DESIGN FOR IMPROVING SOCIAL INTERACTION OF HIGH-RISE HOUSING COMMUNITY

OOI SHU SHEN

A dissertation submitted in partial fulfillment of the requirements for the award of the degree of

Master of Architecture

Faculty of Built Environment Universiti Teknologi Malaysia

JANUARY 2017

To my beloved family and friends.

ACKNOWLEDGEMENT

First of all, I would like to express my deepest appreciation to my helpful supervisor, Dr. Abdul Halim bin Hussein. The help and support he gave in the whole process of my final dissertation tremendously helped me to complete this project smoothly. I would also like to extend my gratitude to my second supervisor, Assoc. Prof. Dr. Syed Ahmad Iskandar bin Syed Ariffin who guided me on the format of the dissertation from time to time and gave me many advices to complete this dissertation smoothly. Next, i would like to express my appreciation to my thesis panels who are Assoc. Prof. Dr. Mahmud Mohd Jusan and Dr. Tareef Hayat Khan. They had given many ideas and supports to guide me throughout the design thesis.

Besides that, I would like to express my sincere appreciation to my friends who helped me along the way giving support and help. The support and advice they gave me helped me a lot in the completion of this project. In addition, i would like to thank the respondents who have allocated their precious time to participate in my survey.

Finally, my gratitude extends to all my family members for the support they gave me all the time. I truly appreciate the support they gave me.

ABSTRACT

The purpose of this study is to improve the social interactions of the high-rise residential community. This is because nowadays many high-rise housing designs are developed for profit and without considering the culture and social issues of the users in the building. Many people are spending their lifetime to pay for their housing loans. But what they get did not reflect what they pay. Many high-rise housing facilities are often overlooked and social facilities are not provided. Some cases that provided those facilities, they did not maintain from time to time. Active social interaction can promote social harmony and reduce anti-social behaviour among the residents. Therefore, it is very important to instill quality living among the residents to create a strong sense of community in the neighbourhood. There are a few architectural solutions are established to promote active social interactions in highrise residentials based on the analysis of the study group and area. This research was conducted by using interviews, case studies, and questionnaires as the main source of data collection to achieve the objectives. The data collection was done at Johor Bahru area with the target group of Malaysians who commute and work in Singapore but stay in Johor Bahru. From the findings, the author studied the lifestyles and the needs of the target group in order to suggest a few architectural solutions that can be applied to the housing design. Finally, the suggestions are incorporated into the design thesis of high-rise residential.

ABSTRAK

Tujuan kajian ini adalah untuk meningkatkan interaksi sosial dalam masyarakat perumahan berbilang tingkat. Ini kerana pada masa kini banyak reka bentuk perumahan bertingkat tinggi yang dibangunkan untuk tujuan keuntungan tanpa mengambil kira budaya dan isu-isu sosial pengguna di dalam bangunan. Ramai orang yang menghabiskan hidup mereka untuk membayar pinjaman perumahan mereka. Tetapi apa yang mereka dapat tidak mencerminkan apa yang mereka bayar. Banyak kemudahan perumahan bertingkat tinggi sering diabaikan dan kemudahan sosial tidak disediakan. Ada sesetengah kes yang menyediakan kemudahan tersebut tetapi tidak mengekalkan penyelenggaraan dari semasa ke semasa. Interaksi sosial yang aktif boleh menggalakkan keharmonian sosial dan mengurangkan tingkah laku anti-sosial di kalangan penduduk. Oleh itu, adalah sangat penting untuk memupuk kehidupan yang berkualiti di kalangan penduduk untuk mewujudkan semangat kemasyarakatan yang kuat di kawasan kejiranan. Objektif utama kajian ini adalah untuk mencadangkan beberapa penyelesaian seni bina yang dapat menggalakkan interaksi sosial yang aktif di kediaman bertingkat tinggi berdasarkan analisis kumpulan kajian dan kawasan. Kajian ini dijalankan dengan menggunakan kaedah temu bual, kajian kes dan soal selidik sebagai sumber utama pengumpulan data untuk mencapai objektif. Pengumpulan data dilakukan di kawasan Johor Bahru dengan kumpulan sasaran rakyat Malaysia yang berulang-alik dan bekerja di Singapura tetapi tinggal di Johor Bahru. Dari hasil kajian, penulis meneliti gaya hidup dan keperluan kumpulan sasaran untuk mencadangkan beberapa penyelesaian seni bina yang boleh digunakan pada reka bentuk perumahan. Akhirnya, cadangan-cadangan tersebut dimasukkan ke dalam tesis reka bentuk kediaman bertingkat tinggi.

TABLE CONTENTS

CHAPTER		TITLE	PAGE
	DEC	CLARATION	v
	DEI	DICATION	vi
	ACI	KNOWLEDGEMENTS	vii
	ABS	STRACT	viii
	ABS	STRAK	ix
	TAI	BLE OF CONTENTS	X
	LIS	T OF FIGURES	xiii
	LIS	T OF TABLES	XV
	LIS	T OF APPENDICES	xvi
1	INT	RODUCTION	1
	1.1	Introduction	1
	1.2	Problem Statement	2
	1.3	Research Aim & Objectives	3
	1.4	Research Questions	3
	1.5	Significance of Study	4
	1.6	Scope of Study	4
	1.7	Expected Findings	4
	1.8	Research Methodology	5
	1.9	Structure of Dissertation	5
2	LIT	ERATURE REVIEW	7
	2.1	The Importance of Social Interaction	7
	2.2	Relationship between Social Interaction and Privacy	8
	2.3	Proxemics, Personal Space, Territoriality and Defensible	le

		Space	9
	2.4	How Physical Environment Promotes Social Interaction	13
	2.5	Shared Spaces In High-rise Building Community	14
	2.6	Future Housing in 'Vertical Kampung'	16
	2.7	Conclusion	17
3	RES	SEARCH METHODOLOGY	18
	3.1	Introduction	18
	3.2	Literature Review	18
	3.3	Research Procedure	20
	3.4	Data Collection	20
		3.4.1 Questionnaire Design	21
	3.5	Data Analysis	21
	3.6	Conclusion	22
4	CAS	SE STUDIES	23
	4.1	Introduction	23
	4.2	The Interlace, Singapore	23
	4.3	Kampung Admiralty, Singapore	25
	4.4	The Met Tower, Bangkok, Thailand	28
	4.5	Conclusion	32
5	FIN	DINGS AND DISCUSSION	33
	5.1	Introduction	33
	5.2	Profile of Respondents	36
		5.2.1 Age and Status	36
		5.2.2 Residence Place During Work	38
		5.2.3 The Main Reasons That Respondents Stay In Johor Bahru Instead of Singapore	39
		5.2.4 The Working Time	40
		5.2.5 Weekday and Weekend Activities	41
		5.2.6 Advantages and Disadvantages of Malaysians	

		Working in Singapore	42
		5.2.7 Concerning Issues While Living In Multi-Storey Housing	44
		5.2.8 Preferred Activities To Be Involved In With Other Neighbours	r 46
	5.3	Discussion	47
	5.4	Conclusion	51
6	CO	NCLUSION AND RECOMMENDATIONS	52
	6.1	Introduction	52
	6.2	Conclusion	53
		6.2.1 First Objective: Daily Lifestyles	53
		6.2.2 Second Objective: Social Activities	54
		6.2.3 Third Objective: Social High-Rise Residential Des	sign54
	6.3	Limitation Encountered During Dissertation Process	55
	6.4	Recommendations For Further Research	56
REF	ERENC	CES	57
APP	ENDIX	A	60
APP	ENDIX	В	66

LIST OF FIGURES

FIGURE NO) TITLE	PAGE
2.1	A scheme of six realms of community and privacy	9
2.2	Sketches of behavior setting based on working	11
	activities	
2.3	Example of group interaction with break-out area	12
3.1	Research Methodology Flow Chart	19
3.2	Chart of Data Collection Procedure	21
4.1	Top view towards the Interlace building	24
4.2	Arrangement of the building blocks with maximum	24
	green area	
4.3	Floor plate of The Interlace	25
4.4	Perspective of the Kampung Admiralty	26
4.5	Perspectives of the Community Plaza	27
4.6	Cross-sectional perspective of Kampung Admiralty	28
4.7	Exterior view of The Met, Bangkok	29
4.8	Community sky terraces in The Met	30
4.9	The unit layout of The Met	30
4.10	The private balcony of each housing unit	31
4.11	The section level of each floor in The Met	31
5.1	Location of the proposed high-rise housing area	34
5.2	The result of the age's percentages from the	37
	respondents	
5.3	The result of the status's percentages from the	37
	respondents	
5.4	The description of brain drain category people	38
5.5	The result of the residence place during work's	39

	percentages from the respondents	
5.6	The reasons that respondents stay in Johor Bahru	40
	instead of Singapore	
5.7	The working time for Malaysians that commute daily	41
	to Singapore	
5.8	Daily activities after work	42
5.9	Weekend activities	42
5.10	Advantages of Malaysians Working in Singapore	43
5.11	Disadvantages of Malaysians Working in Singapore	44
5.12	Concerning issues while live in multi-storey housing	45
5.13	Preferred activities to be involved with other	46
	neighbours	
5.14	Floor plate of towers with communal sky pocket	47
	garden	
5.15	Unit Floor plate of towers with communal sky pocket	48
	garden	
5.16	Placement of communal sky pocket garden in the high-	49
	rise residential	
5.17	Decentralise the communal facilities	50
5.18	Children facilities incorporated in the communal	51
	facilities	

LIST OF TABLES

TABLE NO	D TITLE	PAGE
2.1	Considerations when design public spaces in high-rise	14
	building community	
2.2	Summary and findings of literature reviews	17
4.1	Summary of the case studies' design approaches	32
5.1	Prices of residential houses in selected schemes in	35
	Johor Bahru	
5.2	Residential selling price per square feet	36

LIST OF APPENDICES

APPEND	IX TITLE	PAGE
A	List of Compilation of Design Thesis Presentation Boards and Drawings	60
В	List of Data Collection Instruments	66

CHAPTER 1

INTRODUCTION

1.1 Introduction

Johor Bahru is one of Southeast Asia's popular urban areas and an important industrial, tourist and commercial hub for Southern Peninsular Malaysia. Johor Bahru is the capital city of Johor State, Malaysia. With about 1.5 million people in the city and nearly two million in the metropolitan area, it is the second most popular city in Malaysia and one of the cities with high a population growth rate. The city is an important commercial, industrial, and tourism hub for southern Malaysia and one of the biggest industrial centers of the country. Everyday, there are thousands of people who cross over to work in Singapore. It is one of the busiest crossings in Southeast Asia.

Due to the ringgit's depreciation in Malaysia, many people choose to work in neighbouring countries, especially Singapore, for better income. However, this is not a new trend and has happened since a few decades ago. Recently, it has become more apparent as the currency exchange rate is depreciating.

1.2 Problem Statement

According to the Human Resource Ministry, there are about 350,000 Malaysians working in Singapore. They are the group that facing traffic jam at road or custom Johor every day. Most of the commuters do not have enough resting time during weekdays as they wake up early and come back home late.

Those workers who commute from Malaysia to Singapore daily are advised by Johor Unity Executive and Human Resources Councilor, R. Vidyanathan to consider taking up a job back in Malaysia to avoid the recent causeway toll hikes. This is because their daily routine to work in is to leave home as early as 5 am and be back by about 9 pm(Soon, 2015). Consequently, they have no time to spend with the family members and their children grow up. Therefore, problems including neglect of family and increasing divorce are rampant among those commuters that work in Singapore. However, many Malaysians still choose to work across the causeway and the risks to personal and family life seems a small price.

However, according to Stutzer (2008), life as a commuter becomes challenging and difficult to manage due to a range of factors including time spent on traveling back every day, increased expenditure and financial cost, as well as changes in the relationship dynamics with spouses, family, and friends. In turn, stress, anxiety, and the burdens related to these and other commuting related challenges will impact negatively individual commuters' health and quality of life. Not to mention that this arrangement of commuting marriages and families entails a unique set of stressors in terms of emotional and financial cost and sacrifices for the commuter and his/her family (Patterson-Stewart, 2000).

Therefore, this will bring impacts on work-home life balance for those who demand dual income commuter families, especially among those young Malaysian families. Furthermore, it is also very important to focus on how the family members adapt to the changes that emerge from being a commuter family/marriage. Therefore, the adaptation of changes is to improve the relationship of the target user in their families and marriages as well as their children positive development(Adriana, 2014).

1.3 Research Aim & Objectives

The research aims to establish the relationship between communal and private spaces based on the social interaction perspective in order to develop a set of responsive design strategies for the standard living of the target user. There are three main objectives for this research topic, which are:-

- i. To identify the daily lifestyle of Malaysians who work in Singapore.
- ii. To figure out the activities that promote interaction between the family members and community living for the target user to be involved in.
- iii. To determine the architectural solutions for encouraging active socialization in the family and community interaction.

1.4 Research Questions

The research questions derived for this dissertation are:-

- i. What is the lifestyle of Malaysians who work in Singapore?
- ii. What are the activities that involved interactions between the target user and the family members in the community living?
- iii. How to provide a home that encourages interaction and socialization for the target user in the family and community?

1.5 Significance of Study

This research is to provide general design implementations for design thesis as shown in Appendix B. Besides, this research also helps the developers or architects who intend to build a vertical housing project in Johor Bahru. It will provide some useful design solutions for the target user. Based on the World Bank Report in 2009, 54% out of 145,000 Malaysian who have a tertiary education are working in Singapore but stay at Johor Bahru. Every year, the number of these group of people is increasing every year. In future, there will be more and more people go to Singapore for work as the number of this group of people is increasing 300% from year to year. And this scenario is just like Shen Zhen and Hong Kong. Thus, the demand for buying a house in Johor Bahru and working in Singapore will be increasing.

1.6 Scope of Study

The research is focusing on Malaysians who work in Singapore but choose to live in Johor Bahru. This is because the chosen site is at Stulang Laut and it is one kilometer away from the customs, immigration, and quarantine complex (CIQ). Therefore, the people that work in Singapore can save more time to avoid long traffic jams and have more sleeping hours than others that live on the outskirts of Johor Bahru.

1.7 Expected Findings

Through the research, there are a few expected findings that will be delivered. First is the lifestyle of Malaysians that work in Singapore. It is introduced by knowing what are the daily activities during weekdays and weekend, income range, working and resting time, status, age range, their transports to work and so forth. Besides that, there will be a series of case studies that discuss the design implementations to promote active socialization in the housing project. All the data

gathered is important to identify some alternative solutions for them in order to encourage active socialization in the family and community interaction.

1.8 Research Methodology

Primarily, Chapter 3 is to elaborate on the research direction through the understanding of the existing research and literature review patterns. There are four different stages that have been divided through the overall basic reach framework. First is to identify the research problem, data collection, data analysing and lastly conclusion. The adoption and breakdown of the methodology are discussed and further elaborated in Chapter 3. Primary data is collected via interviews and questionnaires. Furthermore, all data collected through via existing literature reviews, reading materials or books, case studies, journal articles and internet-based articles. Next, the dissertation done by alumni will be used as secondary data to support the primary data that had been collected. The overall design of this research takes a qualitative approach, meaning that a formal, objective, systematic process is used to analyse the data in order to achieve the research objectives.

1.9 Structure of Dissertation

There are five chapters in the dissertation. Chapter 1 is the introduction, problem statements, research aim and objectives, research questions scope of the study and the expected findings. Basically, it is to provide the overview of the study.

While Chapter 2 covers the literature review. The topics discuss are the relationship between social interaction and privacy, shared spaces in high-rise building community, Future Housing in 'Vertical Kampung' and the importance of social interaction.

Next, Chapter 3 shows the method of collecting data in order to get the results to be discussed in Chapter 4. In this study, both the quantitative and qualitative

methods are used to obtain the results. The data collected is based on the target user and site in Stulang Laut, Johor.

In Chapter 4, there are several case studies introduce to achieve the objectives stated in chapter 1. The case studies include The Interlace and Kampung Admiralty in Singapore as well as The Met in Thailand.

In Chapter 5,the findings are analysed and discussed, related to the objectives of the study. Therefore, the set of potential architectural solutions that respond to the target users can be implied to achieve the aim and objectives.

Lastly, Chapter 6 is the last part after discussing the end results. This chapter is to conclude the overall study of the research topic and develop the new potential research topic for future study. Therefore, limitations, challenges, and future recommendations will be mentioned in this chapter.

REFERENCES

- Adriana Ortega, H. A. (2014). SOCIAL SCIENCES & HUMANITIES. *The Emerging Commuter Families and Changes in Psychosocial*, 1-12.
- Ali, Z. F. (2013). The Met Tower. Hong Kong: Phoenix Publishing.
- Brand, J. L. (2010). Physical Space and Social Interaction. Ways To Set Up Spaces To Foster Interaction and Improve Communication In A Group, 0409.
- Burdge, R. a. (1995). Social Impact Assessment. *Environmental and Social Impact Assessment*, 31-65.
- Chermayeff, S. (1965). Community and Privacy: Toward a New Architecture and Humanism by Serge Chermayeff and Christopher Alexander. New York: Doubleday.
- (2004). Guidelines for Higher Density Residential Development. In V. G. Environment, *Building Layout and Design* (pp. 53-58). East Melbourne: Hampton Press PL.
- Hong, L. B. (2011, August 3). *Make Singapore a more sustainable, liveable city by increasing community interaction*. Retrieved October 13, 2016, from Philips Media: http://www.philips.com.sg
- Housing Development Board. (2016, March). *Public Housing-A Singapore Icon*. Retrieved December 21, 2016, from Housing Development Board: http://www.hdb.gov.sg/
- Khalik, S. (2013, August 15). *Take 'Vertical Kampung' Concept To New Heights*. Retrieved October 12, 2016, from C3A Ageing Well: http://www.c3a.org.sg
- Korff, H.-D. E. (2000). Southeast Asian Urbanism: The Meaning and Power of Social Space. Bielefeld: LIT Verlag Münster.
- Lim Kim Hui, H. W. (2008). Sanitising and Satanising Malaysia's Cityscapes: Cultural Power from Malay Decolonialism to Islamic Occidentalism and beyond. *Asian Social Science*, 4 (11), 49.
- Lim, A. (2015, Jul 1). *New shuttle train service will take Singapore commuters to JB in just five minutes.* Retrieved Dec 12, 6, from The Straits Times: http://www.straitstimes.com/

- Márcia, L. M. (2013). Integration of Housing Schemes, Social Interaction and Resident Well-being. *Ninth International Space Syntax Symposium* (pp. 0810-0811). Seoul: Sejong University.
- Menz, S. (2014). *Public Space Evolution in High-density Living in Singapore: Ground and Elevated Public Spaces in Public Housing Precincts.* Singapore: Future Cities Laboratory.
- Moore, G. T. (1997). *Introduction to Architecture: Environment Behaviour Studies*. New York: McGraw Hill.
- Myall, N. (2016, August 26). *Kampung Admiralty, Singapore*. Retrieved October 13, 2016, from World Architecture News: http://www.worldarchitecturenews.com
- Patterson-Stewart. (2000). African Americans in Dual-Career Commuter Marriages: An Investigation of their Experiences. *The Family Journal*, 8 (1)22-36.
- Project For Public Spaces. (2016). What Makes a Successful Place? Retrieved October 12, 2016, from http://www.pps.org/reference/grplacefeat/
- QDT. (2013, December 27). *Social Interaction Helps You Live Longer*. Retrieved December 10, 2016, from Quick and Dirty Tips: http://www.quickanddirtytips.com/
- Rabinowitz, P. (2014). *Creating Good Places for Interaction*. Retrieved October 3, 2016, from Implementing Promising Community Interventions: http://ctb.ku.edu/en
- Scheeren, O. (2014). *The Interlace / OMA/ Ole Scheeren*. Retrieved 10 October, 2016, from Archdaily: http://www.archdaily.com
- Siregar, L. (2016, October 11). *Architect Budi Pradono Imagines Future Housing in 'Vertical Kampung'*. Retrieved October 13, 2016, from Jakarta Globe: http://jakartaglobe.beritasatu.com/
- Smedley, T. (2013, March 15). What impact do seas, lakes and rivers have on people's health? Retrieved December 5, 2016, from The Guardian: https://www.theguardian.com
- Solove, D. J. (2008). *Understanding Privacy*. Washington: Harvard University Press.
- Sommer, R. (1992). *The Distance for Comfortable Conversation: A Further Study*. Edmonton: American Sociological Association.
- Soon, T. W. (2015, June 29). Working In Singapore Vs Malaysia: Is The Grass Always Greener On The Other Side? Retrieved December 20, 2016, from Malaysian Digest: http://www.malaysiandigest.com/

- Stutzer, A. (2008). Stress that Doesn't Pay: The Commuting Paradox. *The Scandinavian Journal of Economics* .
- VIC, R. (2014, July 2). *Elizabeth Street 'walk-ups'*, *Richmond Housing Project by Williams Boag Architects*. Retrieved October 3, 2016, from Architecture and Design: http://www.architectureanddesign.com.au/
- World Bank. (2011). *MALAYSIA ECONOMIC MONITOR*. Bangkok: Public Disclosure Authorized .