALUES WITH RESIDENTIAL DESIGN

Arthur Chen, B.A.S.

A thesis submitted to
The Faculty of Graduate and Postdoctoral Affairs
In partial fulfillment of the requirements for the degree of

Master of Architecture

Carleton University
The Azrieli School of Architecture and Urbanism
Ottawa, ON

©2011
Arthur Chen

Library and Archives
Canada

Published Heritage
Branch

395 Wellington Street
Ottawa ON K1A 0N4
Canada

Bibliothèque et
Archives Canada

Direction du
Patrimoine de l'édition

395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file Votre référence
ISBN: 978-0-494-81718-6
Our file Notre référence
ISBN: 978-0-494-81718-6

NOTICE:

The author has granted a non-exclusive license allowing Library and Archives Canada to reproduce, publish, archive, preserve, conserve, communicate to the public by telecommunication or on the Internet, loan, distribute and sell theses worldwide, for commercial or non-commercial purposes, in microform, paper, electronic and/or any other formats.

The author retains copyright ownership and moral rights in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

AVIS:

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque et Archives Canada de reproduire, publier, archiver, sauvegarder, conserver, transmettre au public par télécommunication ou par l'Internet, prêter, distribuer et vendre des thèses partout dans le monde, à des fins commerciales ou autres, sur support microforme, papier, électronique et/ou autres formats.

L'auteur conserve la propriété du droit d'auteur et des droits moraux qui protègent cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

In compliance with the Canadian Privacy Act some supporting forms may have been removed from this thesis.

While these forms may be included in the document page count, their removal does not represent any loss of content from the thesis.

Conformément à la loi canadienne sur la protection de la vie privée, quelques formulaires secondaires ont été enlevés de cette thèse.

Bien que ces formulaires aient inclus dans la pagination, il n'y aura aucun contenu manquant.

Canada

Abstract:

This thesis attempts to solve the challenges caused by China's fast-paced development and subsequent urbanisation, which involve pollution, over-population, problems with transportation, high/unreasonable real estate prices, a poor-quality living environment, increases in the unemployment rate, and disruptions in the social and economic order. As an architect, I have used an economically developed city, Taipei City, as an example to alleviate those challenges. This approach attempts to use village living concept, with housing designs generally reflect Chinese traditions and ideologies, in order to address these challenges, and in a process that ultimately brings Chinese families back to the traditional way of living.

Issues discussed in this project are categorized in the order of what, how and why: what are the issues and challenges China currently is facing, how those challenges provide opportunities as an architect, and why this plan is a preferred alternative to living in overcrowded cities.

The process of finding substance for contemporary architectural proposition is achieved by using the gathered intelligence of ancient Chinese thinkers and philosophers and studying contemporary Chinese housing projects infused with Chinese traditional concepts, and analyzing their advantages and shortcomings.

Lessons are drawn from studying these projects. Instead of literally copying old traditional elements, as is often customary in residential projects, the spatial, architectural and cultural values are derived from traditional Chinese ideology, which can also serve for educational purposes in modern times, as they relate to retired people and certain working professionals in Taipei City.

Acknowledgements:

My first and most profound thanks go to my thesis advisor Greg Antonian who helped me whenever I encountered difficulties, my client C.C. Chen who gave me this opportunity to put my theory into reality, and C.Y. Lee who was my mentor during my research in Taiwan and China.

There is no hierarchical order to the names which follow; each has had a significant contribution towards the research of this project. I wish to thank the staff and faculty at the Azrieli School of Architecture and Urbanism, Carleton University. I am grateful to my Architecture Master Thesis Review Committee Members whose thoughtful suggestions greatly improved this project.

Finally, I would like to thank my family for their patience, support, and understanding.

Table of Contents

Chapter 1: Introduction	1
1.1. Current Issues in China	4
1.1.1. Pollution and Over-population	8
1.1.2. High Real Estate Prices and a Poor Quality Living Environment	10
1.1.3. Disruption in the Social and Economic Order.....	12
1.1.4. Transportation	13
1.2. Architect's Proposal: Decentralization/Suburbanization	14
1.3. Site Selection: Agricultural Land and Policy in Taiwan.....	15
Location.....	15
Transportation	16
Competitive Price.....	18
Zoning Policy.....	19
1.4. Advantages and Disadvantages of Suburbanization and Using Agricultural Land.....	20
Advantages	20
Disadvantages	22
1.5. Targeted Clients: Who Benefits Most?	24
 Chapter 2: Design Principles: Discovery, Inheritance and Innovation	 29
2.1. Discovery: Chinese Tradition, Ideology and Culture Reflected in Architecture	30
2.1.1. Confucianism	32
2.1.2. Taoism.....	47
2.1.3. Feng Shui	52
2.2. Inheritance: Passing Down and Then Improving the Tradition	60
2.3. Innovation.....	64
2.3.1. Emphasizing Ecology	64
3.3.2. Creating Architect-Client Relations in Taiwan.....	67
 Chapter 3: Referencing.....	 69

3.1. Architectural Moments: Villa Savoye	69
3.2. Man, Architecture and Nature: Fallingwater	73
3.3. Creating Shangri-La: Miho Museum	77
Chapter 4: Design Solution	81
4.1. Client Background	81
4.2. Path of Changes in Client's Residential Houses	83
Early 1980's: "Chin Yuan"	83
Late 1980's and early 1990's: Chen's Compound	89
1996 to 1998: Mandala	92
4.3. The Role of Mr. Chen's Taiwanese Aboriginal Art Collection in This Project	102
4.4. Design Program	105
Site Analysis	106
Program	111
Exterior	112
Interior	127
Chapter 5: Conclusion	139
Works Cited	141

List of Figures:

Figure 1.1 Graph of urbanization level from 1980 to 2030 (China).....	5
Figure 1.2 The exterior of the Jin Mao Tower.	6
Figure 1.3 Suzhou Museum by I.M. Pei, Suzhou, China	6
Figure 1.4 Map of the Greater Taipei Area.	8
Figure 1.5 Image of overcrowded Taipei City	9
Figure 1.6 of the recent housing price increase in Taipei City from 2005 to 2009.	10
Figure 1.7 Map of Taiwan.	15
Figure 1.8 Taipei Rapid Transit System	16
Figure 1.9 Statistical graph of average Taipei house prices in the past three years.....	18
Figure 1.10 Rendering of a concept house in farmland.	20
Figure 1.11 Image illustrates a life style that cannot be offered in a city.	21
Figure 1.12 View of overcrowded Taipei City.....	26
Figure 1.13 Sample of one's dream house.	27
Figure 2.1 Mandarin Palace in Shanghai, completed in 2004.	29
Figure 2.2 Earth Building in Fujian China	30
Figure 2.3 A symmetrical, homogeneous layout of a Siheyuan.	33
Figure 2.4 An eight kilometre-long central axis in the Forbidden City	33
Figure 2.5 Courtyard complex forms a continuous feeling of stretching on earth.....	35
Figure 2.6 A Formal Upright style bonsai.....	37
Figure 2.7 An Informal Upright style bonsai.	38
Figure 2.8 A Slant style bonsai.	38
Figure 2.9 A Cascade style bonsai.	39
Figure 2.10 A Semi Cascade style bonsai.	39
Figure 2.11 This Japanese black pine has poor branch order.	40
Figure 2.12 Notice how the bar branch structure almost seems to cut the tree in half.	41
Figure 2.13 Semi Cascade style bonsai resembles the cantilever of Fallingwater.....	41
Figure 2.14 Image shows the superior and inferior sides	42
Figure 2.15 Wong's Compound	44
Figure 2.16 Another image of Wong's Compound	44
Figure 2.17 Outdoor hierarchy of a courtyard: red>orange>green.....	45
Figure 2.18 Indoor hierarchy of a courtyard: red>orange>yellow>green.....	45
Figure 2.19 A sample of traditional Chinese garden	48
Figure 2.20 Chinese painting depicting an ideal state favoured in Chinese gardens.	49
Figure 2.21 Kunming Lake	50
Figure 2.22 Plan of Kunming Lake: three islands in the lake.	51
Figure 2.23 Fuhai Lake in Yuan Ming Yuan, Beijing	51
Figure 2.24 Building site that follows the Feng Shui guidelines.	52
Figure 2.25 Tai-Chi and Eight Trigrams.....	53
Figure 2.26 A shot of Suzhou Garden	55
Figure 2.27 Cycle of generation and control of the Five Elements.	57

Figure 2.28 Eight Trigrams arrangement.....	58
Figure 2.29 A vision of individual residential houses on agricultural land.....	63
Figure 2.30 Use of biodigester and ecology pond.....	64
Figure 2.31 Miniature wind generator.	65
Figure 3.1 Villa Savoye.....	69
Figure 3.2 Interior of Villa Savoye.....	71
Figure 3.3 Fallingwater in Pennsylvania, completed in 1937.	73
Figure 3.4 Social area	75
Figure 3.5 Tunnel dug through neighbouring mountain.	77
Figure 3.6 Suspension bridge.....	78
Figure 3.7 The glass-roofed entrance hall.	79
Figure 3.8 Night view of the bridge emerge on to the tunnel.....	80
Figure 4.1 View from Chin Yuan roof top.	83
Figure 4.2 New modern house built on the old structure.....	83
Figure 4.3 Front view of Chin Yuan.	84
Figure 4.4 Pavilion on the landscape of Chin Yuan.	84
Figure 4.5 Pond in the back garden of Chin Yuan.....	84
Figure 4.6 A shot of Brion-Vega Cemetery.....	84
Figure 4.7 Bonsai on the roof garden of Chin Yuan.....	85
Figure 4.8 Sliding Screen door.	85
Figure 4.9 Totems are displayed on both sides of the walkway.....	86
Figure 4.10 An elevated square separates itself as a tea area.	86
Figure 4.11 A cantilever bench overlooks the entire living room.....	86
Figure 4.12 Taiwanese aboriginal boat paddles.	87
Figure 4.13 A floor-to-ceiling bookcase curves in along the concave wall.	87
Figure 4.14 The wall convexes in the shape of the stairs going up to the third floor.	87
Figure 4.15 View of Taipei city from Yang Ming Mountain.	89
Figure 4.16 Red brick walls and modernized sloping roofs.	89
Figure 4.17 White stucco walls	90
Figure 4.18 Hisashi featured at the gate of Chen's Compound.....	90
Figure 4.19 Interconnected compound in Chen's Compound.	90
Figure 4.20 Roofs of each pavilion are all connected.	91
Figure 4.21 Bonsai in the Chinese style garden.	91
Figure 4.22 View of Chen's compound.	91
Figure 4.23 Tibetan Buddhist Thangka painting of Mandala	92
Figure 4.24 North elevation sketch of Mandala.....	93
Figure 4.25 A lantern of Mandala	94
Figure 4.26 Porte cochere leading visitors to Mandala.....	94
Figure 4.27 A red door appears at the end of the porte cochere.	95
Figure 4.28 The entrance door.....	95
Figure 4.29 Butt-glazed glass system	96

Figure 4.30 Looking out from foyer to the entrance of Mandala.	97
Figure 4.31 Screen wall at the entrance of Mandala.	97
Figure 4.32 Indoor part of the swimming pool.	97
Figure 4.33 Top: View of the house and lake; Bottom: Lake viewing from the house.	98
Figure 4.34 Dining table.	98
Figure 4.35 One of the four fireplaces.	98
Figure 4.36 Mr. Chen's teapot collection.	99
Figure 4.37 Le Corbusier chairs with Ming Dynasty Table and lantern on the back.	99
Figure 4.38 Cassina chairs with Ming Dynasty chairs in the living room.	100
Figure 4.39 Chen's Taiwanese indigenous collection.	103
Figure 4.40 Yami boat and wood carvings on the wall.	103
Figure 4.41 Life size goat by Taiwanese indigenous people	104
Figure 4.42 Picture of part of Chen's indigenous collection	104
Figure 4.43 Taiwanese indigenous hunting tools	104
Figure 4.44 Corner of Mr. Chen's current private museum.	104
Figure 4.45 Taiwanese indigenous totem poles.	104
Figure 4.46 The 0.815 acre land that Mr. Chen bought.	106
Figure 4.47 Site plan.	107
Figure 4.48 The one lane road leading to the site.	107
Figure 4.49 Danshuei Mountain in Danshuei Township.	108
Figure 4.50 Looking out to the left from the site.	108
Figure 4.51 Looking out to the right from the site.	109
Figure 4.52 South Section (Site)	109
Figure 4.53 West elevation.	110
Figure 4.54 The concept of reinterpretation of bonsai and Chinese ideology	113
Figure 4.55 South elevation	114
Figure 4.56 The ground floor of the house is below grade.	115
Figure 4.57 An example of a house with strong contemporary Chinese motifs.	115
Figure 4.58 Concept of each floor layout.	116
Figure 4.59 Sample of third floor courtyard terrace.	117
Figure 4.60 An example of contemporary sloping roof.	118
Figure 4.61 3D model, drive to the house.	119
Figure 4.62 3D model, rear view.	119
Figure 4.63 3D model	120
Figure 4.64 3D model, sloping roof.	120
Figure 4.65 3D model, roof terrace.	120
Figure 4.66 3D model, eye level view.	121
Figure 4.67 3D model, facade.	121
Figure 4.68 3D model, west view.	121
Figure 4.69 3D model, bird's eye view.	122
Figure 4.70 Trees Mr. Chen selected for his landscape.	123
Figure 4.71 Bonsai selected by Mr. Chen.	125
Figure 4.72 An example of foundation wall built by stones.	126
Figure 4.73 Concept of landscape looking out from the house.	126
Figure 4.74 Ground floor plan.	128

Figure 4.75 Second floor plan	128
Figure 4.76 Third floor plan	129
Figure 4.77 Fourth floor plan.....	129
Figure 4.78 Concept of Mr. Chen's collections on ground floor.	131
Figure 4.79 Concept of Mr. Chen's collection on the second floor.	133
Figure 4.80 Concept of meditation room.....	134
Figure 4.81 Concept of Mr. Chen's collections on third floor.	135
Figure 4.82 Enclosure of human body and enclosure of courtyard house.....	136
Figure 4.83 Concept of Mr. Chen's bonsai collection on fourth floor.	137
Figure 4.84 An example of mixed furniture of Ming Dynasty pieces and modern pieces	138
 Figure 5.1 A vision of the future	 140

List of Tables:

Table 1.1 Overview of the North Branch of Agriculture.....22

Table 1.2 General statistics of Taiwanese households.25

C

hapter 1: Introduction

When a billion Chinese jump...

"A boyhood nightmare, the Chinese were so numerous that if they all jumped together they could knock the world off its axis. Now that most of China's 1.4 billion people prefer to live better today than to trust the promise of a socialist paradise tomorrow, the shock to the world's economy, atmosphere, soil, water, forests and natural resources seems set to trigger his boyhood terror. The demands of a billion Chinese bent on becoming prosperous consumers could indeed, on China's present trajectory, knock the world off its axis."¹

Hilton, review of "When a Billion Chinese Jump" by Jonathan Watts

The objective of this project is to provide alternatives for the challenges caused by a current problem China's fast-paced development has caused – that is, urbanization. There are six major challenges, caused by urbanisation, that mainland China is currently facing: pollution, over-population, problems with transportation, high/unreasonable real estate prices, a poor-quality living environment, an increase in the unemployment rate, and disruption in the social and economic order. By using a more developed area, Taipei City, Taiwan, as the focal point of the discussion, I intend to provide optimal choices to people who undergo these challenges as an architect, through the selection of site and designs reflecting Chinese traditions and ideologies, which perhaps ultimately help bring Chinese families back to the traditional way of living with more functional dwelling spaces.

¹ Hilton, Isabel. "When a Billion Chinese Jump by Jonathan Watts | Book Review | Books | The Guardian." *Latest News, Comment and Reviews from the Guardian* | *Guardian.co.uk*. 17 July 2010. 15 Mar. 2011. <<http://www.guardian.co.uk/books/2010/jul/17/when-billion-chinese-jump-watts>>.

Issues discussed in this project are categorized in the order of what, how and why: what are the challenges China currently faces, how to provide them with a better alternative as an architect, and why this plan is a better alternative to living in overcrowded cities.

The process of finding substance for contemporary architecture is achieved though using the gathered intelligence of ancient Chinese thinkers and philosophers and studying contemporary Chinese housing projects infused with Chinese philosophical concepts, and analyzing their advantages and shortcomings. Lessons are also drawn from studying three precedents. The approach used is to apply Chinese ideology to contemporary residential architecture and interpret traditional values, which may serve to simultaneously preserve the precious traditional culture and to improve the contemporary architectural design. Instead of literally copying old elements, as is often customary in residential projects, this approach reveals a deeper consideration of tradition. The spatial, architectural and cultural values derived from traditional Chinese ideology can also serve both an educational purpose for modern families in Taipei City and a proposal to the housing challenges Taipei City is facing.

The outcome of this research is to design a home that incorporates Western modern architectural techniques to create a scenario in a space that represents the East. Literati from the Song dynasty² tried to pursue paradise in their minds by using poetry and paintings, while on this land, I want to create a physical utopia for families, to help them discover true family values through Chinese traditions, culture and ideology, so they can inherit the good old ways of living – house living and living with extended family, as well as to educate modern city dwellers about the important relationship between humans and nature. Through an innovative design on farmland, which emphasizes ecology, the land and house can tell a story that city apartments cannot. To do so, this design explores the application of the Chinese traditional

² The Literati tradition, which began as early as the 10th century (during the Song Dynasty), was rooted in the historical Chinese ideal that educated gentlemen aspiring to government service would be poets of accomplishment—and that such literati would often show accomplishment in the art of painting as well.

SOURCE: http://www.artspeakchina.org/mediawiki/index.php/Literati_%E6%96%87%E4%BA%BA

layout and circulation, which embodies traditional Chinese ideology and culture, especially the value of living together as a family. The key features of traditional Chinese architecture – architectural bilateral symmetry, enclosure, a hierarchical system, horizontal emphasis and cosmological concepts are all based on traditional Chinese ideologies such as Confucianism, Taoism and Feng Shui. This design would bring together the traditional principles of Chinese ideology with contemporary architectural language, in which the traditional Chinese ideology and culture is used as a guiding principle and as a recurring theme in the details. The result is to create a new home as a lived-in art gallery, with natural materials and light as a backdrop to a magnificent collection of artefacts. Most importantly, this design would become a sanctuary where traditional family values, the old way of living, and the client's personal history and life can grow and blossom.

1.1. Current Issues in China

According to David Gale Johnson, an economist from Chicago University, who conducted a study focused on agricultural and development economics, with a population of 1.3 billion, China faces unprecedented urbanization challenges.³ The Chinese government, at various levels, strives to accelerate the urbanization process through city expansion and lowering the threshold⁴ for farmers to move into cities. Although urbanization is an inevitable consequence of modern economic development – by 2050, China needs to increase its city coverage from the current 36% to 70% in order to follow its economic development – this process has shown signs of “overheating”⁵ (Fig 1.1). Hidden drawbacks, such as intensive pressures on employment and social security, and bubbles in the real estate industry, suggest that the government needs to put the brakes on this trend by carefully scrutinizing different situations and taking steps to control the process.⁶ There will be six big challenges China will face during its process of urbanization: pollution, over-population, problems with transportation, high/unreasonable real estate prices, a poor quality living environment, an increase in unemployment rate, and disruption in the social and economic order.

³ Johnson, D. Gale, “Can Agricultural Labour Adjustment Occur Primarily Through Creation of Rural Non-Farm Jobs in China.” *Urban Studies* 39 (12): 2163-2174.

⁴ Chinese government has tacitly supported migration as means of providing labour for factories and construction sites and for the long term goals of transforming China from a rural-based economy to an urban-based one. Some inland cities have started providing migrants with social security, including pensions and other insurance.

⁵ “World Urbanization Prospects: The 2009 Revision Population Database. United Nations. 2009. 15 Oct. 2010. <<http://esa.un.org/wup2009/unup/p2k0data.asp>>.

⁶ Wen, Guoming. “Cautions on China’s Urbanization.” *The Maureen and Mike Mansfield Foundation*, 2004. 17 Oct. 2010. <http://www.mansfieldfdn.org/pubs/pub_pdfs/wen0105_chinaurban.pdf>.

China: urban population

With an average GDP growth of 10% over the past 10 years, China's economy moved to second place in world rankings in August 2010.⁷ With such a rapidly growing and developing growth rate, China has also become an architect and developer's heaven - a Gold Land of opportunities. The world's most renowned architects are flocking to Shanghai, Beijing and all the major Chinese cities, where they are building the world's biggest skyscrapers and hotels, futuristic

Figure 1.1 Graph of urbanization level from 1980 to 2030 (China).

Source Gruen David REFLECTIONS ON THE GLOBAL ECONOMY AND THE AUSTRALIAN MINING BOOM Australian Government, The Treasury 11 Oct 2006 07 Mar 2011
<http://www.treasury.gov.au/documents/1172/html/docshell.asp?url=gruen_david.htm>

⁷ R.A. "China: Second in Line | The Economist." *The Economist - World News, Politics, Economics, Business & Finance*. 16 Aug. 2010. 17 Oct. 2010.
<http://www.economist.com/blogs/freexchange/2010/08/china_0>.

model towns, theme cities and numerous other never-seen-before projects. Most of these big projects contain hints of Chinese characteristics, and it seems like the new trend in China is to build with intriguing oriental-industrial architectural characters,⁸ a feature seen in the Jin Mao (Fig. 1.2) and Jean-Marie Charpentier's Grand Theatre, as well as the Suzhou Museum (Fig. 1.3). This distinctive trend in Chinese contemporary architecture is also a great marketing point for developers of residential and office buildings. However, to be able to have a place in the Chinese market, it is crucial to keep in mind the challenges China will be facing throughout its extensive process of urbanization in the next several decades.

Figure 1.2 The exterior of the Jin Mao Tower, Shanghai's tallest building at 1,381 ft, China.

Source. McPhee, Don. *Jin Mao Tower*. 2009. Photograph. Shanghai The Guardian/The Observer. 16 Feb 2009 10 Nov. 2010
<<http://theguardiantheobserver.newsprints.co.uk/view/10800827/pd5659845.jpg>>

Figure 1.3 Suzhou Museum by I.M. Pei, Suzhou, China

Source. *I.M. Pei Returns to China in PBS Documentary*. Photograph Suzhou. *THOUGHTS ON ARCHITECTURE AND URBANISM*. By Studio Gang Archs. 5 Apr. 2010. 08 Apr 2011
<<http://myriamahiques.blogspot.com/2010/04/im-pej-returns-to-china-in-pbs.html>>

⁸ Gluckman, Ron. "Flash City." *Ron Gluckman in Cyberspace: Architecture in China*. July-Aug. 2003. 17 Oct. 2010. <<http://www.gluckman.com/ShanghaiArchGeo.html>>.

I decided to focus this project on a more developed area in China because the challenges China will face during its urbanization process are issues those areas are currently facing. By providing a solution in Taipei City, Taiwan, this thesis will set an example that can be used as a solution for similar problems China will face in the future. As a more developed area, Taipei City has already gone through the process of urbanization; however, during this process the six challenges named above were not well addressed, leaving the city with serious problems to face at the present time. Additionally, projects were constructed on western models, to deal with the rapid increase in population which was largely formed from rural migrants, and who often found these high-rise apartment dwellings inappropriate in satisfying their socio-cultural needs.

1.1.1. Pollution and Over-population:

Figure 1.4 Map of the Greater Taipei Area.
Danshuei Township is located on point A of the map.

Source Taiwan Map Map Google Maps 24 Sept 2010 <<http://maps.google.ca/>>

Taipei City is located in the Taipei Basin in northern Taiwan and is bordered on the south by the Sindian River, and the Danshuei Township on the west (Fig. 1.4). The northern districts of Shihlin and Beitou extend north of the Keelung River and are bordered by Yangmingshan National Park.⁹ Because of its location in a valley, the city commonly experiences high temperatures and humidity during the summer months,¹⁰ a problem enhanced by the high population density and the use of air conditioning. Overpopulation has already had a very severe impact on Taiwan (Fig. 1.5), and it is shocking to see the cities that sprawl across almost the entire Western coast. There is lack of almost all large mammals, wild river fish, most birds and sea life, and a visitor easily notices the acrid smell in the air from exhaust burning, the hazy skies, the smelly water, and the lack of frost and mist in formerly forested areas. According to Wikipedia, the population in Taiwan was estimated in June 2009 at

⁹ "Taiwan " *Cities of the World*. 2002. *Encyclopedia.com*. 13 Sept. 2010
<<http://www.encyclopedia.com>>.

¹⁰ "Taiwan."

23,063,027 people, spread across a total land area of 35,980 square kilometres,¹¹ making it the fifteenth most densely populated place in the world, with a population density of 635 people per square kilometre. Out of the total population in Taiwan, 2,620,693 are located in Taipei City,¹² and as 70 per cent of Taiwanese live in large cities, population density is even worse within these areas. In Taiwanese cities, such as Taipei City, population density is 2,605 people per square kilometre.

Figure 1.5 Image of overcrowded Taipei City

Source: *Taipei_2*.
Photograph. Taipei.
Funver.com 11 Dec. 2010.
<http://funver.com/images/stories/environment/taipei/taipei_2.jpg>.

¹¹ "Demographics of Taiwan." *Wikipedia, the Free Encyclopedia*. 2009. 13 Sept. 2010.
<http://en.wikipedia.org/wiki/Demographics_of_Taiwan>.

¹² "Demographics of Taiwan."

1.1.2. High Real Estate Prices and a Poor Quality Living Environment:

Figure 1.6 of the recent housing price increase in Taipei City from 2005 to 2009.

Source: You, Zhongxin
MyGo Real Estate
MyGo.com 12 Dec
2009 08 Nov 2010
<[http://tw.mygo.com/index.php?c=](http://tw.mygo.com/index.php?c=post)
=post>

According to news reports on Taipei Times website, Taiwan currently faces a housing crisis; real estate speculation has raised prices to a level which puts home ownership out of reach for an estimated 21% of the population, and homelessness has become common in the cities.¹³ In working-class neighbourhoods and rural areas, housing is generally of poor quality, and even urban middle-class housing often has antiquated plumbing. In other rapid-growth Asian areas, such as Singapore and Hong Kong, the governments have invested heavily in ensuring everyone has access to decent shelter;¹⁴ the ruling party on Taiwan, in contrast, seems to have no policy in the area of housing. According to research done by United Daily News (Taiwan), the average selling price for pre-sold new apartment units in Taipei City is reaching \$NT601,000 (\$19,908 CAD) per ping (3.3 square meter), which is calculated to be about \$561 CAD per square foot.¹⁵ (Fig. 1.6) With a 2010 GDP per capita

¹³ Cohen, Marc J. "Chapter 8: Social Issues." *The Unknown Taiwan*. Washington, D.C.: North American Taiwanese Women's Association, 1992. Professor Chen Wen-Chen's Memorial Foundation. 23 Aug. 2010. 20 Sept. 2010. <http://www.cwcmf.net/Taiwan/html/chap8_social.html>.

¹⁴ Cohen Chapter 8.

estimated to be \$18,304 USD, it is nearly impossible for a normal household to acquire a home of decent size and in good condition in Taipei City.¹⁶

¹⁵ Lai, Zhongxin. "Weekly Observation." *CNCCU - Xinyi Center for Real Estate*. 30 Nov. 2010. 1 Dec. 2010. <<http://www.ncscre.nccu.edu.tw/research/20101130comment.pdf>>.

¹⁶ "Taiwan GDP Data & Country Report." *Global Finance - The Best Banks | 192 Country Reports | GDP Data*. 2010. 13 Sept. 2010. <<http://www.gfmag.com/gdp-data-country-reports/166-taiwan-gdp-country-report.html#axzz1GUiZRTDj>>.

1.1.3. Disruption in the Social and Economic Order:

Perhaps the biggest social problem facing Taiwan today is the strain caused by moving from an agrarian to an industrial society in just 45 years.¹⁷ Traditional values of family and community have broken down in favour of a materialist, "get rich instantly" mentality, and the island now faces rising levels of violent crime, drug addiction, alcoholism, suicides, child molestation, and juvenile delinquency.¹⁸

¹⁷ Cohen, Marc J. "Chapter 8: Social Issues." *The Unknown Taiwan*. Washington, D.C.: North American Taiwanese Women's Association, 1992. *Professor Chen Wen-Chen's Memorial Foundation*. 23 Aug. 2010. 20 Sept. 2010. <http://www.cwcmf.net/Taiwan/html/chap8_social.html>.

¹⁸ Cohen Chapter 8.

1.1.4. Transportation:

The transportation infrastructure in Taipei City, such as rates of car ownership and the area covered by the public transit system, is fairly advanced.

According to research done by the Taipei City government, the car ownership rate in Taipei City is at 258 vehicles per thousand people, well above the world average.¹⁹

¹⁹ Shi, Qinlan. "Urban Planning." *Taipei City Bureau of Urban Development*. 20 Jan. 2010. 13 Sept. 2010. <<http://www.udd.taipei.gov.tw/pages/detail.aspx?Node=111&Page=1165&Index=6>>.

1.2. Architect's Proposal: A feasible alternative via village living

Looking back to Taiwan's development, from the early days of production to the recent land developments, the countryside has either been ravaged or has slowly vanished, with an economic focused brought to the social system. The recent issues, pertaining to the global climate change and environmental deterioration, prompt people to start thinking about the preservation of land that we all live in, and to differentiate between surviving and living. My concept is to create beautiful village living for city dwellers, who are stuck with a dysfunctional city setting, due to the limited living space that Taipei City.

The village living is build on the promise that sustainability combining life, production, ecology, environment and healthy recreational farm lands will promote the modernization of agricultural life. These housing areas outside of the city parameters will offer more open spaces that are closer to "nature." The lands are substantially more affordable and property taxes are reasonable in comparison to Taipei City. Consumer patterns would shift as citizens' purchasing power would become stronger and the lower-cost countryside home would become more affordable to a wider range of families. Once the move to the countryside is made, families would also need to purchase household products that they did not need when they were living in the metropolitan area, such as lawnmowers, which would increase consumer power and indirectly increase the number of job opportunities in the areas. It is hoped that the agriculture land will provide a comprehensive "life" with "recreational" functionality to its dwellers, which are unavailable in the city setting.

1.3. Site Selection: Agricultural Land and Policy in Taiwan

Location:

Taiwan is more than 75% of mountainous terrain. The greater Taipei area, consisting of Taipei City and Taipei County, is north of Hsinchu, Taichung, Tainan and Kaohsiung. (Fig. 1.7) Taipei County is located in northern Taiwan, and it surrounds Taipei; the area borders Yilan to its east, Keelung on the north and Taoyuan on the south. Taipei County is due to become a direct-controlled municipality named Greater Taipei city on December 25, 2010, which is now the most populous city in Taiwan.²⁰ Travelling from these surrounding places to Taipei City takes from 40 minutes to a little more than one hour, so for the purpose of this thesis, I choose the agricultural land on Dansheui mountain, Dansheui Township, a 50 minute/20 km commute to Taipei City centre by car, which is faster by public transit like the Taipei Rapid Transit System.

Figure 1.7 Map of Taiwan.

Source: "Taiwan Map – Taiwan Maps for Taipei, Kaohsiung, Taichung, Tainan with Travel, Tour & Hotel Guides." Map. *Orientaltravel*. 08 Nov. 2010.
<http://www.orientaltravel.com/Taiwan_map.htm>.

²⁰ "Taiwan." *Cities of the World*. 2002. *Encyclopedia.com*. 13 Sept. 2010
<<http://www.encyclopedia.com>>.

Transportation:

Figure 1.8 Taipei Rapid Transit System

Source: "Taiwan Subway Map: MRT Sketch." Map. *Travel China Guide*. 08 Nov. 2010.
<<http://www.travelchinaguide.com/map/taipei/>>.

The greater Taipei area is served by Taipei Rapid Transit System through the Banqiao Station. The Taipei Rapid Transit System's Yilan Line runs through Gongliao, Shuangxi and Ruifang, while the Western Line runs through Xizhi, Banqiao, Shulin and Yingge. The Pingxi Line connects Pingxi to Ruifang. The Taipei Rapid Transit System serves the area through the Danshui Line in Danshui, the Zhonghe Line in Yonghe and Zhonghe, the Luzhou Line in Sanchong and Luzhou, the Xindian Line in Xindian, and the Bannan Line from Banqiao on out.²¹ (Fig. 1.8) There are also

²¹ "New Taipei." *Wikipedia, the Free Encyclopedia*. 10 Nov. 2010. 17 Nov. 2010.
<http://en.wikipedia.org/wiki/New_Taipei>.

countless bus routes travelling from Taipei County to Taipei City. Basically, the public transportation system is very well developed between the suburbs and the city, providing all the transit choices people who need to commute to work in Taipei City might need.

Competitive Price:

According to several real estate websites, the market price for farmland in Taipei county, where the suburbs of Taipei City are located, ranges from \$NT 8,000 to 20,000 per ping, which is equal to \$81 to \$202 CAD per square meter,²² depending on the location and environment. The building cost on a house envelope is normally estimated at \$1010 CAD per square metre, which makes the combined cost per square metre to \$1091 to \$1212 CAD square metre. Compared to a shocking average of \$NT 601,000 per ping or \$6071 CAD per square metre (Fig. 1.9), which is the price for new housing in Taipei City, farmland in the suburban areas is more than affordable (only one sixth of Taipei City apartment) for a upper middle class household. For the purpose of this project, I choose the agricultural land in Danshuei Township with a price of \$NT 8,000 per ping,²³ which brings the total budget for the agricultural land purchase for this project to \$NT 6,000,000 (\$193,500 CAD) for 2,500 square metres, or 750 ping.

Figure 1.9 Statistical graph of average Taipei house prices in the past three years.

Source: Hsu, Jiajia. "Need to Put a Stop to the Soaring House Price." *Money Udn* 29 Oct. 2009. 08 Jan. 2011.
<http://money.udn.com/house/storypage.jsp?f_ART_ID=197759>.

²² Lai, Zhongxin. "Weekly Observation." *CNCCU - Xinyi Center for Real Estate*. 30 Nov. 2010. 1 Dec. 2010. <<http://www.ncscre.nccu.edu.tw/research/20101130comment.pdf>>.

²³ Lai.

Zoning Policy:

According to the Taiwan Agricultural Land Regulation Information System, there are several regulations regarding purchasing agricultural land with the intention to build a house on that land. I have chosen to list some of the most pertinent ones, which restrict the size of the land and the building area, below:

- 1) Agricultural Development Act: Article 16: The farm land which will be built on has to be or greater than 0.25 hectares, equivalent to 2,500 square metres.²⁴
- 2) Agricultural Land and House Construction Methods Act: Since Jan. 28, 2000, anyone has the right to buy and sell farmland, as long as the owner continues to use the land for agricultural²⁵ purposes.²⁶
- 3) Agricultural Land and House Construction Methods Act: Construction Methods article 3: At least 90 % of the total area included in the application to build must be used for farming, growing plants, or as a green area.²⁷
- 4) Act of Implementation of Regional Planning and Construction Management Approach: Article 5: The ground floor of the building cannot exceed 330 square meters and the total square footage of the building cannot exceed 495 square meters; the basement, which is excluded from the total square footage, should be a projection of the ground level and the farmhouse cannot have more than three levels or exceed 10.50 meters in height.²⁸

Hence, for the purposes of my thesis design, the building area is going to be 250 square meters per floor.

²⁴ Council of Agriculture. "Agricultural Land and House-construction Policy." *Agricultural Land Regulation Information System*. 16 June 2004. 19 Nov. 2010. <<http://talis.coa.gov.tw/ALRIS/LawDetail.asp?tID=2006>>.

²⁵ The definition of "agricultural" in "agricultural purposes" can be expressed as land used to grow something; therefore, having landscaping on such land would satisfy the regulation.

²⁶ Council of Agriculture.

²⁷ Council of Agriculture. "Agricultural Land and House-construction Policy." *Agricultural Land Regulation Information System*. 16 June 2004. 19 Nov. 2010. <<http://talis.coa.gov.tw/ALRIS/LawDetail.asp?tID=2006>>.

²⁸ Council of Agriculture.

1.4. Advantages and Disadvantages of Suburbanization and Using Agricultural Land

Advantages:

As Taiwan has developed economically, from early agricultural production to today's capital development, the economic system has become more and more important to people and government, leading to a gradual reduction of agricultural land and destruction of rural environment. Issues like global climate change and degradation of environmental quality have now caused people to ponder the ways in which we can retain the natural form of our land. By moving outwards from the city and into farmland, we would decentralize the over-populated city and utilize idle farmlands among the area surrounding Taipei City. Approximately 209,000 hectares of Taiwan's farmland have been left idle, due to past government policies intended to discourage excessive farming and heavy use of fertilizer or pesticides that were said to have resulted in land becoming less arable.²⁹ Now, due to the price increases in agricultural land, as well as pollution, a new trend has emerged, in which farmers in Taipei County sell their idle lands for profit and move to the southern part of Taiwan, where it is less polluted and lands are substantially cheaper.

Figure 1.10 Rendering of a concept house in farmland.

Source: 2010. Photograph. *Gene21.com.tw*. 2010. 08 Jan. 2011. <<http://www.gene21.com.tw>>.

²⁹ "COA Reformulating Idle Farmland Strategy." *China Post Online - Taiwan, News, Breaking News, World News, and News from Taiwan*. 16 Feb. 2011. 1 Mar. 2011. <<http://www.chinapost.com.tw/taiwan/national/national-news/2011/02/16/291254/COA-reformulating.htm>>.

Living on the farmland in Taipei County would provide a transition in lifestyle for city dwellers, and present a quality living environment that cannot be compared to city living (Fig. 1.10). City dwellers, especially middle class households, would migrate from city to nature, returning architecture to its basics and changing modern men's needs in life through a balanced environment between nature and humanity, modern architecture that is functional, aesthetic and possesses rich cultural connotations, a spatial design that mixes sense and sensibility and a living unit that combines class and fashion, and features almost everything that living in a city cannot offer (Fig. 1.11).

Figure 1.11 Image illustrates a life style that cannot be offered in a city.

Source 2010 Photograph Gene21.com.tw 2010 08 Jan 2011 <<http://www.gene21.com.tw>>

Architects in a rural area are given more freedoms in designing the ideal house for clients, as they are constrained by fewer regulations regarding the exterior of the house than they would be in a residential zoning area. If this project were put into reality, many architects would be able to unleash their creativity and innovative houses would eventually spread over the mountain area. This would eventually beautify those lands – a piece of the mountain would become a giant piece of artwork.

Disadvantages:

Some might argue that using farmland in the Taipei County area would limit the amount of land available for agriculture; during the process of economic development, much farmland was urbanized or taken over by industry, and if more is taken, individual farmers would have even less land to work with than before. However, utilizing farmland around Taipei City in the Taipei County area can actually compensate for the negative effect the decrease of farmland has had.

According to a statistical report from the Taiwan Council of Agriculture, in 2009 there were a total of 636,363 farmers in Taipei City and Taipei County working in agriculture, live-stock production and forestry production. Farmers make up 6 % of the population in Taipei County, as compared to 20% of the population in the rest of Taiwan. Taipei City and Taipei County alone make up 44.78% of the total population in Taiwan (table 1.1).³⁰ The numbers demonstrate that the agricultural industry is flourishing in central and southern Taiwan, while northern Taiwan acts as the business and industrial centre.

Table 1.1 Overview of the North Branch of Agriculture: The Main Crop Cultivation and Production Statistics (Information from Taipei Crop Production Office)

北區分署農業概況

項目	農家戶數 (97年底) (戶) Farmer Household (2008)	農家人口數 (97年底) (人) Farmer population (2008)	總人口數 (97年底) (人) Total population(2008)	土地總面積 (98年底) (公頃) Land area (Ha)(2009)	耕地面積 (98年底) (公頃) Farmland (Ha)(2009)
基隆市	692	2,473	388,979	13,276	735
台北市 Taipei	6,518	24,666	2,622,923	27,180	3,311
台北縣 Taipei County	25,920	106,539	3,833,730	205,257	31,111
桃園縣	42,257	188,332	1,958,686	122,095	37,375
新竹縣	26,465	125,758	503,273	142,754	28,913
新竹市	4,912	22,512	405,371	10,415	2,497
苗栗縣	38,563	166,083	560,397	182,031	33,827
北區合計 Total	145,327	636,363	10,273,359	703,008	137,769
占全台比率 /Taiwan	19.42%	21.02%	44.78%	19.52%	16.89%
臺灣地區 Taiwan	748,276	3,027,627	22,942,706	3,600,814	815,462

Source: Crop Production Office

³⁰ Crop Production Office "Overview of the North Branch of Agriculture: The Main Crop Cultivation and Production Statistics." Council of Agriculture, North Branch of the Department of Agriculture and Food News. 11 Aug. 2010. 13 Mar. 2011. <http://www.tefd.gov.tw/Zh-tw/index.aspx?ModuleCode=ColumnShow&pm_id=fb326db795114aea94b491c79bb2fdd>.

Agriculture has become mechanized over the years in Taiwan; crops have undergone genetic modification and chemical fertilizers and insecticides are now applied,³¹ while farmers also benefit from weather forecasting. Thus, while there is now less farmland, productivity is higher. As the average farm size gets smaller, astute farmers invest in advanced technologies to improve productivity and produce various crops year-round.³² More importantly, the age of the workforce in rural villages has increased dramatically over the years,³³ as with low incomes in rural areas, many young people go to urban areas, Taipei City and Taipei County, to find job opportunities. The consequence of this trend is that the rural workforce is aging, which has caused some concern.

As a result, many farmlands in Taipei County are left idle. If my project is put into practise, farmers with idle lands or a lack of human resources could sell their lands to the projects' prospective clients and benefit from increased land prices, while the clients could enjoy a bigger property with a better environment.

³¹ "Chapter 9: Agriculture." *Understanding Taiwan Series*. National Institute for Compilation and Translation. 10 Jan. 2011. <<http://dic.nict.gov.tw/~taiwan/geography/geography-ch9.htm>>.

³² "Chapter 9: Agriculture."

³³ "Chapter 9: Agriculture."

1.5. Targeted Clients

According to the demographic statistics in Taipei City and Taipei County, the mean annual household income is \$NT 1,111,596 (CAD\$37,053)³⁴ and each of these households owns almost one property.³⁵ My targeted clients are households with an annual income of approximately \$NT 1,830,000, equivalent to \$60,396 CAD, which is one standard deviation (\$NT 719,192 - CAD\$23,970) above the mean.³⁶ According to the statistics, these households also own an average of 1.207 properties in Taipei city,³⁷ which means they have more than enough purchasing power for something like my project – a home which would be cheaper than where they are currently living, but exponentially better in quality and living environment. Statistics show that at least two members of the targeted household are employed, and there are four or more members in each household. Nearly 70% of both the male and female members have a high school education or higher, while more than 45% of the male members, and 35 % of the female members, have a college education or higher. For every 1.11 urban households in Taipei City, there are 0.67 households in the suburban areas of Taipei County.³⁸ This means that my targeted household ratio of living in Taipei City to Taipei County is roughly 10 to 6, which indicates that the educated middle class family, though preferring to live in the urban area, can easily be convinced to move to a suburban area (table 1.2).

³⁴ Chen, Chien-Liang, Chung-Ming Kuan, and Chu-Chia Lin. "Saving and Housing of Taiwanese Households: New Evidence from Quantile Regression Analyses." *Journal of Housing Economics* 16.2 (2007): 102-126.

³⁵ 0.85 property

³⁶ Chen, Kuan and Lin 116.

³⁷ Chen, Kuan and Lin 116.

³⁸ Chen, Kuan and Lin 116.

Table 1.2 General statistics of Taiwanese households

Table 1: General Statistics of the Household

variables	mean	std dev
Household incomes and savings (NT\$)		
total household incomes	1,111,596	719,192
total household savings	232,773	400,162
saving rate	0.163	0.252
log (per capita incomes)	19.496	0.538
predicted per capita income (permanent income)	19.496	0.400
Head and spouse's characteristics		
head age	46.616	14.033
spouse exist ^a	0.711	0.453
Male head schooling (%)		
elementary school	0.193	0.394
junior high school	0.155	0.362
high school	0.252	0.434
college and up	0.124	0.330
no schooling	reference	
Female head schooling (%)		
elementary school	0.217	0.412
junior high school	0.139	0.346
high school	0.256	0.437
college and up	0.082	0.275
no schooling	reference	
Household Characteristics		
total earner in the household	1.651	0.837
household size	3.569	1.687
urban	0.632	0.482
suburban	0.244	0.430
rural	reference	
Housing ownership		
own	0.850	0.357
rent	0.087	0.281
issued or borrow	reference	
sample size	13,800	

Note: a. intact couple = 1.

Source: SFIE 2000, authors calculated.

Source: Chen, Chien-Liang, Chung-Ming Kuan, and Chu-Chia Lin. "Saving and Housing of Taiwanese Households. New Evidence from Quantile Regression Analyses." *Journal of Housing Economics* 16.2 (2007): 116.

Aside from the demographic statistical reasons, I choose these households to be my targeted clientele because they are educated, live as a big family with 4 or more family members, and it is difficult for them to find homes in the city that have the size and function they need and desire. Most importantly, modern living in the metropolis has negative influences on the families; people have forgotten the meaning of traditional family values, and each family member treats their tiny city apartment more and more like a hotel room because there is no space for them to gather as a family (Fig. 1.12). Easy access and cheap meals from countless convenient stores in the city have made people ignore the importance of a family meal together. Because people cannot fully enjoy time at home with family, due to the insufficient size and condition of their apartments, more than often, they choose activities outside of their homes with friends and coworkers, which create distance between family members. By targeting the middle class or upper middle class household, which contains family members who know the importance of family values

Figure 1.12 View of overcrowded Taipei City.

Source: A Taipei Street. Photograph. Taipei. ErikHenne.com. By Erik Henne. 08 Mar. 2011.
<http://www.erikhenne.com/p_taiwan_taipei1.htm>

and with average or above average education, I wish to lead them to discover the true values of being a family with Chinese traditions, ideologies and cultures; I wish to influence them to reconsider the old ways of living – revive the tradition of living in a house, and with extended family, and finally, I wish to educate modern city dwellers about the important relationship between human and nature, that the land and house can tell a story that city apartments cannot, by building on farmland and using an innovative design which emphasizes ecology. Retired people are targeted potential clients. It is presumed that they are willing and able to relax and enjoy their retirement years gracefully. Consequently, it would be the best time they could be introduced to the village living concepts that my thesis is offering. Other targeted clients could be professionals, whose job description requires a more spatial setting that cannot be easily and cheaply attained in the city. Farm lands provide bigger and more functional spaces for various professionals, such as architects as artists, photographers and writers etc.

**Figure 1.13 Sample of one's dream house.
Douglas House by Richard Meier, at Harbor Springs,
Michigan, 1973**

Source Douglas House by Richard Meier Photograph Harbor Springs
CubeMe Modern Living, Architecture, Design and Technology 15 Feb
2008 08 Apr 2011 <<http://cubeme.com/blog/2008/02/15/douglas-house-by-richard-meier/>>

to fulfill their inspirational and creational needs. After seeing successful examples of this project, our potential clientele could easily understand the benefits of building a house on farmland, and they would see that they can save more money by choosing my project over real estate in the city. These benefits would attract more clients in a long run, while the project would also provide new and upcoming young architects the chance to create different and innovative houses (Fig. 1.13).

Chapter 2: Design Principles: Discovery, Inheritance and Innovation

In order to make Taipei City dwellers benefit from this project, economically, physically and emotionally, the design for this residential house, situated on this 16,909 square foot suburban farmland site, would bring together the traditional principles of Chinese ideology with contemporary architectural language. Traditional Chinese ideology and culture will be reinterpreted in the spatial layout, and as a recurring theme in all details, to create a new home as a lived-in art gallery, with natural materials and light as a backdrop to a magnificent collection of artefacts. Most importantly, this design will become a sanctuary where traditional family values and the old way of living will grow and blossom. (Fig. 2.1)

Figure 2. 1 Mandarin Palace in Shanghai, completed in 2004.

A sample of traditional Chinese architectural elements with contemporary architectural language.

Source *Mandarin Palace Shanghai* 2008 Photograph *Shanghai Kinpan com* 14 June 2008 08 Jan 2011
<http://admin.kinpan.com/html/Floor/337/37264/33373726477_1.html>

2.1. Discovery: Chinese Tradition, Ideology and Culture Reflected in Architecture

Chinese architecture, continuous yet complete, is an important component of Chinese culture. During its five-thousand-year historical development, Chinese architecture was imprinted with traditional Chinese ideology, meaning that it reflects strong ethnic characteristics in the selection and treatment of material, structure, layout, space and environment.

Figure 2.2 Earth Building in Fujian China: a type of Chinese rural dwellings in the mountainous areas of southeastern Fujian, China, mostly built between the 12th and the 20th centuries.

Source: *Fujian Earth Building*. 2009. Photograph. Fujian. *Huaxia*. 8 June 2009. 08 Jan. 2011.
<<http://big5.huaxia.com/zt/zhwh/09-034/1453830.html>>.

Chinese traditional architecture contains rich cultural connotations, especially in residential buildings. For example, the courtyard house in Beijing, hall apartments in the south of the Yangtze River, the three-in-one image wall in Yunnan, the five courtyards in Sitai, "all water into hall" in Anhui, and the Earth Building in Fujian - at the core of all of these is a courtyard. (Fig. 2.2) In concept, a Chinese residential house should be "connecting the heaven and the earth". People are able to establish priorities among the rooms, which reflect the traditional family, ethics and morals. With different types of elements, such

as corridors or garden courtyards, houses become more rich in content and vivid. The current construction of residential buildings in Taiwan focuses only on the functional requirements – Chinese traditional ideology is neglected.

Chinese architecture, whether it is magnificent palaces, solemn temples, tranquil gardens, or colourful houses, with its unique language throughout its history, has been marked by traditional Chinese culture and expresses a rich and profound Chinese traditional ideology.

2.1.1 Confucianism

Doctrine of the Mean

The “doctrine of the mean” is an important and integral part of Confucianism, which for a long time occupied a dominant position in Chinese history, starting with the Western Han dynasty, exerting a great influence on the development of cultural thought in later ages, including the principle of conduct and behaviour and the construction of the social structure. In fact, the Doctrine of the Mean embodies the rich wisdom of dialectics, such as the harmony of differences – finding the balances among differences, holding on to the middle and justice – as well as trying to pursue the middle and getting rid of the extremes, and maintaining the position of the perfect mean according to the conditions.

The “Doctrine of the Mean” is a fundamental philosophy to Chinese people. “Mean” is later interpreted as adequacy and appropriate. When ancient Chinese talked about astronomy, geography, and humanity, they could not leave out the “mean” and according to this philosophy, heaven, earth, and the relations between people must use the “mean” as the standard, an approach which is called “the harmony of man with nature”.³⁹

66. ³⁹ Fei, Xiaotong. *From the Soil: the Foundations of Chinese Society*. Berkeley: Univ. of California, 1992.

Left:
Figure 2.3 A symmetrical, homogeneous layout of a Siheyuan.
Source: Lo, Yu-Ngok. "AIArchitect. Siheyuan and Hutongs - Beijing's Courtyard Houses." *Hothouse Coldhouse* 19 Nov 2010 08 Jan. 2011.
<<http://hothousecoldhouse.blogspot.com/2010/11/aiarchitect-siheyuan-and-hutongs.html>>

Above:
Figure 2.4 An eight kilometre-long central axis starting from the south to north in the Forbidden City

Source: "The Forbidden City as Depicted in a Traditional Ming Dynasty Painting." *Free Pictures of Everything on Earth -- Ookaboo*. 08 Jan. 2011.
<http://ookaboo.com/o/pictures/picture/1473128/The_Forbidden_City_as_depicted_in_a_traditional_ming_dynasty_painting>

The "doctrine of the mean" concept is embodied in the ancient architecture, with the symmetrical, homogeneous layout of a building (Fig. 2.3). The layout must have a main north-south axis, which acts as a central nervous system. This pattern exists in many ancient Chinese buildings, such as palaces, police buildings, temples, ancestral halls, and colleges. Although the concept of an axis of symmetry began as early as the Zhou Dynasty, the most well-known representatives are the Forbidden City and

palaces from Ming and Qing Dynasties.⁴⁰ There was an eight kilometre-long central axis starting from the south to north in the Forbidden City in Ming and Qing Dynasty Beijing⁴¹ (Fig. 2.4), which had the southern Yongding Gate as a starting point and ended at the north of the Bell and Drum Tower Di'anmen. The central axis went across numerous piles of building space, one climax after another in an ordered sequence. In addition, the central axis and the idea of this division of space were also reflected in the Beijing Courtyard house in general.⁴²

⁴⁰ Li, Yunhe. 華夏意匠-中國古典建築設計原理分析[Chinese Artistic Conception - Design Principles of Chinese Classical Architecture]. Taipei: Long Tian Publication, 1982. 143.

⁴¹ Li 149.

⁴² Li 148.

“The Harmony of Man with Nature”

“The harmony of man with nature”⁴³ in Chinese architecture is reflected by the lack of extremely tall or big architecture. In both the imperial palace and traditional house, development of a building has occurred on the flat direction: constituted by a single courtyard and then surrounded by the courtyard buildings, forming a continuous feeling of stretching on the earth. (Fig. 2.5) The concept of “harmony of man with nature” can also be reflected in the ancient Chinese settlement site. Ancient settlement construction respects and conforms to the natural environment first, and then rationalizes the living space according to the land resources. It not only shows respect for the environment, and rational use the land, but is also an eco-friendly approach which protects the environment. According to Xunzi,⁴⁴ the controlled use of water resources is the only way to ensure the continuous existence and long-term use of water, which is long-term living in “harmony of man with nature”.⁴⁵

Figure 2.5 Courtyard complex forms a continuous feeling of stretching on earth.

Source: Siheyuan. Photograph. Beijing. Qumanyou. 08 Jan. 2011.
<<http://www.qumanyou.com/hoteltype/21.html>>.

⁴³ Li, Yunhe. 華夏意匠-中國古典建築設計原理分析[Chinese Artistic Conception - Design Principles of Chinese Classical Architecture]. Taipei: Long Tian Publication, 1982. 306.

⁴⁴ Xunzi: a Chinese Confucian philosopher who lived during the Warring States Period.

Reinterpretation of “the harmony of man with nature” on bonsai

The art of training “artistic potted plants” in China dates back some seventeen hundred years to Song and Tang Dynasties; from then on, it increased in popularity and flourished during Ming and Qing Dynasties.⁴⁶ Bonsai cultivation became the favourite hobby of poets and men of the leisure class. During the last century the Japanese have studied and developed artistic potted plants, and made remarkable progress in bonsai.

The ideology of “harmony of man with nature” is concentrated in the pot and plant. The concept of nature can be fully expressed in bonsai and one can observe seasonal changes in this miniature of nature. Bonsai is an epitome of nature, and its creation requires a highly imaginative mind backed by knowledge and experience in training the plants. In order to produce an exquisite work of art in the form of a potted plant, one has to put in a lot of patient, hard work and also possess knowledge of horticulture and literary taste. Nature endows each species of a plant with special qualities, as regards its flowers, foliage, branches and fruit. One cannot apply the age-old strength of the pine or the cypress to the delicate beauty of the orchid or bamboo.⁴⁷ One must be able to grasp the unique qualities of each variety and in the process of dwarfing retain its good points and discard the bad. This way, the good part of nature is captured and the poor part is discarded; the nature is mimicked in a human way of thinking: bonsai is a living art.

Bonsai art has three aspects which can be appreciated individually: scene, image and structure,⁴⁸ much in the same way as architecture.

⁴⁵ Machle, Edward J. *Nature and Heaven in the Xunzi - A Study of Tian Lun*. Albany: State University of New York, 1993. 4.

⁴⁶ Wu, Yee-sun. *Man Lung Garden Artistic Pot Plants*. Hong Kong: Wing Lung Bank, 1969. 15.

⁴⁷ Wu 15.

⁴⁸ Yashiroda, Kan. "Dwarfed Potted Trees or Bonsai." *Handbook on Dwarfed Potted Trees: the Bonsai of Japan*. Brooklyn, NY: Brooklyn Botanic Garden, 1984. 5.

Scene

Successful bonsai art should bring scenes of nature to people's mind and enrich them. The most prized proportions mimic those of a full-grown tree in nature as closely as possible. Small trees with large leaves or needles are out of proportion and are avoided, as is a thin trunk with thick branches.⁴⁹ Therefore, viewers can feel the pulse of nature indoors.

Image

Image in bonsai is the emotion from a natural form. A beautiful image from a bonsai work should contain beauty in space and layering, a harmonic balance between the sparseness and density in branches and leaves.

Different styles of Bonsai art bring different images and emotions to people. There are hidden feelings within each Bonsai artwork waiting to be discovered by its observer after careful examination and pondering.

(1) Formal Upright: this is the most common and basic form of the bonsai. When fully matured, the Formal Upright will be a dwarf tree that is somewhat rounded and has a nice balance and form.⁵⁰ (Fig. 2.6)

Figure 2.6 A Formal Upright style bonsai.

Source Photograph *Bonsai Bark | Promoting and Expanding the Bonsai Universe* By Wayne 22 Jan 2010 02 Apr 2011
<<http://bonsaibark.com/2010/01/22/support-the-national-bonsai-foundation/>>

⁴⁹ Yashiroda, Kan. "Dwarfed Potted Trees or Bonsai." *Handbook on Dwarfed Potted Trees: the Bonsai of Japan*. Brooklyn, NY: Brooklyn Botanic Garden, 1984. 5.

⁵⁰ Yashiroda, Kan. "For Bonsai Beginners." *Handbook on Dwarfed Potted Trees: the Bonsai of Japan*. Brooklyn, NY: Brooklyn Botanic Garden, 1984. 28.

(2) Informal Upright: this form of bonsai tree is very similar to the more common Formal Upright, with a single, but noteworthy, difference. Its top branch does not extend upright as is the case with the top branch in the Formal Upright. Instead, it simply bends forward, giving the finished tree a decidedly different but still very interesting look.⁵¹ (Fig. 2.7)

Figure 2.7 An Informal Upright style bonsai.

Source: *Bonsai Styles Inc Pictures of Informal Upright Style, Slanting Bonsai, Cascade Bonsai Style, Bonsai Group, Literati Bonsai & Wind Swept Bonsai Style*. Photograph. *Bonsai Plants - Dedicated to Growing Bonsai Trees and Other Bonsai Plants*. 1 Apr. 2011. <http://bonsaiplants.org.uk/bonsai_styles.htm>.

(3) Slant: this member of the bonsai family of midget trees has a unique look that is different from the other bonsais. The interesting aspect of this tree is that it slants in one direction while its lower branch reaches out in the other direction. When fully matured, it looks balanced and not lopsided.⁵² (Fig. 2.8)

Figure 2.8 A Slant style bonsai.

Source: *Bonsai Styles Inc Pictures of Informal Upright Style, Slanting Bonsai, Cascade Bonsai Style, Bonsai Group, Literati Bonsai & Wind Swept Bonsai Style*. Photograph. *Bonsai Plants - Dedicated to Growing Bonsai Trees and Other Bonsai Plants*. 1 Apr. 2011. <http://bonsaiplants.org.uk/bonsai_styles.htm>.

⁵¹ Yashiroda, Kan. "For Bonsai Beginners." *Handbook on Dwarfed Potted Trees: the Bonsai of Japan*. Brooklyn, NY: Brooklyn Botanic Garden, 1984. 28.

⁵² Yashiroda 29.

- (4) **Cascade:** in this manifestation, the tree has a sloping effect that occurs because the trunk grows vertically and then turns, allowing the branches to extend below the surface of the tray or container, a result that creates a “cascading effect.” It’s distinctive, unique and very unusual.⁵³ (Fig. 2.9)

Figure 2.9 A Cascade style bonsai.

Source: "Pakistan's First Gardening Forum View Topic - Annual Spring Flower Show Lahore 2010." *Pakistan's First Gardening Forum: Index*. 29 Apr. 2010. Web. 2 Apr. 2011.
<<http://pakgardening.iforums.us/vp325.html>>.

- (5) **Semi Cascade:** this near-twin to the Cascade-style Bonsai is different in only one way – its trunk slopes gradually.⁵⁴ (Fig. 2.10)

Figure 2.10 A Semi Cascade style bonsai.

Source: *Tree Details - Semi Cascade White Pine*. 2006. Photograph. *Artistic Bonsai Circle - Home Page*. 2006. 2 Apr. 2011.
<<http://www.artisticbonsaicircle.co.uk/e025td.htm>>.

⁵³ Yashiroda, Kan. "For Bonsai Beginners." *Handbook on Dwarfed Potted Trees: the Bonsai of Japan*. Brooklyn, NY: Brooklyn Botanic Garden, 1984. 29.

⁵⁴ Yashiroda 30.

A beautiful bonsai work can “touch” its observer not only by its image, by also by the emotion in the image. The emotion can be expressed in a subtle or strong way. For example, cascade and semi-cascade styles communicate with its observer in a strong tone. Without violating the principle of natural and intended deformation, they resemble trees standing at the edge of a cliff. The highest state in the art of bonsai is truth, goodness and beauty. People who appreciate the art gain creativity through the creation of bonsai art, which also enhances their aesthetic senses.

Structure

A bonsai needs to invite its viewers into the composition and lead them through it to some degree. This is true of all art. This must be done by through way that the bonsai structure is composed. If the finished bonsai work fails to address this important element of artistic composition, and has, for instance, a bloated trunk, no center of equilibrium, or imbalance, it will lack interest and have diminished appeal to most viewers (Fig. 2.11, 2.12).⁵⁵

Figure 2.11 This Japanese black pine has poor branch order. The left, left - right, right order (along with the other flaws this pine possesses) makes the composition uninteresting.

Rutledge, Andy "Artistic Foundations of Bonsai Design Chapter 4 " Andy Rutledge Home Portal Nov 2003 07 Mar 2011
<<http://www.andyrutledge.com/book/contents/towardart.htm>>

⁵⁵ Yashiroda, Kan. "Dwarfed Potted Trees or Bonsai." *Handbook on Dwarfed Potted Trees: the Bonsai of Japan*. Brooklyn, NY: Brooklyn Botanic Garden, 1984. 11.

Figure 2.12 Notice how the bar branch structure almost seems to cut the tree in half.

It makes an uncomfortable line that bisects the structure. Also, the left branch is unnaturally straight and too conspicuous among the other branches on this bonsai.

Rutledge, Andy Artistic Foundations of Bonsai Design Chapter 4 Andy Rutledge Home Portal Nov 2003 07 Mar 2011
<<http://www.andyrutledge.com/book/contents/towardart.htm>>

Finding the right balance among numerous things is also a concern in designing good architecture. Similar to bonsai, the "rule" is not what is important; what is important is the necessary aesthetic issue that the "rule" addresses. As an artist or an architect, one may find creative ways of addressing the issue - but, of course, not until one understands the issue. For example, I found that the cantilever in the renowned Fallingwater, by Wright, resembles the Semi Cascade style bonsai. (Fig. 2.13)

Figure 2.13 Semi Cascade style bonsai resembles the cantilever of Fallingwater.

Source Tree Details Semi Cascade White Pine 2006 Photograph Artistic Bonsai Circle Home Page 2006 2 Apr 2011
<<http://www.artisticbonsaiculture.co.uk/e025td.htm>> Avery 'Road Trip Fallingwater Stuff Avery Likes | unsolicited Opinions on Random Things 24 Apr 2010 Web 2 Apr 2011 <<http://www.stuffaverylikes.com/roadtripfallingwater/>>

The Unity of Order and Moral Character: “Benevolence” and “Rite”

Confucianism also expresses the idea that it is impossible to build a harmonious society without one exercising courtesy. Turning courtesy and rites into law was a distinguishing characteristic in ancient Chinese legal culture, and maintaining social status and order is one of the key elements in ancient Chinese “rites”.⁵⁶ In the “Book of Rites”,⁵⁷ the person who shows the rules of conduct brings order to the universe.⁵⁸ The reason that there are so many ritual elements in ancient Chinese buildings is to maintain the feudal hierarchy. This is expressed clearly in the “Book of Rites,” which puts emphasis on values like being loyal to the emperor, filial piety, being in harmony with brothers, homogeneous as whole, and the man and the wife having different jobs.⁵⁹ Chinese classical architecture has to fully meet these requirements in

Figure 2.14 Image shows the superior and inferior sides (north and south respectively) in a traditional Chinese courtyard house.

Source Siheyuan Photograph Beijing Qumanyou 08 Jan 2011
<<http://www.qumanyou.com/hoteltype/21.html>>

⁵⁶ Legge, James *Li Chi: Book of Rites*. Whitefish. Kessinger, 2003 10. Google Books. 14 Oct 2010.
<[http://books.google.ca/books?id=RdJpVSOJniAC&printsec=frontcover&dq=book of rites&hl=en&ei=DqJ9TfXcD4aMrQHU573TBQ&sa=X&oi=book_result&ct=book-preview-link&resnum=1&ved=OCCOQuwUwAA#v=onepage&q&f=false](http://books.google.ca/books?id=RdJpVSOJniAC&printsec=frontcover&dq=book+of+rites&hl=en&ei=DqJ9TfXcD4aMrQHU573TBQ&sa=X&oi=book_result&ct=book-preview-link&resnum=1&ved=OCCOQuwUwAA#v=onepage&q&f=false)>.

⁵⁷ Book of Rites: one of the Chinese Five Classics of the Confucian canon. It described the social forms, governmental system, and ancient/ceremonial rites of the Zhou Dynasty (c. 1050–256 BCE).

⁵⁸ Legge 383.

⁵⁹ Legge 385.

order to synchronize with the traditional behaviour pattern of social relationships between distant and close relatives, the young and old, and the inferior and superior. Therefore, the ancient Chinese architectural style tends to distinguish between conscious social statuses of people in order to maintain social order and class. (Fig. 2.14)

"Rites" are implemented in all business matters and building activities, as traditional Chinese architecture embodies the "rite" in the form of people's respect and worship of ancestors and God. Modesty, as a special character of Chinese traditional culture, is also shown in Ming furniture, while extreme modesty is shown in the subtle and minimal design details of Ming furniture. This is a subtle expression: the purpose in Chinese architecture is expressed implicitly and modestly. Confucianism bounds people, reflecting their introverted nature.

Courtyard Residences: Confucian Ideology in Residential Design

Confucian ideology was the core of feudal China's hierarchical social system. Traditional courtyard residences were strongly influenced by the hierarchical Confucianist code of conduct, which drew strict distinctions between interior and exterior, superior and inferior, and male and female.⁶⁰ The code was an institutionalized system of rules that governed all interpersonal relations in China's feudal society and whose basic function was to set up and maintain China's hierarchical social system. These courtyard compounds were a world apart, enclosed and isolated from the outside world, and served as material expressions of Confucian ideology. (Fig. 2.15 & 2.16)

In traditional Chinese architecture, the center was considered to be superior and the sides as inferior; the north was superior and the south inferior; the left was superior and the right

Figure 2.15 Wong's Compound
Chinese traditional courtyard compound in Jingsheng Town,
12 kilometers east of Lingshi County, Shanxi Province

Source Beijing Pingyao Taiyuan "China Travel Guide" 2 Apr 2011
<<http://www.travelchinaguide.com/package/beijingtour8.htm>>

Figure 2.16 Another image of Wong's Compound
Chinese traditional courtyard compound in Jingsheng Town,
12 kilometers east of Lingshi County, Shanxi Province

Source Beijing Pingyao Taiyuan "China Travel Guide" 2 Apr 2011
<<http://www.travelchinaguide.com/package/beijingtour8.htm>>

⁶⁰ Ou, Lei. "Analysis of Traditional Courtyard Space." *Sichuan Building Science* 31 5 (2005). 123.

inferior; and the front was superior and the back inferior.⁶¹ (Fig. 2.17)

Figure 2.17 Outdoor hierarchy of a courtyard:
red>orange>green

Source: Diagram by author

Figure 2.18 Indoor hierarchy of a courtyard:
red>orange>yellow>green

Source: Diagram by author

In courtyard residences, the north wing was the most desirable because it faced south and received the most sunlight. The center room of the north wing, as the most esteemed location, served as the living room or the ancestral hall.⁶² The grandparents occupied the east rooms of the north wing and the head of the family the west rooms. The east and west wings were the residences of the younger generation. The eldest son and his family lived in the east wing, and the younger sons and their families

⁶¹ Ou, Lei. "Analysis of Traditional Courtyard Space." *Sichuan Building Science* 31.5 (2005): 123.

⁶² "北平四合院住宅的組成與構造[Peking Composition and Structure of Residential Courtyard]." *中國建築史論文選輯第二冊[Selections of Chinese Architectural History Papers Book 2]*. Ed. Editorial Department. Taipei: Ming Wen, 1983. 1.

lived in the west wing. The south wing housed guest rooms, studies, kitchens, and storerooms.⁶³ (Fig. 2.18)

The main entrance and the public rooms in the south wing were usually divided from the inner courtyard by a wall and a decorative gate, isolating the inner chambers from outside intrusion.⁶⁴ Women were not allowed to leave the inner courtyard, and guests were not allowed to enter it. Larger compounds often had secondary courtyards and buildings that were used to house unmarried daughters, or for miscellaneous purposes.⁶⁵

The windows of the rooms all faced the inner courtyard. For privacy reasons and Feng Shui guidelines, screens walls were placed inside the main gate and doors, to block the view from the outside. Life inside the courtyard was a self-contained world that emphasized the differences in status between the elder and younger generations, elder and younger sons, and men and women. These dwellings embodied the patriarchal, hierarchal organization of feudal Chinese society.

⁶³ "北平四合院住宅的組成與構造[Peking Composition and Structure of Residential Courtyard]" 1.

⁶⁴ Li, Yunhe. 華夏意匠-中國古典建築設計原理分析[Chinese Artistic Conception - Design Principles of Chinese Classical Architecture]. Taipei: Long Tian Publication, 1982. 85.

⁶⁵ Li 84.

2.1.2. Taoism

Referring to a variety of related philosophical and religious tradition that influenced China, Taoism literally means “path” or “way”, which carries more abstract and spiritual meanings in folk religion and Chinese philosophy. Taoist thought generally focuses on nature, the relationship between humanity and the cosmos, health and longevity, and action through inaction. Harmony with the universe, which is the source of Tao, is the intended result of most Taoist rules and practices. Taoist beliefs relate to the symbology of the Tai-Chi (YinYang symbol)⁶⁶, and the notion of wu-wei (action through inaction) which seek to counterbalance Yin with Yang at every opportunity. In general, Taoists believe in embodiment and pragmatism, engaging in practices to actualize the natural order within themselves. Taoist theology emphasizes various themes found in the Daodejing⁶⁷ and Zhuangzi⁶⁸, such as naturalness, vitality, peace, action through inaction, flexibility, spontaneity, and the relativism of human ways of life.⁶⁹

⁶⁶ Yinyang describe how polar or seemingly contrary forces are interconnected and interdependent in the natural world, and how they give rise to each other in turn. Opposites thus only exist in relation to each other.

SOURCE: http://en.wikipedia.org/wiki/Yin_and_yang

⁶⁷ Daodejing is widely regarded to be the most influential Taoist text. The title means "The Classic of the Way and Its Power or Virtue". It is a foundational scripture of central importance in Taoism purportedly written by Lao Zi sometime in the 3rd or 4th centuries BCE.

SOURCE: <http://en.wikipedia.org/wiki/Taoism>

⁶⁸ Zhuangzi is traditionally attributed to a Taoist sage of the same name. It contains prose, poetry, humour and disputation.

SOURCE: <http://en.wikipedia.org/wiki/Taoism>

⁶⁹ "Taoism." *Stanford Encyclopedia of Philosophy*. 28 June 2007. 05 Mar. 2011.
<<http://plato.stanford.edu/entries/taoism/>>.

Confucianist Interior and Taoist Exterior

Chinese philosophical traditions also played an important role in moulding and regulating Chinese architecture and landscaping. Two major philosophies, Confucianism and Taoism, both influenced Chinese traditional architecture. Originating in ancient China, each made important contributions to Chinese architecture and Chinese garden art. Confucianism, as the art of the living, regulated traditional Chinese living in the ancient days, contributing to the characteristics of Chinese architecture, while Taoism, as the law of the nature, emphasized naturalness and vitality, and is regarded as the main principle in Chinese gardening and landscape. There was a saying that “a Chinese is a Confucianist when he is inside the building; but a Chinese is a Taoist when he enters the garden”.⁷⁰ (Fig. 2.19)

Figure 2.19 A sample of traditional Chinese garden: Lion Grove Garden in Suzhou Gardens, China

Source: Lion Grove Garden Photo. Photograph. Suzhou. China Vacations, China Vacation Packages, Cheap China Vacation. 1 Apr. 2011.
<<http://www.chinavacations.biz/suzhou/lion-grove-garden.html>>.

Confucianism is conducive to the rulers, but it binds human nature and might not be able to meet people's spiritual needs. Therefore, although the appearance of ancient architecture in China is solemnly majestic, and works according to the ethical

⁷⁰ Li, Yunhe. 華夏意匠-中國古典建築設計原理分析[Chinese Artistic Conception - Design Principles of Chinese Classical Architecture]. Taipei: Long Tian Publication, 1982. 306.

system, with gardens generally located at the rear of the building, architectural elements emerge in a more poetic and natural setting often expressed by Chinese poems and paintings (Fig. 2.20). There are two completely different worlds inside and outside, reflecting Chinese people's view of life – Confucianism within Taoism. The architectural pattern of the building's exterior, garden and landscape coincides with Taoist ideology such as naturalness, vitality and flexibility. Ancient Chinese architectural features, such as the cantilevered corner beam, wing butt rafter and cantilever eaves rafter emerged from here.⁷¹ The weight created by the curb construction is lost so the structure becomes lighter; this is in line with the idea of vitality present in Taoism. Taoist beliefs became widely spread around the 5th century, at the same time that traditional Chinese gardens became popular.⁷² Consequently, Taoist legends had a substantial influence on garden design.

Figure 2.20 Chinese painting depicting an ideal state favoured in Chinese gardens.

Source Li, Andie 'Traditional Chinese Painting –landscape'
DU Portfolio 7 Apr 2009 2 Apr 2011

<https://portfolio.du.edu/pc/port_detail?id=134366>

⁷¹ Li, Yunhe. 華夏意匠-中國古典建築設計原理分析[Chinese Artistic Conception - Design Principles of Chinese Classical Architecture]. Taipei: Long Tian Publication, 1982. 306.

⁷² Li 309.

"One water, Three Mountains": Taoist Legend in Garden Design

According to a Taoist legend, it is believed that people can become immortal by visiting Mt. Penglai, Mt. Fangzhang, and Mt. Yingzhou, the three sacred mountains of the Eastern Sea.⁷³

The quest for health and longevity was a major focus of Taoism during the period when Chinese gardens were first being developed. Based on the legend of the three sacred mountains of the Eastern Sea, many gardens were designed to include three islands in water, a design which was known as "one water, three mountains".⁷⁴ (Fig. 2.21)

Figure 2. 21 Kunming Lake: the central lake on the grounds of the Summer Palace in Beijing, China.

Source "Kunming Lake in Summer Palace" *Beijing Hutong Tour* Web 2 Apr 2011
<http://www.beijinghutongtour.com/hutong_tours/classic_hutong_tour_summer_palace/>

For example, the Summer Palace in Beijing built around Kunming Lake contains three islands in the lake, each with a pavilion (Fig. 2.22). Fuhai Lake in Yuan Ming Yuan also

⁷³ "輕妝淡抹 引人入勝-圓明園福海景區[Yuanmingyuan Fuhai Area]." *中國建築史論文選輯第二冊* [Selections of Chinese Architectural History Papers, Book 2]. Ed. Editorial Department. Taipei: Ming Wen, 1983. 393.

⁷⁴ "輕妝淡抹 引人入勝-圓明園福海景區[Yuanmingyuan Fuhai Area]" 394.

had three artificial islands representing the three mountains from the legend (Fig. 2.23). These gardens were meant to provide not only beautiful material surroundings, but also spiritual environments for the visitor to seeking enlightenment.

Right:

Figure 2.22 Plan of Kunming Lake: three islands in the lake.

Source: "輕妝淡抹 引人入勝-圓明園福海景區[Yuanmingyuan Fuhai Area]." *中國建築史論文選輯第二冊*[Selections of Chinese Architectural History Papers, Book 2]. Ed. Editorial Department. Taipei: Ming Wen, 1983. 394.

Left:

Figure 2.23 Fuhai Lake in Yuan Ming Yuan, Beijing. There are three islands in the middle of the lake.

Source: "輕妝淡抹 引人入勝-圓明園福海景區[Yuanmingyuan Fuhai Area]." *中國建築史論文選輯第二冊*[Selections of Chinese Architectural History Papers, Book 2]. Ed. Editorial Department. Taipei: Ming Wen, 1983. 376.

2.1.3. Feng Shui

Feng shui, a product of Taoism, was widely used to orient buildings in ancient China. If medicine regulates human body, then the application of Feng Shui in architecture adjusts environmental information to improve human life. Different structures, materials or colors can produce a variety of energies, which interferes with human health and psychology and causes mood disturbances and damage. This is ultimately detrimental to one's career and family; therefore, Feng Shui adjustments could be provided as a personal preference to improve one's life.

In the modern scientific sense, ecological architecture pays attention to the relationship between man and architectural nature; Feng Shui, with its "Heaven (nature) and Man" cosmology, is fundamentally the same. According to Feng Shui from the most influential Feng Shui book, "House by the Yellow Emperor", nature is the origin of everything, so one should obey it and conserve it instead of wasting its resource and destroying it.⁷⁵ Men are an integral part of nature: men shall not act in a manner contrary to Heaven (nature), nor shall they start a war against nature.⁷⁶ One of the fundamental behaviours necessary for human survival is managing their living environment, home. Therefore, for the purpose of this thesis, Feng Shui guidelines are selected due to their psychological sense, and also for

Figure 2.24 Building site that follows the Feng Shui guidelines.

Source: Knapp, Ronald G., 2000, *China's Old Dwellings*, University of Hawaii Press, Honolulu.

⁷⁵ Zhang, Shureng. 黄帝宅经: 风水心得[House by the Yellow Emperor: Feng Shui Tips]. China: Unity, 2009. ISBN: 9787802147386. Sohu Book. 20 Jan. 2011. <<http://lz.book.sohu.com/serialize-id-14292.html>>.

⁷⁶ Zhang.

their relationship between man and architectural nature. Feng Shui guidelines without a rational foundation will not be discussed and used in this thesis (Fig. 2.24).

Feng Shui, in accordance with the ancient Chinese Yin and Yang (Tai Chi) or the Eight Trigrams⁷⁷, is used to plan living environments (Fig. 2.25). Characterized by a belief in Heaven or induction into Heaven, Feng Shui depicts remarkable characters of ancient Chinese architecture. The palace, temple and other major buildings, concentrated city buildings and scattered rural houses, all often reveal a cosmological pattern and reflect doctrines of orientation guided by Feng Shui. Feng Shui, which developed and matured in ancient times, despite the lag in science and restrictions in materials and technology, still seeks temperance and harmony with nature, and pursues the coordination and cooperation between man and nature. It could be defined as the theory of ecological architecture dominant in ancient China.

Looking at the aesthetic relationship between humans and environment, one can find ecological demands and aesthetic needs

Figure 2.25 Tai-Chi and Eight Trigrams

Source: "Eight Trigram." *Hanyu Iciba*. 2009. 02 Apr. 2011.
<<http://hanyu.iciba.com/wiki/362413.shtml>>.

⁷⁷ Eight Trigrams: eight diagrams used in Taoist cosmology to represent the fundamental principles of reality, seen as a range of eight interrelated concepts. Each consists of three lines, each line either "broken" or "unbroken," representing Yin or Yang, respectively.
SOURCE: http://en.wikipedia.org/wiki/Ba_gua

within the ancient Chinese concept of Feng Shui concept. The pursuit of beauty in both ecological and architectural senses is closely related to oriental people's culturally specific demands for aesthetic beauty in their living environment. The ecological concepts and aesthetic concepts embodied in Feng Shui are significant reference in establishing the harmony between humans and nature or humans and society, and in developing new residential settlement patterns.⁷⁸

⁷⁸ Zhang, Shureng. 黄帝宅经: 风水心得[House by the Yellow Emperor: Feng Shui Tips]. China: Unity, 2009. ISBN: 9787802147386. Sohu Book. Web. 20 Jan. 2011. <<http://lz.book.sohu.com/serialize-id-14292.html>>.

Suzhou Gardens: Feng Shui in Residential Design

According to Feng Shui, an auspicious place is called the "xue", meaning a point in English. The best Feng Shui model calls for "xue" surrounded by mountains and water; the layout in the "xue" should be in line with Feng Shui guidelines.

Suzhou Gardens is a good example of this idea; it is mainly a residence garden, and traditional culture attaches great value to residence garden Feng Shui. Naturally, Suzhou Gardens needed a good "xue" for its location and layout.

Figure 2.26 A shot of Suzhou Garden

Lion Grove Garden
Photo. Photograph.
Suzhou. China
Vacations, China
Vacation
Packages, Cheap China
Vacation. 1 Apr. 2011.
<<http://www.chinavacations.biz/suzhou/lion-grove-garden.html>>.

According to the traditional view of Feng Shui, the four spirits model is the best for a residential garden site. The four spirits in ancient China are Four Celestial Animals each representing a direction: a red phoenix represents the south, Xuanwu – a creature half turtle and half snake – represents the north, a green dragon represents the east, and a white tiger represents the west.⁷⁹ Suzhou Gardens' site location is an ideal environment for the four spirits. The four spirits are positioned within the garden: concretizing the spirits

⁷⁹ Zhang, Shureng. 黄帝宅经: 风水心得[House by the Yellow Emperor: Feng Shui Tips]. China: Unity, 2009. ISBN: 9787802147386. Sohu Book. Web. 20 Jan. 2011. <<http://lz.book.sohu.com/serialize-id-14292.html>>.

into: a front pool – red phoenix, a back hill – Xuanwu, a river on the left – the green dragon, and a road on the right – the white tiger, with other environmental elements in relative positions.⁸⁰ (Fig. 2.26)

Within the Suzhou Gardens, Lotus Roots Garden is situated at the most auspicious location. There is a river on the south side of the garden and pavilions and library in the rear of the south side; another Zheng river located at the north side of the garden; a road on the west and a water way running on the east side. On the east side of Lotus Root Garden, there are also garden walls, hills and verdant vegetation – forming a natural terrain of a place surrounded by waters and hills. This particular terrain holds Qi⁸¹ together and prevents leakage of Qi, composing a complete, safe and balanced environment that creates a beautiful psychological space and a peaceful landscape.⁸²

In Feng Shui terms, for residential houses, the front door is like the mouth of an organism that absorbs Qi to provide energy for its body function, so door orientation is very important. Suzhou Gardens generally face south, with the front doors facing towards the three auspicious directions in the sense of The Eight Diagrams – south, southeast and east.⁸³ Among them, the southeast direction is the best, because the southeast door is called the "Dragon Gate" in Feng Shui. A screen door or wall is often built to prevent Qi blasting, and the

⁸⁰ Chao, Lindi. "苏州园林风水佳穴的实践标本[Suzhou Garden Feng Shui Practice]." *China National Geographic* 1 (2006): 138.

⁸¹ Qi is a movable positive or negative life force which plays an essential role in Feng Shui. The retention or dissipation of Qi is believed to affect the health, wealth, energy level, luck and many other aspects of the occupants of the space. Attributes of each item in a space affect the flow of Qi by slowing it down, redirecting it or accelerating it, which purportedly directly impacts the energy level of the occupants.

SOURCE: http://en.wikipedia.org/wiki/Feng_shui

⁸² Chao 140.

⁸³ Chao 140.

screen wall is not in a sealed form in order to maintain the Qi flow.⁸⁴ The front doors of Suzhou residential gardens generally face towards the southeast, which is a “wood” position in the Five Elements⁸⁵ (Fig. 2.27) and a “wind” in the Eight Trigrams (Fig. 2.28). Water and wood coexist in harmony and wind is allowed entry, meaning extra wealth coming to the family.⁸⁶

Figure 2.27 Cycle of generation and control of the Five Elements.

SOURCE Wu Xing
Wikipedia, the Free
Encyclopedia Web 2 Apr
2011
<http://en.wikipedia.org/wiki/Wu_Xing>

⁸⁴ Chao, Lindi. "苏川园林风水佳穴的实践标本[Suzhou Garden Feng Shui Practice]." *China National Geographic* 1 (2006): 141.

⁸⁵ The five elements are wood, fire, earth, metal and water. The system of five elements was used for describing interactions and relationships between phenomena. It was employed as a device in many fields of early Chinese thought.

SOURCE http://en.wikipedia.org/wiki/Wu_Xing

⁸⁶ Chao 142.

Figure 2.28 Eight Trigrams arrangement.

SOURCE: "Ba Gua." Wikipedia, the Free Encyclopedia. Web. 2 Apr. 2011. <http://en.wikipedia.org/wiki/Ba_gua>.

Feng Shui is also very particular regarding the selection of plant species in the gardens. There is a saying which states: "Pagoda trees in the gate, wealth will be enough for three generations for the family; elms in the backyard, ghosts will not come near".⁸⁷ Suzhou Gardens is also very focused on plant species selection. In the Wangshi Garden and Lion Grove Garden, pagoda trees are planted in the front gardens. In the Lotus Root Garden, the main hall courtyard garden is planted with Orange osmanthus; in the Lion Grove Garden, two strains of magnolia and orange osmanthus are also planted, meaning gold and jade will fill the home.⁸⁸

By using Feng Shui concepts, Suzhou Gardens creates a poetic living environment and an artistic, health-preserving model, which is based on the traditional Chinese culture. The builders of Suzhou Gardens pursued "balance between, within and out," and focused

⁸⁷ Zhang, Shureng. 黄帝宅经: 风水心得[House by the Yellow Emperor: Feng Shui Tips]. China: Unity, 2009. ISBN: 9787802147386. Sohu Book. 20 Jan. 2011. <<http://lz.book.sohu.com/serialize-id-14292.html>>.

⁸⁸ Chao, Lindi. "苏州园林风水佳穴的实践标本[Suzhou Garden Feng Shui Practice]." *China National Geographic* 1 (2006): 143.

both on the living space and spiritual space. This reflects ancient Chinese concerns with quality of living conditions. For the purpose of this thesis, further details of those Feng Shui guidelines are applied in the thesis design and discussed.

2.2. Inheritance: Passing Down and Then Improving the Tradition

“The architecture of China is as old as Chinese civilization. From every source of information - literary, graphic, exemplary - there is strong evidence testifying to the fact that the Chinese have always employed an indigenous system of construction that has retained its principal characteristics from prehistoric times to the present day. Over the vast area from Chinese Turkistan to Japan, from Manchuria to the northern half of French Indochina, the same system of construction is prevalent; and this was the area of Chinese cultural influence. That this system of construction could perpetuate itself for more than four thousand years over such a vast territory and still remain a living architecture, retaining its principal characteristics in spite of repeated foreign invasions - military, intellectual, and spiritual - is a phenomenon comparable only to the continuity of the civilization of which it is an integral part.”⁸⁹

-- Liang, Sicheng, 1984

In China and Taiwan, many projects were constructed on western models in order to deal with the rapid increase in population, largely formed from rural migrants, who often found these high-rise apartment dwellings inappropriate in satisfying their socio-cultural needs. The focus of the solution that this project offers is not to copy – making duplications without conscious reflexivity of the original principles of usefulness or beauty – various external forms of traditional Chinese architecture and combine them with modern building materials and

⁸⁹ Liang, Sicheng. *A Pictorial History of Chinese Architecture: A Bilingual Edition*. Ed. Wilma Fairbank. Trans. Congjie Liang. Tianjin: Bai Hua Wen Yi Chu Ban She, 2001. 78.

methods, but to create houses rich with ideologies that will transcend time, so their residents will still be inspired in the future.

Traditional Chinese ideology in architecture allows a symbiotic relationship between man-made elements and nature, and evokes emotions and memories. By incorporating appropriate cultural and social factors, the house is able to preserve and promote the continuity of values embedded in different imagined communities, their lifestyles and building traditions. The house in this thesis becomes more than just a shelter; it becomes a sacred place for each member in the family, because the goal of this project is to create a harmonious, happy family environment for the targeted clients by reinterpreting traditional Chinese ideologies.

For example, the Courtyard house embodies one of the richest components of Chinese cultural heritage: Confucianism. Designed and built by ordinary ancient Chinese, it is a manifestation of their creative and aesthetic skills. It also provides a good example of relations between society and built forms typical of traditional cultures. By incorporating ideologies which appeared in traditional Chinese courtyard houses, a regular residential house can become a place with heritage that embodies traditional ideology, and that responds to the spiritual needs of its occupants, and that at the same time psychologically brings residents back to the good part of the traditional way of living. With the layout and circulation designed according to Confucian ethical conceptions, old ways will have new expression while resonating with a present condition.

Residents' privacy is also emphasized with clear separations between the public and private areas of the house.

As one moves through one of these houses, one follows a "processional route", starting from public and moving to private spaces; therefore, the full image of this artwork is revealed a little at a time. Confucianist ideology bounds people's actions, reflecting their introverted and humble nature. The purpose of Chinese architecture is expressed implicitly, through subtle expressions which are often seen in the traditional architecture, furniture and artworks.

On the other hand, Confucianism and Taoism, emphasize finding the balance between human and nature, which was also applied in classic Chinese architecture; by stressing the virtues of local materials and building in harmony with natural and cultural ecologies, architects can preserve the true essence of the selected site. The characteristic features of a site would be noted and retained as much as possible, as they contribute to the uniqueness of the site. Hence, the geographical features of the site should remain the same, and the architecture designed should harmonise with the environment.

The influence of Feng Shui on Chinese ancient architecture can be seen in the importance placed in the pursuit of a suitable Qi field, which is the most favourable external environment for one's growth and development. Such an environment should contain beautiful mountains and clear water and favourable weather, because

mountains are the bone in man and water brings out life. Therefore, almost all Feng Shui places are particular about the balance of mountains and waters, and different combinations of spatial structure. Residential houses and their gardens can become an ideal place for spiritual cultivation and rehabilitation, because the balance between a manmade space and nature brings people a sense of comfort.

By designing a house according to this traditional Chinese ideology, a house can become a place where a person can find spiritual solace. It is a place where one tries to elevate oneself spiritually and a place where the highest power in one's heart dwells symbolically, such as the power of family values in this “fast food” society. Each member of the family can find a place that belongs to him or herself, as well as a place that brings everyone together as a whole. Within this personal place, the various internal spaces provide shelter, family interaction and solace (Fig. 2.29).

Figure 2.29 A vision of individual residential houses on agricultural land.

Source 2010 Photograph
Gene21.com.tw 2010 08 Jan 2011
<<http://www.gene21.com.tw>>

2.3. Innovation:

2.3.1. Emphasizing Ecology

Building on farmland emphasizes ecology because the land used to farm or plant or as a green area must comprise at least 90% of the total area of the land, according to the farmland zoning policy. What one can do with the 90% of the land is only limited by one's imagination.

The thesis design envisions a central theme of healthy and sustainable lifestyles for individuals on the farmland they purchased. The concept of healthy living can be expressed in the forms of outdoor yoga or gardening therapy, or the family can cultivate a small organic farm or garden together, continuing to use the land in the way that it has historically been used. The harvest can be used for self consumption, but more importantly, this activity ultimately improves the quality of their relationships with each other.

Figure 2.30 Use of biodigester and ecology pond.

Source: Lee, C.Y. & Partners "Green Design for Tesco Living Mall" PowerPoint presentation 3F1, No 6, Tun Hua N. Rd., Taipei, Taiwan, 10595 3 Jan 2008

Landscaping using a variety of local species can create an ecologically friendly, green environment, especially as the selection of the trees or flowers in the landscape also improves sustainability. For example, planting bamboo brings an Asian aesthetic to the environment; bamboo leaves can be used in binding Zongzi or in making other Chinese cuisine, and bamboo can also be used in flooring, which can be recycled in the future. An ecological water pond that functions as a rain/flood collection receptacle can also be installed, which not only creates a more natural environment for animals, but also can be used as irrigation water, if connected to the garden and landscape through the pipeline. By setting a Biodigester in the backyard, cooking fuel can be supplied by the methane released by the digester, and the residue can be used as fertilizer.⁹⁰ (Fig. 2.30) A micro wind generator is also a device that can be fully utilized in a residence with big outdoor space. For example, a miniature wind generator, such as the WPS-500, at a retail price of 2300 RMB (approximately \$CAD354), can provide 70kwh power per month when the daily average wind speed is 11m/s and the monthly effective wind hour is 210 hours.⁹¹ (Fig. 2.31)

Figure 2.31 Miniature wind generator.

Source: Preston. "400W Small Wind Turbine." *Jetson Green | Design-oriented Site for Sustainable Homes, Natural Materials, and Green Technology*. 3 May 2010. 2 Feb. 2011.
<<http://www.jetsongreen.com/2010/05/400w-small-wind-turbine-giveaway.html>>.

⁹⁰ Lee, C.Y. & Partners. "Green Design for Tesco Living Mall." PowerPoint presentation. 3FI, No.6, Tun-Hua N. Rd., Taipei, Taiwan, 10595. 3 Jan. 2008.

⁹¹ Lee, C.Y. & Partners.

As they move in and experience it first-hand, this concept of healthy and sustainable living teaches modern city dwellers about the important relationship between humans and nature.

3.3.2. Creating Architect-Client Relations in Taiwan:

In Taiwan's housing developments, decision-making is currently skewed towards the developer side. Many architects in Taiwan provide only drafting services that convert the developer's demands into plans, so the traditional image of the architect establishing a personal relationship with a client who is the future occupant of a home does not apply in most of Taiwan's housing market. Usually, the majority of the developers want buildings to be in a similar style, as their focus is on maximizing their profit. As a result, architects rarely get the chance to design and to use their artistic abilities. Developers control and lead the construction industry and their decisions and preferences dominate both the design and construction process,⁹² which makes the architect's task of understanding end user needs and preferences inherently difficult.⁹³

As a result, in Taiwan, even experienced architects are seldom involved in project planning or recommending design options even though all three separate parties - the developers, architects and homebuyers - have a stake in the design process. According to Lawson, such a situation creates inherent issues for design outcomes because:

Behind every building of distinction is an equally distinctive client, not necessarily high profile, but one who takes the time and trouble to comprehend the ideas of the architect, is supportive and enthusiastic, who is bold, willing to take risks and above all can hold their nerve during the inevitable crises.⁹⁴

⁹² Hsieh, H.-Y. "The 1990s Taiwan Residential Construction Boom: a Supply Side Interpretation." *Construction Management and Economics* 23 (2005): 268.

⁹³ Tzeng, C.T., and P. Haung. "The Professional Liability of Architects." *Journal of Architecture* 39 (2002): 24.

⁹⁴ Lawson, Bryan. *How Designers Think*. London: Architecture, 1980. 108.

Lawson also suggests viewing the client as a creative partner in the design process, but in Taiwan, architects continually defer to developers while the future purchasers and likely eventual occupants of units in these housing developments never come into contact with architects,⁹⁵ meaning that their needs cannot be fully addressed. The potential problems the end users will experience are caused by a “gap” between the “paying client” and the “user client”.⁹⁶ User-centred design demands direct interaction between designers and end-users through communication throughout the design processes, in which meaning of the design is created and shared.⁹⁷

Ideally, during the design stage, user clients should express their needs and preferences to their designers. The thesis design provides the end users with the benefit of interacting with their own architect, so that both their spiritual needs and functional needs can be fulfilled. Additionally, young architects will play an important role in this project, as I would recommend clients hire young architects for farmland housing jobs, since they are still passionate about architecture and most importantly, they are more available to the targeted clients whose individual needs require attention. The design process would begin with extensive research on the client; his or her past residences will be carefully studied to find the right balance in his or her personal preferences, as well as the family's. This project provides personalized services and designs for each individual client. It is a shopping experience in houses they could never have when choosing apartments clustered in the city. As a result, new and upcoming young architects would be granted the chance to create innovative houses, and clients would have more attention from their architects; the end result will be a house that can truly become their special family sanctuary.

⁹⁵ Lawson, Bryan. *How Designers Think*. London: Architecture, 1980. 108.

⁹⁶ Zeisel, J. *Inquiry by Design*, Cambridge: Cambridge University Press, 1981. 35.

⁹⁷ Cherry, Colin. *On Human Communication*. Cambridge, MA: MIT, 1978. 6.

C

hapter 3: Referencing

3.1. Architecturale Moments: Villa Savoye

“Architecture is the masterly, correct and magnificent play of volumes brought together in light. Our eyes are made to see forms in light: Light and shade reveal these forms: cubes, cones, spheres and cylinders or pyramids are the great primary forms which light reveal to advantage. The image of these is distinct and tangible within us and without ambiguity. It is the reason that these are beautiful forms.... The plan proceeds from within to without; the exterior is the result of the interior. The elements of Architecture are light and shade, wall and space. Through this fusion, Architecture focuses on space and volumes and their interaction.”⁹⁸

Le Corbusier, “Towards a New Architecture”

Villa Savoye, by Le Corbusier, is one of the most famous houses of the modern movement in architecture. Le Corbusier thinks that fine architecture is poetry that expresses “the emotion of the senses, the joy of the mind as it measures and appreciates the recognition of an axial principle which touches the depth of our being”.⁹⁹ The architectural moments one can encounter in Villa Savoye represent of the architect’s concept of “Promenade Architecturale.” (Fig. 3.1)

Figure 3.1 Villa Savoye located in Poissy, the outskirts of Paris, France and built between 1928 and 1931.

Source: “Villa Savoye: Le Corbusier.” *Noonjes's Blog*. 4 Feb. 2010. 08 Mar. 2011.
<<http://noonjes.wordpress.com/2010/02/04/villa-savoye-le-corbusier/>>.

⁹⁸ Le Corbusier. *Towards a New Architecture*. Trans. Frederick Etchells. New York: Dover Publications, 1986. 30.

⁹⁹ Le Corbusier 203.

As the guests pass the entrance gate, their vision is blocked by trees. As they approach closer, the house reveals itself all at once as a grand white box, hovering on columns. This is a powerful expression of an elevated primitive shape with openings that reveal glimpses of the interior.¹⁰⁰ As the car is drawn closer to the house and into it, the passenger realizes he is experiencing a temporal progression through an ingenious link of spaces that allow a gradual exploration of the project.¹⁰¹ Le Corbusier called it a “Promenade Architecturale”- cinematic movement because people’s perception of the space and the elements surrounding it changes, depending on their location in space and time within the project.¹⁰² As guests go past the entrance door into a vestibule, a ramp placed in the axis of the entrance invites them to go to the upper floor; this ramp begins at ground level and swings upwards through the house; it is the very spine of the plan, acting as a kind of conductor wire for “la promenade architecturale”, connecting the activities taking place inside the house with those on the roof garden, with its plantings and architectural shapes.¹⁰³ The ramp in Villa Savoye provides

¹⁰⁰ Chami, Camille. "Le Corbusier and Villa Savoye Remembered." *Archinnovations*. 25 Oct. 2007. 14 Feb. 2011. <<http://www.archinnovations.com/featured-projects/houses/le-corbusier-and-villa-savoye/>>.

¹⁰¹ Chami.

¹⁰² Perez De Vega, Eva. "Experiencing Built Space: Affect and Movement." Ed. Alessandro Bertinetto, Farbian Dorsch, and Cain Todd. *Proceedings of The European Society for Aesthetics* 2 (2010): 400.

gradual ascent from the pilotis, creating totally different sensations than those felt when climbing up the stairs. A digital form staircase separates one floor from another; an analog form ramp links them together (Fig. 3.2).

Villa Savoye goes well beyond “machine à habiter”. As seen in this house, Le Corbusier has put the human experience at the core of the house, and he also brought nature inside the house with the first floor terrace and the roof garden.

In order to create a cinematic movement through the architecture, the “Promenade Architecturale” reveals Villa Savoye slowly, instead of all at once; this is what my thesis design attempts to achieve. Even though it exists in a different time, space, culture, and concept, the process of this architectural journey coincides with the Confucianism concept of modesty – not revealing an extreme self all at once, and divulging only progressively, as people’s interests build up when they move to the next unexpected space. Encountering moments of traditions, ideologies and family values, in different locations of the house a little at a time, dwellers will learn to appreciate the way of living that the house tries to bring back.

Figure 3.2 Interior of Villa Savoye.

Source: “Villa Savoye: Le Corbusier.” *Noonjes's Blog*. 4 Feb. 2010. 08 Mar. 2011.
<<http://noonjes.wordpress.com/2010/02/04/villa-savoye-le-corbusier/>>.

¹⁰³ Chami, Camille. “Le Corbusier and Villa Savoye Remembered.” *Archinnovations*. 25 Oct. 2007. 14 Feb. 2011. <<http://www.archinnovations.com/featured-projects/houses/le-corbusier-and-villa-savoye/>>.

By embedding the living concept that this thesis design wants to promote gradually in the minds of clients, the clients would unconsciously adapt a way of living as a loving family.

3.2. Man, Architecture and Nature: Fallingwater

"Wright went to visit the site with Eddy Kaufmann in December 1934. And he got back to Taliesin and he wrote a letter to Kaufmann saying, "I'm designing a building to the music of the stream." And the story that the building is telling is about how sound can in effect become part of the visual experience of architecture, [and] how the building therefore can exist in a temporal relation to its sight[/site]." ¹⁰⁴

Neil Levine, Architectural Historian

Fallingwater stands as one of Frank Lloyd Wright's most significant masterpieces, both for its dynamism and for its integration with the striking natural surroundings, particularly in the importance of interpenetrating exterior and interior spaces and the strong emphasis placed on harmony between man and nature.¹⁰⁵ Tadao Ando, contemporary Japanese architect, commented: "I think Wright learned the most important aspect of architecture, the treatment of space, from Japanese architecture. When I visited Fallingwater in Pennsylvania, I found that same sensibility of space. But there was the additional sounds of nature that appealed to me."¹⁰⁶ (Fig. 3.3).

Figure 3.3 Fallingwater in Pennsylvania, completed in 1937.

Source: Mike. "Fallingwater – One Of The Most Famous Houses In The World Built Over a Waterfall." *Interior Decorating, Home Design, Room Ideas - DigsDigs*. 23 Mar. 2010. Web. 08 Mar. 2011. <<http://www.digsdigs.com/fallingwater-one-of-the-most-famous-houses-in-the-world-built-over-a-waterfall/>>.

¹⁰⁴ Levine, Neil. "Fallingwater." *PBS: Public Broadcasting Service*. 23 Feb. 2011. <http://www.pbs.org/flw/buildings/fallingwater/fallingwater_exterior03.html>.

¹⁰⁵ Perez, Adelyn. "AD Classics: Fallingwater House / Frank Lloyd Wright." *ArchDaily | Broadcasting Architecture Worldwide*. 14 May 2010. 10 Feb. 2011. <<http://www.archdaily.com/60022/ad-classics-fallingwater-frank-lloyd-wright/>>.

Well-known for its connection to the site, Fallingwater is built on top of an active waterfall flowing beneath the house. Ledge rock is the material used in building the house; it links the outside with the inside of the house.¹⁰⁷ Integration with its natural setting extends to almost every corner of the house. All the rooms are oriented towards the house's natural surroundings, and the living room even contains steps leading directly into the water running below the house.¹⁰⁸ "The circulation through the house consists of dark, narrow passageways, intended this way so that dwellers experience a feeling of compression when compared to that of expansion the closer they get to the outdoors. The ceilings of the rooms are low, reaching only up to 6'4" in some places, in order to direct the eye horizontally to look outside."¹⁰⁹ Bedrooms are small, some with low ceilings to encourage people outward toward the open social areas, decks, and outdoors (Fig. 3.4). "The beauty of these open spaces is found in their extensions towards nature, done with long cantilevered terraces."¹¹⁰ Family members living in this house are constantly encouraged to come to a

¹⁰⁶ Lim, Sunamita. *Japanese Style: Designing with Nature's Beauty*. Salt Lake City, UT: Gibbs Smith, 2007. 24.

¹⁰⁷ "Fallingwater." *Wikipedia, the Free Encyclopedia*. Web. 20 Jan. 2011. <<http://en.wikipedia.org/wiki/Fallingwater>>.

¹⁰⁸ Perez, Adelyn. "AD Classics: Fallingwater House / Frank Lloyd Wright." *ArchDaily | Broadcasting Architecture Worldwide*. 14 May 2010. 10 Feb. 2011. <<http://www.archdaily.com/60022/ad-classics-fallingwater-frank-lloyd-wright/>>.

¹⁰⁹ Perez.

¹¹⁰ "Fallingwater."

place where the whole family can gather around and enjoy the gift of nature together. It served the client's goal of building a weekend house where the clients' family could share their passion of camping and nature and appreciate time together as a family.

Figure 3.4 Social area

Source: Mike. "Fallingwater - One Of The Most Famous Houses In The World Built Over a Waterfall " *Interior Decorating, Home Design, Room Ideas - DigsDigs*. 23 Mar. 2010. 08 Mar 2011 <<http://www.digsdigs.com/fallingwater-one-of-the-most-famous-houses-in-the-world-built-over-a-waterfall/>>.

Fallingwater successfully established the relationship between man, architecture and nature. Wright wanted to create harmony between man and nature, and in his integration of the house with the waterfall, managed to do so triumphantly. Fallingwater was meant to compliment its site while still competing with the drama of the waterfall and its endless sounds of crashing water. As Perez notes: "the power of the falls is always felt, not visually but through sound; as the breaking water could constantly be heard throughout the entire house."¹¹¹

¹¹¹ Perez, Adelyn. "AD Classics: Fallingwater House / Frank Lloyd Wright." *ArchDaily | Broadcasting Architecture Worldwide*. 14 May 2010. 10 Feb. 2011. <<http://www.archdaily.com/60022/ad-classics-fallingwater-frank-lloyd-wright/>>.

Fallingwater is an example of the physical and spiritual meeting between man and architecture in harmony with nature, and it also coincides with the Taoist idea of vitality and naturalness, through the extensive of usage of cantilever and natural/local material. Promoting harmony between man, architecture and nature is a pursuit in line with Chinese traditional ideologies, and it is one of the goals my design tries to accomplish.

3.3. Creating Shangri-La: Miho Museum

“Passing through a grove of peach blossoms in full bloom and through a cave, you arrive upon the village of the Peach Blossom Spring. What would you do if you were to create such a place?”¹¹²

Miho Museum News, Vol.9 2002.3

Designed by I.M. Pei, the Miho Museum is a work of art itself, which he came to call Shangri-La. Located in a mountainous and forested landscape in the southeast of Kyoto, Japan, near the town of Shigaraki and opened in 1997, the design of the Miho Museum was based on a moment from a Chinese fable.

Figure 3.5 Tunnel dug through neighbouring mountain.

Source: Heller, Dan.
Photos/Pictures of Miho Museum. 2004.
Photograph. Kyoto Dan Heller's Stock Photography and Business Resources. 16 May 2004. 2 Apr. 2011.
<<http://www.danheller.com/j-miho-museum.html>>.

It is recounted in the architect's biography, written by Louise Chipley Slavicek, that for inspiration, I.M. Pei turned to a classic Chinese fable by the fourth-century poet and scholar Tai Yuan Ming, entitled “Peach Blossom Spring,” which he had loved as a child. It is a story of a fisherman exploring a mountain stream, who suddenly stumbles on a landscape of unearthly beauty that has remained

¹¹² “MIHO MUSEUM Shangri-La Vol.9.” *MIHO MUSEUM*. Mar. 2002. 14 Jan. 2011.
<http://www.miho.or.jp/english/member/shangrila/vol9/eshan9_4.htm>.

untouched by time, like the mythical Shangri-La described in British author James Hilton's famous twentieth-century novel, *Lost Horizon*.¹¹³ Pei's design approach to the Miho Museum was that visitors would come upon the building and its pristine mountainside site suddenly, just as the Chinese fisherman in the ancient story had unexpectedly come upon his Shangri-La.¹¹⁴ To give museum visitors seeing the building for the first time the sensation of having stumbled upon a hidden paradise, Pei had a steel-lined tunnel dug through a neighbouring mountain (Fig 3.5). Connected to the tunnel is an artfully designed suspension bridge that almost seems to float above the interceding valley below (Fig. 3.6). As visitors emerge from the tunnel onto the bridge, they receive their first tantalizing glimpse of the museum's slanted glass roofs rising above the tree-covered mountain slope.¹¹⁵ "The idea is that you should somehow feel that you just happen upon the mountain," says I.M. Pei.¹¹⁶ In his sensitive interplay between man and environment, Pei knows when to let nature have its moment. He created a quietly austere, light-filled museum that almost felt unearthly.

Figure 3.6
Suspension bridge.

Source: Heller, Dan
Photos/Pictures of Miho Museum 2004
Photograph Kyoto Dan
Heller's Stock Photography
and Business Resources
16 May 2004 2 Apr
2011
<http://www.danheller.com/j/miho_museum.html>

¹¹³ Slavicek, Louise Chipley. *I.M. Pei*. New York: Chelsea House, 2010. 94.

¹¹⁴ Slavicek 94.

¹¹⁵ Slavicek 95.

¹¹⁶ Itoi, Kay. "I. M. PEI'S NEW MUSEUM." *Artnet.com Magazine News - The Art World Online*. 2004. 20 Feb. 2011. <http://www.artnet.com/magazine_pre2000/news/itoi/itoi11-26_97.asp>.

Figure 3.7 The glass-roofed entrance hall.

Source Heller, Dan
Photos/Pictures of Miho Museum 2004
Photograph Kyoto Dan Heller's Stock
Photography and Business Resources 16
May 2004 2 Apr 2011
<<http://www.danheller.com/j/miho/museum.html>>

The most unforgettable aspect of Miho Museum is not an art piece. One step into the glass-roofed entrance hall, one would be immediately confronted by the magnificent panorama of the nature preserve – a breathtaking view.¹¹⁷ In the frame is an old pine tree, a bonsai tree specially selected and planted for the effect, while in the distance, the Shumeikai's sanctuary building and bell tower, which is also designed by Pei, can be seen (Fig. 3.7). "The way we bring light into this place, the way we open up to the sky, and also open up towards the view all has to do with our desire to bring nature into harmony with architecture," says Pei.¹¹⁸

Floating above the mountain slopes, Miho Museum is in harmony with its environment, while the glass-roofed entrance hall becomes a sanctuary for the visitors; here they can meditate and enjoy solace, and let the spectacular view allow their minds to wander. The story behind Miho Museum adds to the connotations behind the architecture, while creating a climax for its visitors when

¹¹⁷ Itoi, Kay. "I. M. PEI'S NEW MUSEUM." *Artnet.com Magazine News - The Art World Online*. 2004. 20 Feb. 2011. <http://www.artnet.com/magazine_pre2000/news/itoi/itoi11-26_97.asp>.

¹¹⁸ Itoi.

they see it for the first time. This is precisely the effect that my thesis design tries to bring to its audience (Fig. 3.8).

Figure 3.8 Night view of the bridge emerge on to the tunnel.

Source Heller, Dan
Photos/Pictures of Miho Museum 2004
Photograph Kyoto Dan Heller's Stock Photography and Business Resources
16 May 2004 2 Apr 2011
<http://www.danheller.com/j/miho_museum.html>

C

hapter 4: Design Solution

4.1. Client Background

My client is C.C. Chen, a traditional family man who is looking for the perfect home in which to spend his retirement. Born into an educator's family in the rural area of southern Taiwan, C. C. Chen was the second-youngest of his six siblings. Mr. Chen's parents did not have adequate funding for his education, so at the age of ten, Mr. Chen left home for Taipei, in order to work and attend school. Graduating from the School of Architecture at Tamkang University in Taiwan, Mr. Chen started working at a small local architect's office. However, the field of architecture was not widely recognized by the public in Taiwan, and Mr. Chen's salary at that time was only sufficient to cover his apartment rental in the big city, and Mr. Chen had to work overtime for extra pay. After five years at the architect's office, Mr. Chen decided to change his career and become a construction manager, where he would receive a bigger salary, in order to support his wife and two children.

Mr. Chen started his own construction company, Chen-An Development, in 1970, which concentrated on single and multifamily housing in the 1970s and 80s. In the late 1980s and 90s, it expanded to government-sponsored projects, such as highways, railways, sky trains, subways and harbours.¹¹⁹ The company has also worked on industrial factory developments, mass residential developments, skyscraper developments and theme parks in Taiwan. Though he made his career in construction, Mr. Chen never discarded his true passion for architecture, always working with architects from around the world who participated in the designs for his projects.

¹¹⁹ Myers, Andrew. "Circle Squared." *Robb Report Luxury Home* Spring (2006): 85.

In addition to his work in construction management, Mr. Chen studied Asian and European cultural artefacts, believing that cultural artefacts help elevate the artistic quality of his architectural designs. In 1975, Mr. Chen started collecting abandoned artefacts from local and yet to be recognized historical buildings, which were typically traditional residential buildings. Today Mr. Chen has a very impressive collection of artistic artefacts, which includes over 3,000 pieces of Taiwan cultural arts, about 300 pieces of Chinese Ming Dynasty furniture, 6,000 baskets from different regions of China, and over 6,000 pieces of Taiwanese Aboriginal art. Mr. Chen also studied and became an expert in the art of bonsai; during his spare time, Mr. Chen trims and cares for his hundred-plus miniature bonsai trees, as he strongly believes that the principles of bonsai greatly influence the artistic execution in landscape architecture.

Mr. Chen is currently happily retired and lives in Taipei with his family.

4.2. Path of Changes in Client's Residential Houses

Early 1980's: "Chin Yuan"

As he studied architecture in university at a time when modern architecture was adopted by many influential architects and architectural educators, and was increasingly gaining in popularity, Mr. Chen's first house also followed the footsteps of the modern contemporary architectural movement.

Built in the early 1980's and named after C.C. Chen, "Ching Yuan" is located on Dansheui Mountain, right off Guandu Bridge, which connects Taipei city with Dansheui. Situated on the top of the mountain with a breathtaking view of Taipei city, this luxury home is just 20 km from the central business district of Taipei City (Fig. 4.1). Instead of building from nothing, Mr. Chen chose to undertake extensive renovations on an old cottage with a color stone wall. Using the already-existing old cottage as the basement and partial first floor of the new home, Mr. Chen successfully combined the modern with the historical. On top of the warm-colored cottage base stands the contemporary, second and third floor with a clean, smooth, surface and uncluttered appearance, which are a cool and muted color (Fig. 4.2). The house features an

Figure 4.1 View from Chin Yuan roof top.
Source Mr Chen

Figure 4.2 New modern house built on the old structure.
Source Mr Chen

asymmetrical balance of linear themes. As one approaches the entrance, one can see, through a full wall of floor-to-ceiling windows on the left side of the entrance, a stunning loggia, which is located on the ground floor of the house (Fig. 4.3). To harmonize with the theme of the house, the landscaping is also designed in a contemporary geometrical form. Connected by a narrow stone walkway is a geometrical pavilion, looking like a quarter pie graph and acting as an extension of the house from the side entrance of the house (Fig. 4.4). The backyard landscaping contains concrete steps on a shallow pond (Fig. 4.5), which resemble the works of Scarpa in the Brion-Vega Cemetery (Fig. 4.6). The concrete material was used with care and imagination to craft the well-thought-out features of the landscape; the reflection of the geometric shapes in the pond in combination with the cool-colored steps, though hard and cold in texture, creates a poetic place for dwellers. A set of copper sculptures decorates one corner of the pond, resembling flowers absorbing sunlight. The garden consists of Japanese Zen-style garden elements, such as bonsai, and Chinese-style garden elements (Fig. 4.7).

Figure 4.3 Front facade of Chin Yuan.
Source: Mr. Chen

Figure 4.4 Connected by a narrow stone walkway is a geometrical pavilion on the landscape of Chin Yuan.
Source: Mr. Chen

Figure 4.5 Pond in the back garden of Chin Yuan.
Source: Mr. Chen

Figure 4.6 A shot of Brion-Vega Cemetery by Carlo Scarpa in San Vito d'Altivole, Italy.

Source: Carlo Scarpa. 2010. Photograph. San Vito D'Altivole. *Parallel Distortion*. By Mario Gagliardi. 12 Aug. 2010. Web. 2 Apr. 2011.
<<http://www.parallel distortion.com/?p=59>>.

Figure 4.7 Bonsai on the roof garden of Chin Yuan.

Source Mr Chen

Inside, interconnected spaces are wrapped by wall and ceiling planes, while vast, automated, sliding glass doors invite visitors to the grand main living room through the front screen wall, which was built under Feng Shui guidelines (Fig. 4.8). The use of glass and polished granite flooring throughout much of the house also sets the texture of the home as modern. The interior is spacious and open, with modern luxury furniture and Taiwanese aboriginal artifacts. The walkway from the front screen wall to the living room also acts as a gallery for Mr. Chen's collection of aboriginal artifacts. Various sculptures and totems are displayed on both sides of the walkway (Fig. 4.9), all the way to the grand loggia, where Mr. Chen played with shifting geometrical shapes in different positions. Unlike most houses built in Taiwan around the same time, the living room is almost in the shape of rhombus, and in one corner, an elevated square separates itself as a tea area

Figure 4.8 Sliding Screen door.

Source Mr Chen

(Fig. 4.10). Following the stairs to the second floor, a cantilever bench overlooks the entire living room (Fig. 4.11), where one gets a clear view of the fun that Mr. Chen had with different geometrical shapes: an irregularly-shaped, custom designed rug is intentionally placed in a slanted position in the middle of the room, resembling an artistic painting stroke. Next to the cantilever bench, Mr. Chen sculpted two Taiwanese aboriginal boat paddles to bring out one of the decorative themes of the house, which also adds to the mood of a house as a modern art gallery (Fig. 4.12).

Figure 4.9 Totems are displayed on both sides of the walkway.

Source. Mr. Chen

Figure 4.10 An elevated square platform separates itself as a tea area.

Source Mr Chen

Figure 4.11 A cantilever bench overlooks the entire living room.

Source Mr Chen

Figure 4.12
Taiwanese
aboriginal boat
paddles.
Source Mr Chen

Concavity and convexity can give people different visual sensations and psychological feelings, and on the second floor, Mr. Chen explored these effects to the maximum. A floor-to-ceiling bookcase curves in along the concave wall (Fig. 4.13), while the other side of the wall convexes in the shape of the stairs going up to the third floor (Fig. 4.14). The manipulation of the walls deflects the geometry to create an irregular form. The form and geometry of the house re-interprets what modern architecture meant in a time and place where it was not the mainstream.

Figure 4.13 A floor-to-ceiling
bookcase curves in along the
concave wall.
Source Mr Chen

Figure 4.14 The wall convexes in
the shape of the stairs going up
to the third floor.
Source Mr Chen

The “Ching Yuan” is a rare example of a contemporary house built in Taiwan in the 1980’s. Constructed as the first house for this architecture enthusiast’s family, “Ching Yuan” carried forward the Modernist tradition of the experimental house as a vehicle to explore new architectural possibilities. It combined the old with the new, and modern with aboriginal elements, and contained the potential for wider application of these combinations. However, the lack of cultural connotations and of a cultural identity makes the house deficient in soul. Mr. Chen later commented that: “although the space is open and beautiful, the essence of a traditional family is buried under the cold feature of modern architecture.” After a several years of living in a modern place with open space, Mr. Chen, in search of a house with both heart and soul, moved on to his second house.

Late 1980's and early 1990's: Chen's Compound

The site of Mr. Chen's second house, which was designed in the late 1980's and early 1990's, is in Yang Ming Mountain, Taipei city. Yang Ming Mountain is one of the most expensive residential districts in Taipei city; like Beverly Hills in Los Angeles, the area contains almost all the high-end houses in the city. Houses located in this area also have amazing views of Taipei City and most importantly (Fig. 4.15), the neighbourhood is located within Taipei so the daily commutes to all parts of Taipei are convenient. However, because it is known as a prestigious district, Yang Ming Mountain residences also attract more criminal activities, such as theft, than other areas in the city.

Figure 4.15 View of Taipei city from Yang Ming Mountain.

Source Wu, Hsin Yi Yang Ming Mountain 2007 Photograph Taipei Picasa Web Album 24 Sept 2007 10 Feb 2011
<<http://picasaweb.google.com/XGGMouse/bwtvBE#>>

If Mr. Chen's first modern, contemporary house stands on one extreme of the traditional-modern spectrum, then this second compound is definitely located on the other extreme. Deeply interested in Chinese architecture and proud of his cultural roots, Mr. Chen designed the house based on the traditional Chinese style, with red brick

Figure 4.16 Red brick walls and modernized sloping roofs.

Source, Mr Chen

walls and modernized sloping roofs (Fig. 4.16). Trying to reproduce the qualities of historical Chinese single-family houses as much as possible, Mr. Chen included important traditional typology, such as courtyard design and Suzhou Garden design. As in traditional dwellings, there is a sequence of spaces from the corridor between houses, the grand entrance yard, and the small parvis to the backyard landscape. Mr. Chen made great efforts to emphasize privacy and territoriality of the residence; the compound is enclosed by white stucco walls with a decorative, dark grey tiled roof that resembles walls from Suzhou Gardens (Fig. 4.17). This also lowers security concerns, such as trespassing or theft. The front entrance is covered by a secondary roof, creating a Hisashi¹²⁰ for visitors (Fig. 4.18). The house compound is made of Lego-like pavilions, all of which are connected, creating an interesting threshold between each area (Fig. 4.19). One of the features of this compound is that the roofs of each pavilion are all connected, creating a closed and traditional circulation (Fig. 4.20); walkways between pavilions are

Figure 4.17 White stucco walls with a decorative, dark grey tiled roof that resembles walls from Suzhou Gardens.

Source: Mr. Chen

Figure 4.18 Hisashi featured at the gate of Chen's Compound.

Source: Mr. Chen

Figure 4.19 Interconnected compound in Chen's Compound.

Source: Mr. Chen

¹²⁰ A secondary roof along the edge of a roof projecting beyond the side of the building to provide protection against the weather.

narrow, and the walls on both sides are high. Walkways in this depth-width ratio are cross-ventilated to a great extent, creating a cool and comfortable place, as well as a feeling of enclosure which exists in traditional Hutong, or alleys. Chen also applied supplementary design elements, such as bamboo and bonsai (Fig. 4.21), in order to reinterpret traditional design.

Chen's compound is designed to allow the family to live in a northern Chinese feudal style, as the entire compound is precisely laid out with elegant pavilions (Fig. 4.22). Though this Chinese compound would satisfy his search of a house that fitted his cultural roots, Mr. Chen soon realized that a simple copy of traditional Chinese architecture merely denotes a stylistic fashion. With an enclosed space and circulation, the pure Chinese compound cannot fulfill his functional needs for open space. Though it features traditional Chinese spatial concepts, the integration of tradition still only occurs on a symbolic level. Mr. Chen continued to develop his designs, searching for one that was more profound.

Figure 4.20 Roofs of each pavilion are all connected.
Source: Mr. Chen

Figure 4.21 Bonsai in the Chinese style garden.
Source: Mr. Chen

Figure 4.22 View of Chen's compound.
Source: Mr. Chen

1996 to 1998: Mandala

"My idea of a mandala is a square, representing mankind or Earth, superimposed inside a circle, representing perfection or heaven. In Mandala, both the house's footprint and floor plans represent the mandala ¹²¹ (Fig. 4.23) as a symbol of Buddhism, and the axial points represent the mandala from Tantric Buddhism."¹²²

-C.C. Chen

Figure 4. 23 Tibetan Buddhist Thangka painting of Mandala, 19th century, Anonymous Tibetan artist

Source: Anonymous Tibetan Artist. *Mandala of Vajradhatu*. 19th Century. *Wikipedia, the Free Encyclopedia*. 10 Apr. 2009. Web. 2 Apr. 2011. <http://en.wikipedia.org/wiki/File:Mandala_of_Vajradhatu.JPG>.

In preparation for retirement, Mr. Chen immigrated to Vancouver, British Columbia, along with flocks of his friends, bringing along his favourite collections of

¹²¹ Mandala is a Sanskrit word that means "circle". In the Hindu and Buddhist religious traditions, their sacred art often takes a mandala form. The basic form of most Hindu and Buddhist mandalas is a square with four gates containing a circle with a center point.

SOURCE: <http://en.wikipedia.org/wiki/Mandala>

¹²² Myers, Andrew. "Circle Squared." *Robb Report Luxury Home* Spring (2006): 87.

Chinese artefacts. He began the design of the Mandala project, his third house, in 1994, together with his old friend Brian Hemingway¹²³.

The Mandala is situated in the Lower Mainland of the Greater Vancouver area, residing in the Southlands where residents share interests in horse riding and breeding, and where the typical lot sizes range from one to three acres. Passionate about golfing, Mr. Chen selected the lot due to the convenient walking distances to the three local championship golf courses.

His co-designer Hemingway is a follower of Frank Lloyd Wright¹²⁴, and he decided to elongate and rotate the house at different structural pillars. For architectural aesthetics, beams were protruded beyond the envelope of the house (Fig. 4.24). For privacy reasons, the lower floor was designed to serve as a public area, and the more private spaces were located on the upper floor. As Mr. Chen's taste runs from East to West, ancient to modern, "the mandala as motif merges with elements of traditional Chinese architecture: from moon doors to lattice patterns, from Feng Shui to the use of concrete, glass, steel and unadorned granite, limestone and wood, evoking modernism, elements of Frank Lloyd Wright and the Prairie School, as well as traditional Japanese architecture",¹²⁵

Figure 4.24 North elevation sketch of Mandala: beams were protruded beyond the envelope of the house
Source: Mr. Chen

¹²³ Brian Hemingway is an award-winning, West Coast, contemporary residential architect who current has a firm in Vancouver BC, Canada.

¹²⁴ Frank Lloyd Wright (June 8, 1867 – April 9, 1959) was an American architect, interior designer, writer and educator, who designed more than 1,000 projects, which resulted in more than 500 completed works.

¹²⁵ Myers, Andrew. "Circle Squared." *Robb Report Luxury Home* Spring (2006): 88.

During the design stage, Mr. Chen invited a traditional Chinese Feng Shui master to the site, in order to review the design and give suggestions about how the design could be modified to fit the landscape according to Chinese tradition. As a result, the A lantern, next to the gate, designed from erecting the plan view of Mandala, marked the point of entrance. This point of entrance was off grid to the actual entrance door (Fig. 4.25). As one approaches the entrance gate of Mandala, strong contemporary Chinese motifs are seen on the red copper gate¹²⁶, facing southwest. Mr. Chen also selected polished red copper to be used as a material at critical areas where the mandala symbol appeared, representing the Chinese red in a contemporary sense. The positions of the lake, swimming pool, tennis courts and eight-stall stable were chosen according to Feng Shui guidelines.

Figure 4.25 A lantern, next to the gate, designed from erecting the plan view of Mandala, marked the point of entrance.

Source: Mr. Chen

Figure 4.26 Porte cochere leading visitors to Mandala.

Source: Mr. Chen

Inside the copper gate, two pillars, punched open with rectangular lanterns and a steel Chinese lattice pattern, support the latticed porte cochere¹²⁷ (Fig. 4.26),

¹²⁶ The meaning of red in Feng Shui of Chinese architecture represents the power of casting evil spirits away from the building or the complex, and so the wooden entrance doors in traditional Chinese architecture are painted red to prevent the entrance of evils.

¹²⁷ A porte cochere, as the French name indicates, was originally an entrance or gateway to a building large enough to permit a coach to be driven through it into the interior courtyard beyond. These gateways are common features of homes and palaces built during the reigns of Kings Louis XIV and XV of France.

SOURCE: <http://www.britannica.com/EBchecked/topic/471059/porte-cochere>.

and a copper, red door, marking the public axis of the house, appears at the end of the Porte Cochere (Fig. 4.27). Proud of his Chinese heritage, Mr. Chen designed the entrance door to resemble not only a mandala, but also a classical Chinese door (Fig. 4.28). Two neck-height concrete walls, punched open with lanterns, are located on either side of the red, round door, and serve as privacy barriers from the drive path, as well as create layering between inside and outside. Obsessed with the art of bonsai, Mr. Chen stressed the importance of layering, which he learned from his practice of bonsai. As a result, throughout this house, layers upon layers of design aesthetics could be seen. Mr. Chen requested the design of a butt-glazed glass system for the house to create visual openness from the house to its gardens (Fig. 4.29).

Figure 4.27 A red door appears at the end of the porte cochere.

Source: Mr. Chen

Figure 4.28 The entrance door to resemble not only a mandala, but also a classical Chinese door.

Source: Mr. Chen

Figure 4.29 Butt-glazed glass system for the house to create visual openness from the house to its gardens.
Source: Mr. Chen

As guests enter the round door, an open, two-story foyer, appears, which also contains two punched pillars with lanterns, two seats on which guests can sit to remove shoes on either sides of the pillars, a closet for coats (Fig. 4.30), and a screen wall for displaying paintings at the end of the foyer, which also follows Feng Shui guidelines (Fig. 4.31). On top of the foyer, next to the stairs leading to the upper level, there appears to be a light fixture made of maple, painted steel, and copper. This light fixture, as an erected mandala, marks an important transitional point in the house. To incorporate casual aesthetic elements in the living room, the interior swimming pool was added just beyond the living room, which extends to the exterior swimming pool next to the living room (Fig. 4.32). This exterior swimming pool, with two fountain lanterns on the south, serves as a visual complement to the lake view towards the north (Fig. 4.33). The dining room, located between two sets of pillars, contains displays of Chen's artefacts. The dining table, which seats 20 people and was designed by Chen, is also marked by a less-elaborate lantern on the ceiling, which signifies a place of gathering (Fig. 4.34). Throughout the house, there are a

total of four fireplaces in between two sets of pillars, a detail which conforms to the concept of mandala signifying an area of gathering (Fig. 4.35).

Figure 4.30 Looking out from foyer to the entrance of Mandala.
Source: Mr. Chen

Figure 4.31 Screen wall at the entrance of Mandala.
Source: Mr. Chen

Figure 4.32
Indoor part of
the swimming
pool.
Source: Mr. Chen

Figure 4.33 Top: View of the house and lake; Bottom: Lake viewing from the house.
Source: Chen

Figure 4.34 Dining table.
Source: Mr. Chen

Figure 4.35 One of the four fireplaces.
Source: Mr. Chen

Aside from the artefacts and the antique Chinese teapot collection that Mr. Chen displayed in the dining room and tea room (Fig. 4.36), is an extensive collection of Ming Dynasty furniture, Wei Dynasty stone statues and original pieces of 20th century furniture by design giants Le Corbusier, Charles and Ray Eames, Wright, Charles Rennie Mackintosh and Michael Graves.¹²⁸ (Fig. 4.37, 4.38)

Figure 4.36 Mr. Chen's teapot collection.
Source Mr Chen

Figure 4.37 Le Corbusier chairs with Ming Dynasty Table and lantern on the back.
Source Mr Chen

¹²⁸ Myers, Andrew. "Circle Squared." *Robb Report Luxury Home* Spring (2006): 90.

Figure 4.38 Cassina chairs with Ming Dynasty chairs in the living room.
Source: Mr. Chen

“In order to improve one’s personal capacity for art, I think it is necessary to understand a diversity of the arts, and I’ve tried to do that for over 30 years. All of these pieces represent the house, which was designed to be a big melting pot of Eastern and Western cultures. The Mandala not only promotes a sense of peace but also provides layered architectural effects coupled with seasonal changes. As a result, nature is revealed throughout the house.”

-C.C. Chen (author’s first-hand interview with client)

Mr. Chen’s third house in Canada approaches the ideal house in his mind – combining the old with modern, eastern with western. It would be a foundation for my design in creating Mr. Chen’s fourth house, with which I am hoping to end his search

for the home that balances everything he desires. The successful completion of a residential house for Mr. Chen would attract more clients to my project, meaning that in the end, more people would be able to get away from the city centre and enjoy living in a house among mountains.

4.3. The Role of Mr. Chen's Taiwanese Aboriginal Art Collection in This Project:

“Architecture is a profound art, and also my major. In order to improve personal capacity of art, I think it is necessary for me to understand a diversity of arts. Taiwan's primitive art is one of them, and is my favorite as well. Thus over two decades, I never stopped collecting the kinds of objects. Taiwanese indigenous people include the Atyal, Saisiyat, Puyuma, Ami, Yami, Bunun, Tsou, Paiwan and Rukai. Two or four hundred years ago, these people lived by the seas, on the plains as well as mountains. The geographical characters result in indigenous people's multi-culture. For instance, each tribe's different social type in the art of architecture, worship and daily necessities could all present the intelligent, spiritual influence and philosophy of life of Taiwan's ancients. Their diversified cultural styles and features are beyond thinking, their artistic talent and level are extremely important for the primitive art. In recent decades, Taiwanese indigenous people have faced changes and shock of the society. This led to valuable and profound cultural artefacts to continue to be lost. In addition, it is a pity that primitive art did not attract people's attention and respect because the indigenous people of Taiwan are the minority and they fail to be understood by people. Hence, I am please to be invited by the National Museum of History to present The Special Exhibition of Aboriginal Arts in Taiwan.”

Part of Mr. Chen's speech at the National Museum of History in Taiwan, 1997 (author's first-hand interview with client)

The Aboriginal Peoples of Taiwan are the First Nations of Taiwan. Eleven rich veins in Taiwan's web of cultures are those of its 11 indigenous groups: the Amis, Atayal, Bunun, Kavalan, Paiwan, Puyuma, Rukai, Saisiyat, Thao, Tsou, and Yami. Recent research suggests that their ancestors may have been living on the islands

for approximately 8,000 years before major Han Chinese immigration began in the 17th century A.D.¹²⁹

Arts such as woodcarving, weaving, wickerwork, and pottery, as well as ceremonial dance and song, have always played central roles in indigenous life, as and have strong traditions of individuality, innovation, and creativity. The Paiwan and Rukai peoples of southern Taiwan, for example, are especially known for their woodcarvings of stylized human figures, geometric patterns, and images of the hundred-pacer snake. The Yami of Orchid Island are best known for their sturdy, hand-built boats made without nails or glue, and Atayal women use simple back-strap looms to create rectilinear patterns of squares, diamonds and triangles¹³⁰.

Mr. Chen thinks Taiwanese indigenous people cannot be neglected and for years he has been appreciating and collecting their art work. The thesis design will also serve as a partial museum for Chen's collection of Taiwanese indigenous art. Mr. Chen's private museum in Taipei: (Fig. 4.39 – 4.45)

Figure 4.39 Chen's Taiwanese Indigenous collection:
Yami boat.

Source: Mr. Chen

Figure 4.40 Yami boat and wood carvings on the wall.

Source: Mr. Chen

¹²⁹ "Taiwanese Aborigines." *Wikipedia, the Free Encyclopedia*. 20 Jan. 2011. 10 Feb. 2011.
<http://en.wikipedia.org/wiki/Taiwanese_aborigines>.

¹³⁰ "Taiwan's Culture and Art." *AsianInfo.org*. 10 Feb. 2011.
<<http://www.asianinfo.org/asianinfo/taiwan/pro-art.htm>>.

Figure 4.41 Life size goat by Taiwanese indigenous people
Source Mr Chen

Figure 4.42 Picture of part of Chen's indigenous collection
Source Mr Chen

Figure 4.43 Taiwanese Indigenous hunting tools
Source Mr Chen

Figure 4.44 Corner of Mr. Chen's current private museum.
Source Mr Chen

Figure 4.45 Taiwanese Indigenous totem poles.
Source Mr Chen

4.4. Design Program:

The project I am proposing is a residential house for a family of four. This house will use modern architecture to create a scenario in a space that represents both Eastern traditions and Western contemporary architecture, by incorporating principles of Chinese traditional ideologies into the design.

In dealing with the relationship between the house and its unique site, which is farmland, I will try to improve the relationship between architecture and its surroundings by allowing both to engage in a “dialogue”. This way, city people will be able to rethink the relationship between man-made and natural environments, and focus on aspects of nature they would not normally have noticed. The architecture will be designed to incorporate ecology, according to the limitations and common grounds between the architecture and the site.

My client also plays a significant role in my design, as the evolution of the design of his previous three houses will serve as a guideline for this project: a house that will become an ultimate haven for his family. This house will represent the story of his life, showing the progress he has made in his architectural career. This design is also made to house his collection of custom furniture and designer furniture. His passion for Taiwanese indigenous art, bonsai art and Chinese antiques, such as Ming Dynasty furniture, is the reason that this home will function as a lived-in art gallery, made with natural, local materials and lights that serve as a backdrop to a magnificent collection of artefacts. It is important to note that his belief in Feng Shui limits the design in some ways. Most importantly, considering my client is a traditional husband and father who emphasizes the value of family, this design will result in a dwelling that becomes a sanctuary, where old ways will have new expression, which resonates their present condition.

Site Analysis:

Figure 4.46 The 0.815 acre land that Mr. Chen bought (red).
Roads are highlighted in yellow.
Source: Mr. Chen

The site is located in Danshuei Township, Taipei County. Driving north down the major road in Danshuei, Dan Jin Road, then turning left on Section 1 of Bei Xin Road, one will approach this 0.815 acre land Mr. Chen bought (Fig. 4.46) (Fig. 4.47), hiding in the mountains, through a one lane road (Fig. 4.48). The cascading mountains, which rise out of the ground like a stairway to the sun, and the vast prairies covered with trees, used to be the home to generations of farmers and the sites of years of agricultural development (Fig. 4.49). These two features are merged together in this part of Danshuei Township. One can see endless horizon because it is stretched by the mountains, filled with terrain that appears to undulate as if it was turning waves. It is a site embraced by nature. The client chose this site because it is so different from where he previously lived; view from the site is cinema-worthy, and

very different from the flashing lights of the big city. Here, one can truly find pureness and simplicity in his life.

Figure 4.47 Site plan.
Source: Diagram by author

Figure 4.48 The one lane road leading to the site.
Source: Photograph by author

Figure 4.49 Danshuei Mountain in Danshuei Township.

Source: Photograph, Danshuei. By Hsu, 11 Aug. 2010, 2 Apr. 2011. <http://tw.myblog.yahoo.com/jw!iH RUbvueB0_XgsH16mY-/article?mid=11615&next=7608&f&fid=26>.

Facing south, the mountains descend from the left to right gradually (Fig. 4.50, 4.51), forming a favourable external environment according to Feng Shui, with higher mountains on the Green Dragon side and lower hills on the White Tiger side. The house will be placed on the high point of this site, overlooking mountains and farmlands.

Figure 4.50 Looking out to the west of the site.

Source: Photograph by author

Figure 4.51 Looking out to the east of the site.

Source Photograph by author

In Taiwan, typhoon season lasts from July to September, and is a major problem that should be considered as part of the design. Winds coming from the north-west direction are the least desirable, and so the building will be face south with a minimum amount of windows on the north side, which is the back of the building.

The slope of the site (from the highest to the lowest point) is approximately 22.4% (Fig. 4.52), creating a valley that will hug the future building (Fig. 4.53).

Figure 4.52 North - south Section (Site)

Source Diagram by author

Figure 4.53 West elevation
Source: Diagram by author

Program:

- 0.815 acres of total privacy
- 825 square metres (including basement)
- 3 levels with basement
- 4 bedrooms
- Guest suite
- 1 master suite with fireplaces & sitting areas
- 1 living room with fireplace
- 1 family room with fireplace
- 2 dining rooms
- 2 tea rooms
- 1 private gallery & 1 open gallery
- 1 library/office
- 1 study area
- 1 conference boardroom
- Open kitchen
- Security system & fire alarms throughout
- Bonsai garden terrace
- Landscape
- Micro wind generator
- Biodigester
- Ecological water pond

Exterior:

Inspired by the past; built for the future.

The Growth:

Home is a place where members of the family grow together, and so the shape and layout of the place will naturally grow with the members, while at the same time, their personal experience, thoughts and self-reflection will also evolve. Therefore, the space of a home will be a forever-unfinished organism, which changes based on the members living in it; the flexibility of compartments and spaces will vary with their needs. The progress of a house over its life reflects the family's life and imagination.

Feature:

Modern architectural design approaches will be used to create a scenario in a space that represents Eastern traditions and Western contemporary techniques by incorporating principles of Chinese traditional ideologies into the design. As requested by Mr. Chen, the front of the house faces slightly southwest instead of due south, for Feng Shui guideline. In Feng Shui, the front door should not directly face a mountain, but on the site, the highest mountain is on the south side, leaning towards left. One should also consider placing the front door to face a more prosperous Qi direction because the front door acts as the mouth of the house, breathing in the Qi for the house. For example, according to Feng Shui analysis, from 2004 to 2023, the prosperous Qi is situated in the northwest, due south, and in the north. One needs to consider those directions in combination with the location of mountains and river.¹³¹

¹³¹ Zhang, Shureng. 黄帝宅经: 风水心得[House by the Yellow Emperor: Feng Shui Tips]. China: Unity, 2009. ISBN: 9787802147386. Sohu Book. 20 Jan. 2011. <<http://lz.book.sohu.com/serialize-id-14292.html>>.

The inspiration for the design comes from bonsai art and its relationship with beauty and architecture. The design is based on the formal upright style bonsai, “Chokkan”,¹³² which means “straight up to the sky” in Chinese. The Chinese character “tian”, literally meaning sky, is the foundation for the formal upright style. My house’s exterior design resembles both the formal upright bonsai style and the Chinese character “tian”. This style of bonsai is known for its balanced form with symmetrical layers of branches and leaves on both sides, a form that my design attempts to reflect (Fig. 4.54). On the other hand, the Chinese character “tian” denotes heaven or nature in Confucian ideology, which is embodied by the courtyard design on the top levels of the house. The Confucian concept of the “Doctrine of the Mean” is also embodied by the main north-south axis of the house. The house is symmetrical, with greater space in the middle and smaller spaces on the sides; this concept is also applied to the sloping roof design. This style of plan represents order and hierarchy, with the centre being superior and sides being inferior. (Fig. 4.55)

Figure 4.54 The concept of reinterpretation of bonsai and Chinese Ideology on my design.
Source: Diagram by author

¹³² Yashiroda, Kan. "For Bonsai Beginners." *Handbook on Dwarfed Potted Trees: the Bonsai of Japan*. Brooklyn, NY: Brooklyn Botanic Garden, 1984. 33.

Figure 4.55 South elevation (Front façade)

The house is symmetrical, with greater space in the middle and smaller spaces on the sides.

Source. Diagram by author

The ground floor of the house is below grade, because the soil in the back of the house will be excavated (Fig. 4.56). As one approaches to the entrance door, strong contemporary Chinese motifs come into view (Fig. 4.57). Steps on the reflecting pond welcome one to the front door. This also serves a Feng Shui reason, providing flowing Qi and wealth for the family. The ground floor is a modern design with open spaces, while the upper three levels resemble a traditional courtyard house with an open side in front to take in the impressive view. The courtyards on the higher levels are smaller than the ones below, and the second floor contains a 270 degree balcony on three of the four sides of the building. There is a central courtyard on the second and third floors, which acts as the gathering area for the family. A roof terrace is located on the fourth floor, fulfilling one of Le Corbusier's "five points of a new architecture".¹³³ The layering of the house moves from public to private, as the

¹³³ 1. Pilotis, 2. A roof garden, 3. A free floor plan, 4. Ribbon windows, 5. A free façade.

central terrace with a 270 degree balcony on the second floor serves as a public area for the family members, whereas the courtyard terrace on the third floor is a more enclosed area, meant only for my client, who will live on that floor. (Fig. 4.58)

Figure 4.56 The ground floor of the house is below grade.
Elevation plans.

Source: Diagram by author

Figure 4.57 An example of a house with strong contemporary Chinese motifs: Mandarin Palace, Shanghai

Source: Mandarin Palace Shanghai. 2008. Photograph. Shanghai. Kinpan.com. 14 June 2008. 08 Jan. 2011.
<http://admin.kinpan.com/html/Floor/337/37264/33373726477_1.html>.

Figure 4.58 Concept of each floor layout.
Source: Diagram by author

The principal structure of the house is in concrete, but the second-floor family terrace garden and balcony create a harmony of contrast: Yin Yang. In this case, the lines of the angular and abrupt concrete structures are softened with plants. This symbolism of male and female principles – the garden expresses woman, the house expresses man – is announced when one sees the house from the front. The third-floor courtyard terrace combines the feeling of openness with a sense of enclosure (Fig.4.59). This brings the outside into the interior while at the same time securing privacy for the living space. The view between the meditation room and the bedroom, across the house, is one of nature interspersed with living space. The trees for the terrace will be carefully chosen for their soft and delicate lines, which counter the austerity of the space. The

small roof terrace on the top floor becomes the most private place for my client's bonsai hobby.

Figure 4.59 Sample of third floor courtyard terrace.

Source: Freeman, Michael. *Pocket Gardens: Contemporary Japanese Miniature Gardens*. New York: Universe Publ., 2008.

As the site is surrounded by dramatic valleys and hills, one can sketch out the contour lines from the valley's base to the northeast ridge. After re-analysis and interpretation of the lines and slopes, the geometric outline can be re-sketched, and an extension of the ridge line to the valley can be drawn to depict the three sloping roofs, house and landscape. This blurs the relationship between the architecture and its environment, creating a "harmony of man with nature." Like the Miho Museum, nature can have its moment here. Since the house is situated in the mountains, rain becomes one of the natural phenomena that residents will encounter more often here than they would living in the city. This house can be transformed into a metaphor of nature: in the rain, family shares quality time together. The act of sheltering from the rain is a disappearing scene in city life, and feeling the touch of rain drops on one's hands is even rarer. Here, the slopping roofs act as

drainage gutters; during wet weather, rain drops flow through the roof and then knock on the ground, creating sounds one would not have noticed living among concrete and highways. Looking out the window, one sees his or her image reflected on the glazing on a background of rain marks. All of these scenes will touch each member of the family, making them more aware of the connection between themselves and nature.

Figure 4.60 An example of contemporary sloping roof.

Source: Mandarin Palace Shanghai, 2008.
Photograph, Shanghai.
Kinpan.com, 14 June 2008. 08 Jan, 2011.
<http://admin.kinpan.com/html/Floor/337/37264/33373726477_1.html>.

Since Mr. Chen is proud of his Chinese roots and cares about the environment, I decided to use local materials intensively in the design. Local pebbles are used in making terrazzo concrete, which will be used on the exterior of the house. Initially, I wanted to use fair-faced concrete or a stucco wall for my exterior design; however, due to the climate in Asia, both materials are not sustainable, as they become discolored rapidly. In order to create a similar effect to fair-faced concrete, I will mix fine, light-colored pebbles with white concrete, so that from a distance, the exterior wall looks as if it was finished with fair-faced concrete. This way, material costs will be cut extensively and the house will also be eco-friendly and sustainable. This also represents the concept of “harmony of man with nature,” as the settlement construction respects and conforms to the natural

environment first. To actualize a contemporary feeling, aluminum is used in creating the three sloping roofs (Fig. 4.60). Instead of a solid slab, the roof is made by aluminum tubes weaved in a unique way, creating a quality of permeation and emptiness by taking advantage of the light. Underneath the aluminum tubes is sloping glass. Light pours into the top floor, via skylight in between each tube.

Figure 4. 61 3D model, drive to the house.
Source: diagram by author

Figure 4. 62 3D model, rear view.
Source: diagram by author

Figure 4. 63 3D model
Source diagram by author

Figure 4. 64 3D model, sloping roof.
Source diagram by author

Figure 4. 65 3D model, courtyard terrace.
Source diagram by author

Figure 4.66 3D model, eye level view.
Source: diagram by author

Figure 4.67 3D model, facade.
Source: diagram by author

Figure 4.68 3D model, west view.
Source: diagram by author

Figure 4. 69 3D model, bird's eye view.
Source: diagram by author

Landscape:

A micro wind generator will be placed behind the house to fully utilize the climate of the mountain area, while a biodigester and an ecological water pond will also be placed in the landscape to create an ecologically friendly environment. The landscaping will have a variety of local species, while the selection of the trees or flowers in the landscaping will also improve land sustainability.

Figure 4. 70 Trees Mr. Chen selected for his landscape.
Source photograph by author, Mr. Chen's current garden

Bald cypress, maple trees, cherry blossom trees, and plum trees will be planted, to show how the scenes and colors change with the seasons (Fig. 4.70). Dwellers' lives become more interesting with the ever-changing view.

Species used for bonsai art, such as black pine, Chinese juniper, and Taiwan juniper, will also be planted on the landscape (Fig. 4.71). Since these species are often cultivated and trained as bonsai, regular attention and maintenance will be needed. On the other hand, bald cypress, maple trees, cherry blossom trees, and plum trees will be present in their natural forms; as a result, less maintenance will be needed. The front yard represents the family's wealth in the Chinese tradition. In the application of Feng Shui, plants are often used as a way to bring luck and protection, so the plants have been given different meanings; black pines and pagoda trees, as species that will bring protection for the family, will be planted as part of the landscaping. Flowers like the magnolia and osmanthus will also be included, as they are seen as bringing wealth and luck to the family. Passionate about bonsai art, Mr. Chen personally handpicked bonsai trees to work them into art in his landscape. Ponds, streams, hills, stones, trees, flowers, and paths are used to create a miniature reproduction of natural scenery and artificial hills will be created to recycle the soil that was excavated when building the house. On both sides of the house, foundation walls on the exterior are shown. To blend in with its natural environment, local stones are used in building those foundation walls (Fig. 4.72), so balance between man and nature is achieved. (Fig. 4.73)

Figure 4. 71 Large bonsai selected by Mr. Chen.
Source: photographs by author, from Mr. Chen's current garden in Taiwan.

Figure 4.72 An example of foundation wall built by stones.

Source Freeman Michael *Pocket Gardens Contemporary Japanese Miniature Gardens* New York Universe Publ, 2008

Figure 4.73 Concept of large bonsai tree in landscape (looking out from the house).

Source diagram by author

Interior:

The Heritage:

With advancing modern technology, the limitations that confined traditional architecture no longer exist. However, modern technology should not replace all the past experiences; if old memories cannot be accumulated, then some good and useful knowledge will not pass on to new generations – architecture will no longer reflect the social and human context and function, and will be reduced to a subject limited by the local economy.

The Features:

The layout of the ground floor strictly follows Confucian ideology. A nine-grid system can be seen on the floor plan, creating nine bays for the space. This is the traditional method of spatial organization, with three bays in width and three bays in depth. According to the hierarchical system valued in Confucianism, the Chinese traditional dwelling can be classified by the number of bays it has - the more bays there are, the higher status the owner is. Nine is considered the biggest number in a decimal scale by ancient Chinese, and can only be used by royalty. This layout suggests the wealth and rank of the family living here. The side distance on each bay is a multiple of three. This rectangular, open area creates a contemporary architectural space that feels cool and rigid. Throughout the house, there is no missing corner in every room, which represents a good layout according to Feng Shui; other Feng Shui details, such as the stipulation that no doors should face each other directly, are also incorporated in the design. (Fig. 4.74)

Figure 4. 74 Ground floor plan.
Source: diagram by author

Figure 4. 75
Second floor plan
Source: diagram by author

Figure 4. 76 Third floor plan
Source: diagram by author

N
↑

Figure 4. 77 Fourth floor plan
Source: diagram by author

N
↑

The floor is separated by a central hall, which acts as a central axis; most of the circulation activities will be performed in these central three bays. Each bay in the plan can be categorized as a public area for guests or a private place for the family, while the left three bays create an open gallery space for the public. Mr. Chen's collection of Taiwanese indigenous art will be showcased along the walls, and a Yami's hand-built nail-less boat, which can carry ten passengers, will create a focal point on the back of this living room/gallery. In contrast, the right three bays are considered a more private space, with the family kitchen and dining room. It will become part of each family member's daily living - conversation will be shared in the open kitchen throughout the preparation of breakfast or dinner. On the back side of the building, the ground will be excavated to create sunken gardens as an extension of both the left and right bays, so residents will feel as if they are living on the ground floor instead of the basement. Bamboo will be planted in the sunken gardens, bringing an Asian aesthetic to this open space. This will also create views all around the ground floor. High-performance glass and frit glazing throughout will bring in natural light, illuminating the open spaces while providing a visual counter to the weighty feel of the terrazzo concrete. (Fig. 4.78)

Figure 4.78 Concept of Mr. Chen's collections on ground floor.
Source: diagram by author

People's attention will be drawn toward a circular spiral staircase, which will be placed in the central bay, shifting slightly to the left. The circular shape of the staircase brings warmth to the rectangular space, welcoming residents to come to the more private and hearty upper levels. Following the imaginary corridor in the centre which is created by the use of space, one is led, step by step, to each living space. The experience of the house moves from open to self-reflecting and private. Like the "Peach Blossom Spring" story used in I.M. Pei's design approach for Miho Museum, this house will reveal part of itself a little bit at a time; layer by layer. The importance of the layering effect is stressed because of Mr. Chen's practice of the art of bonsai. Layers upon layers of design aesthetics can be seen. Like the "modesty" idea valued by Confucianism, the contents of this house are expressed implicitly and modestly; as he climbs the levels, my client will eventually stumble into his hidden paradise.

Under the guidance of the staircase, one slowly approaches the more private levels of the building. The house still holds some mystery as one moves near to the main family area, where a large viewing platform, like a wide landscape painting, comes into view. The house extends from the middle to both sides like a Chinese scroll painting. Resembling a courtyard house layout, the central courtyard acts as a gathering area for family activities, especially for the young ones. This is a floor for the young, consisting of bedrooms, guestrooms, and a study. Traditional courtyard houses emphasized closed circulation and enclosed features; however, my courtyard floor plan opens up on all sides of the house. With a central terrace and surrounding balcony, this breathtaking view of rows of mountains can be enjoyed from almost every corner. (Fig. 4.75 & Fig. 4.79)

Figure 4.79 Concept of Mr. Chen's collection on the second floor.

Source: diagram by author

The ascending levels follow a hierarchical system, in which status is shown by the level where one lives; the higher the level, the higher the status. The third level is the living area for my client and his wife, consisting of a master bedroom suite, an office and a meditation room (Fig. 4.80). Still resembling a traditional courtyard house plan, this level is more enclosed and private than the second. A central terrace featured as the middle courtyard is enclosed by the living area. A stair case is placed in the courtyard, leading to the upper level, creating an ingenious link between the spaces that allows a gradual exploration of the upper levels. People's perception of the courtyard changes progressively depending on their location in space, and like Le Corbusier's concept of cinematic movement, this outside staircase provides gradual ascent from the lower level. This outdoor staircase links the upper two levels together, connecting Mr. Chen's personal spaces. (Fig. 4.76 & 4.81)

Figure 4.80 Concept of meditation room.
Source: Diagram by author

Figure 4.81 Concept of Mr. Chen's collections on third floor.
Source: Diagram by author

The highest level is the superior space in the house. It is designed to be Mr. Chen's Shangri-La. Resembling the traditional courtyard house layout again, this level has the most prestigious view. It appears as if the corridors linking to the rooms hug the central bay, providing "protection" for the centre (Fig. 4.82). It is a personal and private gallery for Mr. Chen: a sacred place to host his own paintings and bonsai art. The left and right wings are designed as narrow corridors leading to rooms with glazing on all sides. Light pours into the rooms and corridors from generous windows overlooking the landscape. The left wing will become the gallery for Mr. Chen's artwork, such as paintings and Chinese antiques, completing the illumination of this very sanctuary-like space. The right wing extends out to the roof terrace, with a staircase linking this level to the lower level. Here will be the home for Mr. Chen's countless and priceless pieces of bonsai art; his bonsai trees will be displayed on the terrace so he can enjoy a self-constructed painting of bonsai while looking outside from the long and narrow corridor. During harsh weather, such as the typhoon season, Mr. Chen can move those bonsai trees inside to the room at the end of the corridor for protection. In the central indoor space, Mr. Chen's favourite seating pieces of 20th century furniture by design giants will be placed, so this place can truly become his hidden paradise, where he sips on a cup of tea on his favourite chair, "hugged" by his favourite pieces of art, after a joyful dinner with his family. (Fig. 4.83)

**enclosure of
human body**

**enclosure of
courtyard
house**

**Figure 4.82
Enclosure of
human body and
enclosure of
courtyard house.
Resembling
building hugging
the middle
courtyard.**

Source: Zhang, Yu-kun,
and He-nan Li.
"Emergence
Mechanism of
Traditional Chinese
Courtyard House."
*Journal of Tianjin
University (Social
Sciences)* 2 (2004).

Figure 4.83 Concept of Mr. Chen's bonsai collection on fourth floor.
Source. diagram by author

A combination of antique Ming Dynasty furniture and original pieces of 20th-century furniture by design giants, including Le Corbusier, Charles and Ray Eames, and Wright, will be used throughout the house (Fig. 4.84).

Figure 4.84 An example of mixed furniture of Ming Dynasty pieces and modern pieces (Chen's past office).

Source: Mr. Chen

The Memory:

The experience of a home must contain two parts: creation and history. A home should contain family memories, such as a heated conversation around the dining table, a sweaty family work-out of garden work, or a lazy afternoon of tanning in the courtyard; then these memories will find their proper existence in a new location along the timeline. During this process, memories of the home can be prevented from fracturing as the family grows. There will never be a sense of alienation in the family while living in such a house; the mountains, scattered hills and farms, together with this house, will tell a story that only belongs to Mr. Chen and his family.

C hapter 5: Conclusion

In this thesis design, challenges caused by China's fast-paced development and subsequent urbanisation are raised and an architect's proposition is discussed. Taipei, an overcrowded city, is used as an example for this scenario, which takes the concept of village living intended for upper middle class households, retired people and working professionals, with a housing design that reflects Chinese traditions and ideologies, to ultimately bring a Chinese family back to the traditional family value.

The guidelines for the planning of the project are laid out and implemented. This thesis would serve its readers not only as a method for incorporating an authentic culture and ideal family life architecturally into people's physical lives, but also as a system for providing a better alternative to living in overcrowded cities.

In searching substance for contemporary architecture designed for family-oriented traditional households, traditional Chinese ideologies are studied and incorporated into a housing design. Taiwan's farmland policies are carefully studied to provide a cheaper substitute site for targeted households in this project, while moments from contemporary architecture such as Villa Savoye, Fallingwater and the Miho Museum are used as a reference in the process of realizing the needs for a house that can create heritage and memory. Instead of literally copying Chinese traditional architectural elements, the spatial, architectural and cultural values derived from traditional Chinese ideologies serve both an educational purpose for modern families in Taipei and a solution to the housing challenges in an overcrowded city. Beyond the ideologies reflected in house, the house is also functional. (Fig. 5.1)

A client is selected and custom research is done on the client's past houses to find what worked and what did not for the client and his family. Using gathered information from the Eastern and the Western worlds, and modern and historical

ideas, I attempted to create a sanctuary, where old ways will have new expression while resonating with a present condition, reflecting the story of my client and his family.

Figure 5.1 A vision of the future on Taipei County farmland.

Source: 2010. Photograph. *Gene21.com.tw*. 2010. 08 Jan. 2011. <<http://www.gene21.com.tw>>.

Works Cited

- Chami, Camille. "Le Corbusier and Villa Savoye Remembered." *Archinnovations*. 25 Oct. 2007. 14 Feb. 2011. <<http://www.archinnovations.com/featured-projects/houses/le-corbusier-and-villa-savoye/>>.
- Chao, Lindi. "苏州园林风水佳穴的实践标本[Suzhou Garden Feng Shui Practice]." *China National Geographic* 1 (2006): 138-43.
- "Chapter 9: Agriculture." *Understanding Taiwan Series*. National Institute for Compilation and Translation. 10 Jan. 2011. <<http://dic.nict.gov.tw/~taiwan/geography/geography-ch9.htm>>.
- Chen, Chien-Liang, Chung-Ming Kuan, and Chu-Chia Lin. "Saving and Housing of Taiwanese Households: New Evidence from Quantile Regression Analyses." *Journal of Housing Economics* 16.2 (2007): 102-126.
- Cherry, Colin. *On Human Communication*. Cambridge, MA: MIT, 1978.
- "COA Reformulating Idle Farmland Strategy." *China Post Online - Taiwan, News, Breaking News, World News, and News from Taiwan*. 16 Feb. 2011. 1 Mar. 2011. <<http://www.chinapost.com.tw/taiwan/national/national-news/2011/02/16/291254/COA-reformulating.htm>>.
- Cohen, Marc J. "Chapter 8: Social Issues." *The Unknown Taiwan*. Washington, D.C.: North American Taiwanese Women's Association, 1992. *Professor Chen Wen-Chen's Memorial Foundation*. 23 Aug. 2010. Web. 20 Sept. 2010. <http://www.cwcmf.net/Taiwan/html/chap8_social.html>.
- Council of Agriculture. "Agricultural Land and House-construction Policy." *Agricultural Land Regulation Information System*. 16 June 2004. 19 Nov. 2010. <<http://talis.coa.gov.tw/ALRIS/LawDetail.asp?tlID=2006>>.
- Crop Production Office. "Overview of the North Branch of Agriculture: The Main Crop Cultivation and Production Statistics." *Council of Agriculture, North Branch of the Department of Agriculture and Food News*. 11 Aug. 2010. 13 Mar. 2011. <http://www.tefd.gov.tw/Zh-tw/index.aspx?ModuleCode=ColumnShow&pm_id=fb326db7-9511-4aea-a94b-491c79bb2fdd>.

- "Demographics of Taiwan." *Wikipedia, the Free Encyclopedia*. 2009. 13 Sept. 2010. <http://en.wikipedia.org/wiki/Demographics_of_Taiwan>.
- "Fallingwater." *Wikipedia, the Free Encyclopedia*. 11 Jan. 2011. 20 Jan. 2011. <<http://en.wikipedia.org/wiki/Fallingwater>>.
- Fei, Xiaotong. *From the Soil: the Foundations of Chinese Society*. Berkeley: Univ. of California, 1992.
- Gluckman, Ron. "Flash City." *Ron Gluckman in Cyberspace: Architecture in China*. July-Aug. 2003. 17 Oct. 2010. <<http://www.gluckman.com/ShanghaiArchGeo.html>>.
- Hilton, Isabel. "When a Billion Chinese Jump by Jonathan Watts | Book Review | Books | The Guardian." *Latest News, Comment and Reviews from the Guardian | Guardian.co.uk*. 17 July 2010. 15 Mar. 2011. <<http://www.guardian.co.uk/books/2010/jul/17/when-billion-chinese-jump-watts>>.
- Hsieh, H.-Y. "The 1990s Taiwan Residential Construction Boom: a Supply Side Interpretation." *Construction Management and Economics* 23 (2005): 268.
- Itoi, Kay. "I. M. PEI'S NEW MUSEUM." *Artnet.com Magazine News - The Art World Online*. 2004. 20 Feb. 2011. <http://www.artnet.com/magazine_pre2000/news/ittoi/ittoi11-26-97.asp>.
- Johnson, D. Gale. "Can Agricultural Labour Adjustment Occur Primarily Through Creation of Rural Non-Farm Jobs in China." *Urban Studies* 39 (12): 2163-2174.
- Lai, Zhongxin. "Weekly Observation." *CNCCU - Xinyi Center for Real Estate*. 30 Nov. 2010. 1 Dec. 2010. <<http://www.ncscre.nccu.edu.tw/research/20101130comment.pdf>>.
- Lawson, Bryan. *How Designers Think*. London: Architecture, 1980.
- Le Corbusier. *Towards a New Architecture*. Trans. Frederick Etchells. New York: Dover Publications, 1986.
- Lee, C.Y. & Partners. "Green Design for Tesco Living Mall." PowerPoint presentation. 3FI, No.6, Tun-Hua N. Rd., Taipei, Taiwan, 10595. 3 Jan. 2008.

- Legge, James. *Li Chi: Book of Rites*. Whitefish: Kessinger, 2003. Google Books. Web. 14 Oct. 2010.
 <http://books.google.ca/books?id=RdJpVSOJniAC&printsec=frontcover&dq=book of rites&hl=en&ei=DqJ9TfXcD4aMrQHU573TBQ&sa=X&oi=book_result&ct=book-preview-link&resnum=1&ved=0CC0QuwUwAA#v=onepage&q&f=false>.
- Legge, James. *Li Chi: Book of Rites*. Whitefish: Kessinger, 2003. 364-464. Google Books. Web. 14 Oct. 2010.
 <http://books.google.ca/books?id=RdJpVSOJniAC&printsec=frontcover&dq=book of rites&hl=en&ei=DqJ9TfXcD4aMrQHU573TBQ&sa=X&oi=book_result&ct=book-preview-link&resnum=1&ved=0CC0QuwUwAA#v=onepage&q&f=false>.
- Levine, Neil. "Fallingwater." *PBS: Public Broadcasting Service*. 23 Feb. 2011.
 <http://www.pbs.org/flw/buildings/fallingwater/fallingwater_exterior03.html>.
- Li, Yunhe. 華夏意匠-中國古典建築設計原理分析[Chinese Artistic Conception - Design Principles of Chinese Classical Architecture]. Taipei: Long Tian Publication, 1982.
- Liang, Sicheng. *A Pictorial History of Chinese Architecture: A Bilingual Edition*. Ed. Wilma Fairbank. Trans. Congjie Liang. Tianjin: Bai Hua Wen Yi Chu Ban She, 2001.
- Lim, Sunamita. *Japanese Style: Designing with Nature's Beauty*. Salt Lake City, UT: Gibbs Smith, 2007.
- Machle, Edward J. *Nature and Heaven in the Xunzi - A Study of Tian Lun*. Albany: State University of New York, 1993.
- "New Taipei." *Wikipedia, the Free Encyclopedia*. 1 Nov. 2010. 17 Nov. 2010.
 <http://en.wikipedia.org/wiki/New_Taipei>.
- "MIHO MUSEUM Shangri-La Vol.9." *MIHO MUSEUM*. Mar. 2002. 14 Jan. 2011.
 <http://www.miho.or.jp/english/member/shangrila/vol9/eshan9_4.htm>.
- Myers, Andrew. "Circle Squared." *Robb Report Luxury Home Spring* (2006): 83-91.

Ou, Lei. "Analysis of Traditional Courtyard Space." *Sichuan Building Science* 31.5 (2005): 123.

"北平四合院住宅的組成與構造[Peking Composition and Structure of Residential Courtyard]." *中國建築史論文選輯第二冊[Selections of Chinese Architectural History Papers Book 2]*. Ed. Editorial Department. Taipei: Ming Wen, 1983.

Perez, Adelyn. "AD Classics: Fallingwater House / Frank Lloyd Wright." *ArchDaily | Broadcasting Architecture Worldwide*. 14 May 2010. 10 Feb. 2011.
<<http://www.archdaily.com/60022/ad-classics-fallingwater-frank-lloyd-wright/>>.

Perez De Vega, Eva. "Experiencing Built Space: Affect and Movement." Ed. Alessandro Bertinetto, Farbian Dorsch, and Cain Todd. *Proceedings of The European Society for Aesthetics* 2 (2010): 386-409.

R.A. "China: Second in Line | The Economist." *The Economist - World News, Politics, Economics, Business & Finance*. 16 Aug. 2010. 17 Oct. 2010.
<http://www.economist.com/blogs/freeexchange/2010/08/china_0>.

Shi, Qinlan. "Urban Planning." *Taipei City Bureau of Urban Development*. 20 Jan. 2010. 13 Sept. 2010.
<<http://www.udd.taipei.gov.tw/pages/detail.aspx?Node=111&Page=1165&Index=6>>.

Slavicek, Louise Chipley. *I.M. Pei*. New York: Chelsea House, 2010.

"Suburbanization." *Dictionary of American History*. *Encyclopedia.com*. 2003. 13 Oct. 2010 <<http://www.encyclopedia.com>>.

"Taiwan." *Cities of the World*. *Encyclopedia.com*. 2002. 13 Sept. 2010
<<http://www.encyclopedia.com>>.

"Taiwan GDP Data & Country Report." *Global Finance - The Best Banks | 192 Country Reports | GDP Data*. 2010. 13 Sept. 2010.
<<http://www.gfmag.com/gdp-data-country-reports/166-taiwan-gdp-country-report.html#axzz1GUIZRTDj>>.

"Taiwanese Aborigines." *Wikipedia, the Free Encyclopedia*. 20 Jan. 2011. 10 Feb. 2011. <http://en.wikipedia.org/wiki/Taiwanese_aborigines>.

- "Taiwan's Culture and Art." *AsianInfo.org*. 10 Feb. 2011.
<<http://www.asianinfo.org/asianinfo/taiwan/pro-art.htm>>.
- Tzeng, C.T., and P. Haung. "The Professional Liability of Architects." *Journal of Architecture* 39 (2002): 24.
- Wen, Guoming. "Cautions on China's Urbanization." *The Maureen and Mike Mansfield Foundation*. 2004. 17 Oct. 2010.
<http://www.mansfieldfdn.org/pubs/pub_pdfs/wen0105_chinaurban.pdf>.
- "World Urbanization Prospects: The 2009 Revision Population Database. United Nations. 2009. 15 Oct. 2010.
<<http://esa.un.org/wup2009/unup/p2k0data.asp>>.
- Wu, Yee-sun. *Man Lung Garden Artistic Pot Plants*. Hong Kong: Wing Lung Bank, 1969.
- Yashiroda, Kan. "Dwarfed Potted Trees or Bonsai." *Handbook on Dwarfed Potted Trees: the Bonsai of Japan*. Brooklyn, NY: Brooklyn Botanic Garden, 1984.
- Yashiroda, Kan. "For Bonsai Beginners." *Handbook on Dwarfed Potted Trees: the Bonsai of Japan*. Brooklyn, NY: Brooklyn Botanic Garden, 1984.
- "輕妝淡抹 引人入勝-圓明園福海景區[Yuanmingyuan Fuhai Area]." *中國建築史論文選輯第二冊[Selections of Chinese Architectural History Papers, Book 2]*. Ed. Editorial Department. Taipei: Ming Wen, 1983.
- Zhang, Shureng. *黃帝宅經: 風水心得[House by the Yellow Emperor: Feng Shui Tips]*. China: Unity, 2009. ISBN: 9787802147386. *Sohu Book*. 2010. 20 Jan. 2011. <<http://lz.book.sohu.com/serialize-id-14292.html>>.
- Zeisel, J. *Inquiry by Design*, Cambridge: Cambridge University Press, 1981.