



True Light Middle School of Hong Kong  
F.3 Liberal Studies

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**Project topic:**

Comparison of severity of residential wall effect of  
new town Tseung Kwan O and older new town Tsuen Wan



## ☞ Table of Content ☞

- I. Introduction
- II. Summary
- III. Overview of wall buildings and wall effect
  - A. Wall effect
  - B. Wall effect index
  - C. New Towns
  - D. Multi- building housing estate
- IV. Severity of wall effect of Tsuen Wan and Tseung Kwan O
  - A. Data collection method
  - B. Findings
    - 1. Distribution of wall effect index of estates of Tseung Kwan O and Tsuen Wan
    - 2. The comparison of residential wall effect index between Tsuen Wan and Tseung Kwan O
- V. Discussion
  - A. Reasons for causing the difference between severity of residential wall effect of Tsuen Wan and Tseung Kwan O
  - B. How do they relate to our quality of life?
- VI. Conclusion and Recommendation
  - A. Conclusion
  - B. Recommendation- Suggestion for improvements
    - 1. Clearly-stated house building guidelines
    - 2. Close supervision on property developers during construction
- VII. Reflection
- VIII. Reference
- IX. Appendix
  - A1. Map extract of Tsuen Wan
  - A2. Estates in Tsuen Wan
  - B1. Map extract of Tseung Kwan O
  - B2. Estates in Tseung Kwan O



## Introduction

The topic of this project is **“The comparison of severity of residential wall effect of Tsuen Wan, older new town, and Tseung Kwan O, new town”**. We are interested in this topic because wall effect on residential of newly-built town is tending to be more serious. The wall effect on residential greatly affect the living environment of the town. We must pay more concerns on the continuous problems on wall effect and let everyone understand the residential wall effect completely.

We chose multi-building housing estates for observation and measurement because, firstly, people began to pay more attention on wall effect as the stuffy residential environment makes them uncomfortable and hence affects their daily lives. Conversely, most people stay indoors in those industrial or commercial areas so they are not usually affected by wall effect since air-conditioners are used to keep the temperature steady. Thus, residential areas have the highest value to be studied.

Secondly, single-building housing estate is not taken into calculation of the grade of wall effect index which is measured in terms of one multi- buildings housing estate.

What is the definition and measuring method of level of wall effect? How is the difference between the level of residential wall effect in Tsuen Wan and Tseung Kwan O? What are the reasons causing the difference of residential wall effect level between the two districts? All these are interesting issues that are worth studying.

To our points of view, we think that the level of residential wall effect in the new town (i.e. Tseung Kwan O) will be higher, since people demand for higher level and sea view. As a result, the high rise buildings are built and block the wind flow and lead to wall effect finally.

## Summary

We chose to study this topic to let more people understand what is wall building and wall effect, so as to recognize the importance of tackling this close and worsening problem. Since all of us are living in Hong Kong, we have the responsibility to care about our own living environment, where is becoming a mess.

We collected data to look into this issue by reading the map of the two selected areas, and consulting from related books and websites. They all helped us to sum up the entire project.

The result turned out to meet our hypothesis. Wall effect is more severe in new town, Tseung Kwan O, as the index is pretty high. And it is caused by several man-made reasons which will be discussed later.





## Overview of wall buildings and wall effect

### A. Wall effect

Wall effect (Ref. F) generally refers to high density and compact buildings having visual and air ventilation impacts on the surrounding areas. The wall effect severity can be measured by wall effect index.

### B. Wall effect index

Wall effect index is a guideline used by Green Sense for their investigations on wall effect (Ref. B) i.e. define if they are wall buildings or not and measure their severity in terms of estates. There are in total 6 distinctive marks for wall buildings; reaches 3 or more is considered as wall buildings.

The distinctive marks are:

- 1) the gap between two buildings is less than 15 m
- 2) the no. of floors of the building is more than 35 levels
- 3) the group of buildings is located on the same line
- 4) the building is located at the blow-hole or the centre of that district
- 5) the wider side of the building is facing the prevailing winds
- 6) there are some shorter buildings nearby



\*Examples for wall buildings



## C. New Towns

### 1. Tsuen Wan New Town

Tsuen Wan New Town (Ref. K) was developed in Regional Development Phase I in the 1970s. It includes Tsuen Wan, Kwai Chung and Tsing Yi Island with a total development area of about 24 km<sup>2</sup>.

### 2. Tseung Kwan O New Town

Tseung Kwan O New Town (Ref. J) was developed in Regional Development Phase III in 1982. It includes Po Lam MTR Station, Hang Hau Station, Tseung Kwan O Station (Town Centre) and Tiu Keng Leng Station with a total development area of about 10.05 km<sup>2</sup>.

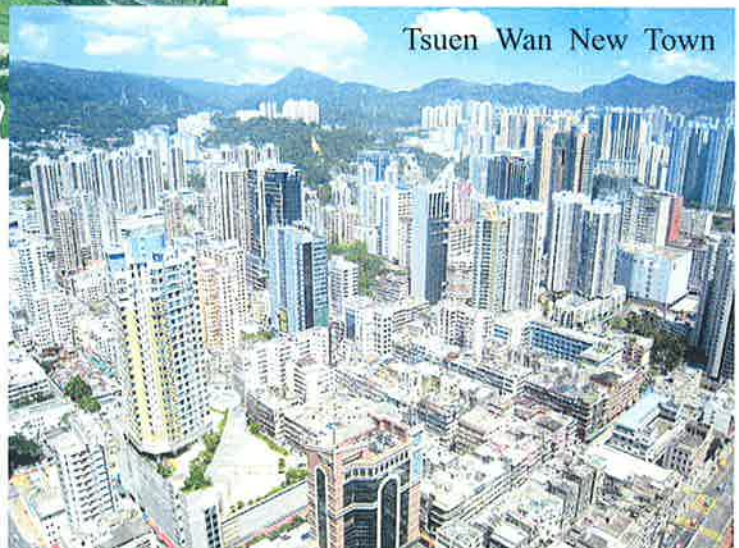
## D. Multi- building housing estate

A multi-building housing estate (Ref. I) is a group of buildings (more than 1) built together as a single development. Accordingly, a housing estate is usually built by a single contractor, with only a few styles of house or building design, so they tend to be uniform in appearance.

Tseung Kwan O New Town



Tsuen Wan New Town



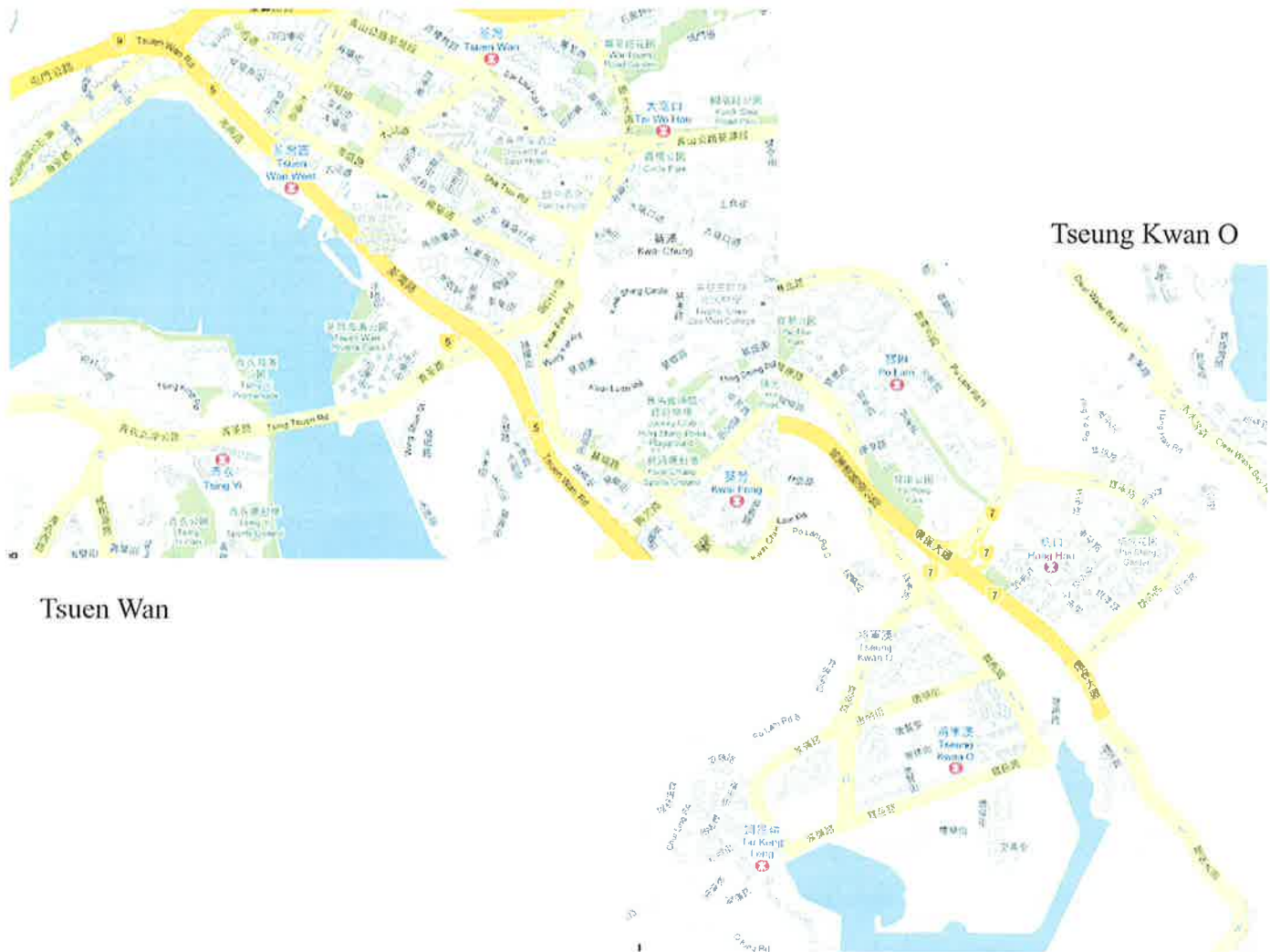


## Severity of wall effect of Tsuen Wan and Tseung Kwan O

### E. Data collection method

In order to find out whether the severity of residential wall effect of the two selected districts matches with our hypothesis, we tried to find out the geographical location of Tsuen Wan and Tseung Kwan O and the location and density pattern of the housing estates in these districts by studying map extract from [www.maps.google.com](http://www.maps.google.com). It can help us to calculate the index of each estate in the selected district.

To understand more about the standard of being considered as wall buildings and measuring method of wall effect, we found data from reviews of books and websites. We searched books and organisation's documents related to definition of wall buildings and wall effect and information about buildings causing wall effect in the districts. We visited the website of Green Sense to get the most updated information about wall effect in those districts too.

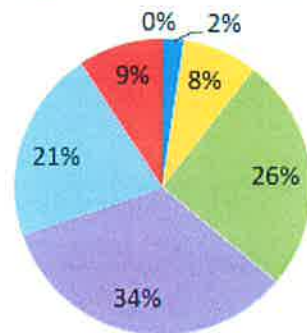


## B. Findings

### 1. Distribution of wall effect index of estates of Tseung Kwan O and Tsuen Wan

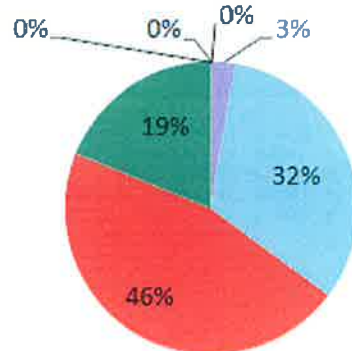
Wall Effect Index for estates  
in Tsuen Wan

Grade of Index: 0 1 2 3 4 5 6



Wall Effect Index for estates  
in Tseung Kwan O

Grade of Index: 0 1 2 3 4 5 6



For Tsuen Wan, more than half of its estates (64%) are wall buildings but there are still some non-wall-building estates. Compare with Tsuen Wan's residential wall effect, Tseung Kwai O's is much more serious as all of its estates are built as wall buildings. More than half of them (65%) are distributed in the high index level between 5 and 6, compare with 9% for Tsuen Wan.



2. The comparison of residential wall effect index between Tseung Kwan O and Tsuen Wan

Wall effect index	Tsuen Wan (estate)	Tseung Kwan O (estate)
0	2 / 86	0 / 36
1	7 / 86	0 / 36
2	22 / 86	0 / 36
3	29 / 86	1 / 36
4	18 / 86	12 / 36
5	8 / 86	17 / 36
6	0 / 86	7 / 36
Average index (cor. to 1 decimal place)	2.9	4.8

\*Table for comparing residential wall effect index and average

From the above table, the average residential wall effect index of new town Tseung Kwan O (4.8) is much higher than older new town Tsuen Wan (2.9). Most of Tsuen Wan's housings are at the level of moderate (3) but Tseung Kwan O's tend to be at high level of 5.

## Discussion

### A. Reasons for causing difference between severities of residential wall effect of Tsuen Wan and Tseung Kwan O

After calculation, Tseung Kwan O has 4.8 for residential wall effect index while Tsuen Wan has lower index at 2.9. It shows that Tseung Kwan O has a bigger problem of residential wall effect, and there are some reasons for the difference between the two districts.

Firstly, Tsuen Wan which is located near industrial area with severe air pollution problems is less attractive to property developers. However, Tseung Kwan O is a new town with convenient transport (MTR station) and beautiful seaview, it attracts more private property developers build tall and high quality housing estates there.

Secondly, the private property developers are so profit-oriented that they make use of land as large proportion as possible to earn the maximum profits. With expensive limited land in Tseung Kwan O, the developers try to build taller, closer and parallel buildings and sell them at high prices. That's why such buildings are sold or rented much more expensive than normal.

Thirdly, the government was not able to monitor those property developers well; they can build very high rise buildings closely to each other. Owing to the legislative loopholes, the developers build so-called "legal" tall and densely distributed buildings.



## **B. How do they relate to our quality of life?**

Wall effect affects three aspects of quality of life in HK:

Firstly, in environmental QOL, wall buildings block and affect the wind flow. The area will be very hot and stuffy. Also, air pollutants will be trapped in that district; they can't spread around and thus air pollution occurs.

Secondly, in social QOL, the health of the residents in those places with wall effect will be affected. Airless condition will make them uncomfortable and air pollution will cause respiratory diseases as well. Consequently, their living environment will be really poor.

Thirdly, it will then lower the political QOL. This is because the disgruntled citizens affected by wall buildings. They may protest against the construction of wall buildings and lead to social unrest.

To conclude, wall buildings actually spoil the balance between the profit gained by developers and citizens' needs of a good living place, and affect most of the QOL in HK though high-rise and closely-packed buildings can earn more money for the society.



## ❧ Conclusion and Recommendation ❧

### A. Conclusion

Our hypothesis is supported by our findings in this project. The average residential wall effect index of new town Tseung Kwan O (4.8) is much higher than that of old town Tsuen Wan (2.9). Tsuen Wan has the most estates (34%) with index 3 which is moderate level but in Tseung Kwan O, 64% of its estates are 5 or above which is a high level.

The difference between severities of residential wall effect between the two districts appears because newer town attracted more property developers to invest and develop expensive high-rise housing. To maximize the profits, developers build taller and closer buildings with every inch of land that makes wall buildings more common in Tseung Kwan O.

To sum up, the residential wall effect is mainly caused by Hong Kong people who have a concept of “demand and supply”, i.e. when more people want to live in buildings with wide views and high standard and hence, developers will try to cope with the customers’ needs. On the other hand, the government gives in to those profit-driven property developers. As a result quality of life in Hong Kong will deteriorate because of wall buildings.





## **B. Recommendations – Suggestions for improvements**

New towns are supposed to have better urban planning and less environmental problems. However, residential wall effect in the new town Tseung Kwan O is much higher than that of the older district Tsuen Wan. To prevent similar situation happens again in the future new urbanization project in old districts, we have the following suggestions:

### **1. Clearly-stated house building guidelines**

As some of the wall buildings are built through the legislative loopholes, clearer house building guidelines can prevent them. For example, state the limitations for maximum number of floors, minimum distance between buildings, no constructions at the blow-hole of the district etc. Under restrictions, the property developers are not able to build over tall and crowded housings that cause serious wall effect.

### **2. Close supervision on property developers during construction**

To ensure the property developers follow the guidelines, the Hong Kong government has to monitor the whole process of construction if they reach the standard. For instance, Secretary for Transport and Housing can send one or two professional staffs regularly to supervise one construction project. If the design for new housing does not reach the standard, the Hong Kong government has the right to ban the plan.

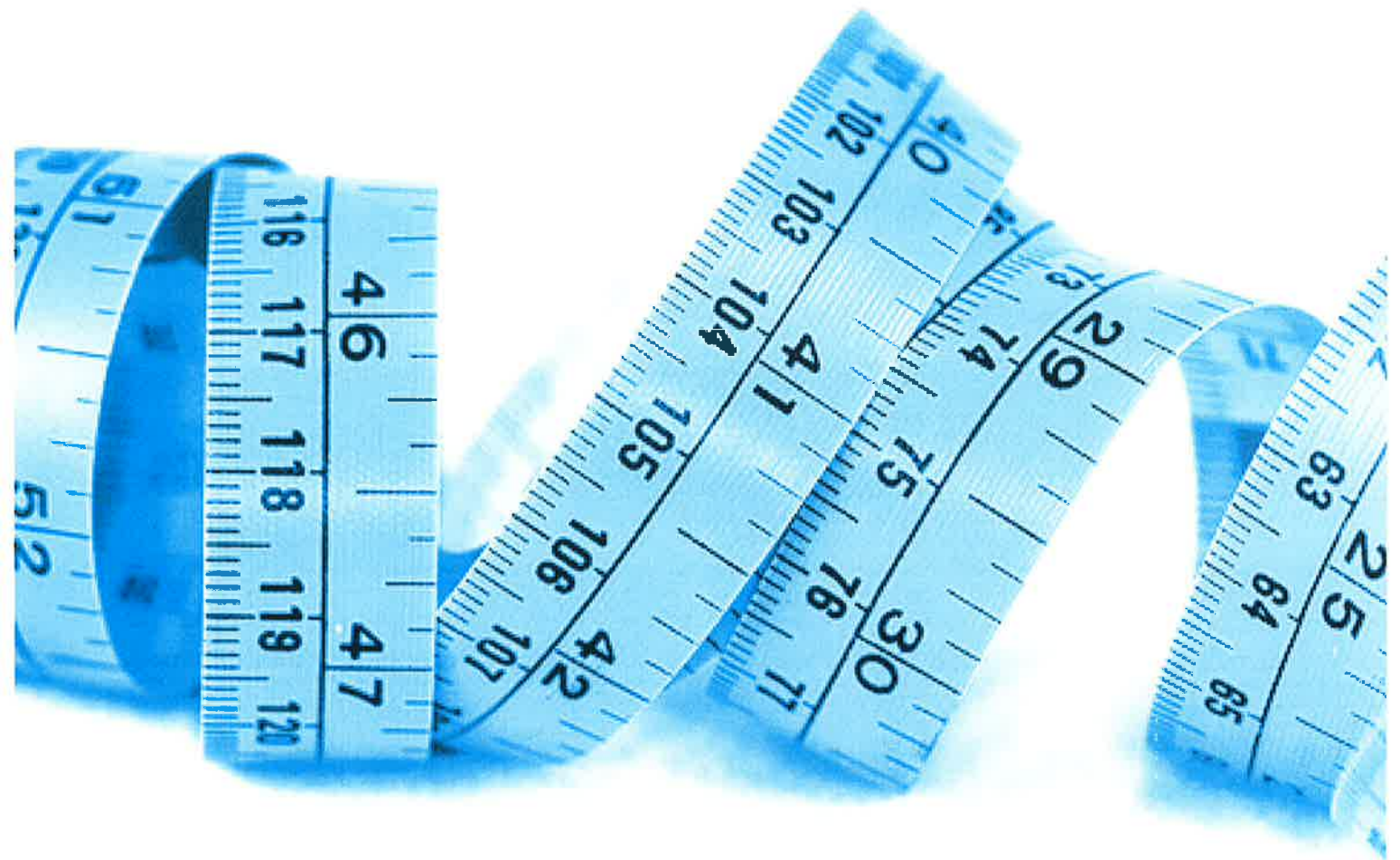


## Reflections

In this project, we have learnt and understood more about wall buildings and wall effects in Hong Kong. However, with limited time, resources and experiences, our project may not be so accurate and need improvements, especially in the measurement of buildings.

To improve our measurement, we can observe and study those estates by field trip, together with map reading from Google Map. Thus, we can study the real distance and real height of the buildings. These will give much accurate results.

Moreover, we can try to find more detailed information of the districts that we have to measure, such as the direction of prevailing wind, blowholes and if that building is located at downtown area etc. For example, the Shek Lei Estate Block 10 in Tsuen Wan is the mouth of ventilation and it traps most of the heat in that area because it is a wall building.



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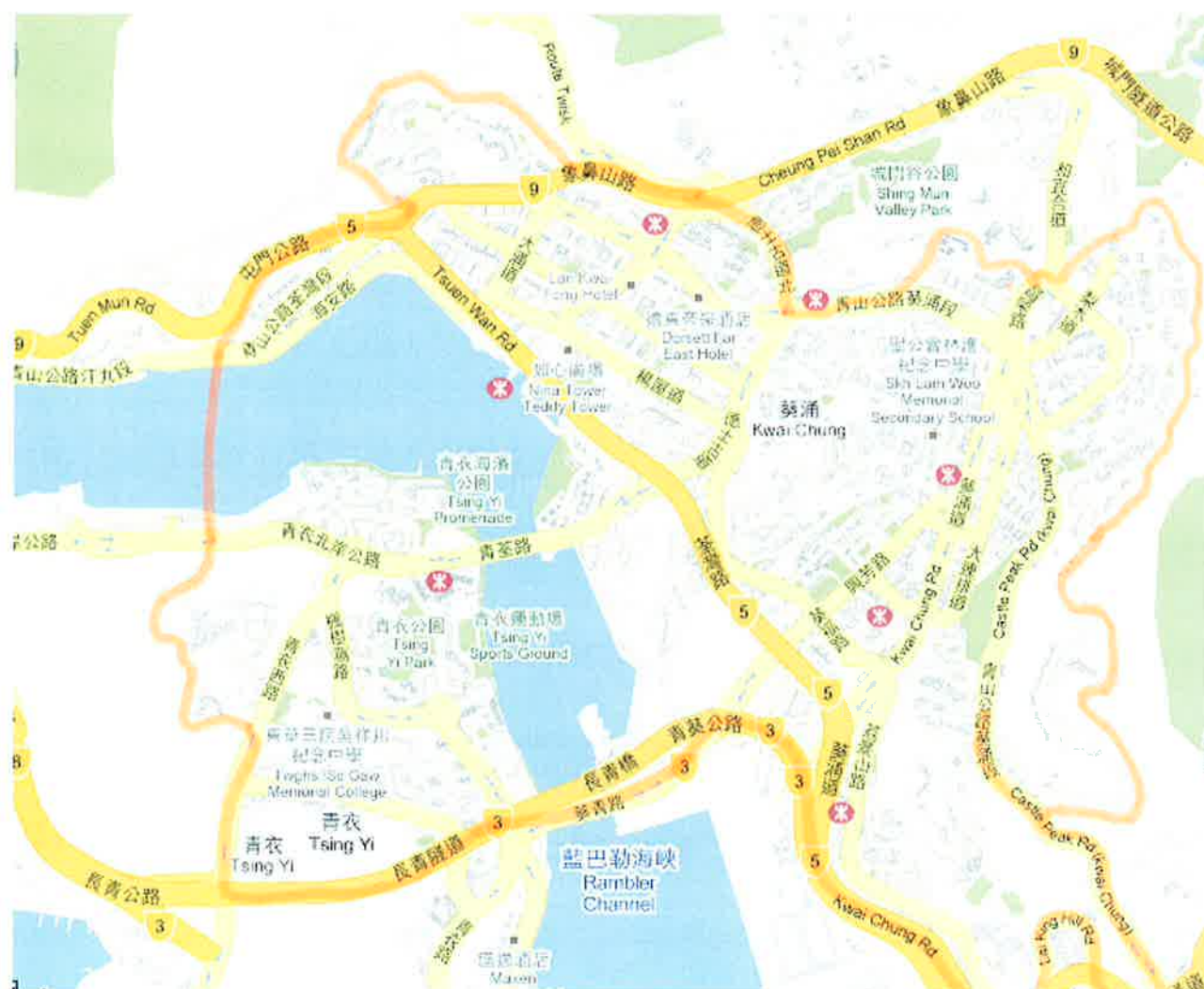
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## Appendix

### Appendix A1:

#### Map extract of Tsuen Wan- Selected area





## Appendix A2:

### Estates in Tsuen Wan

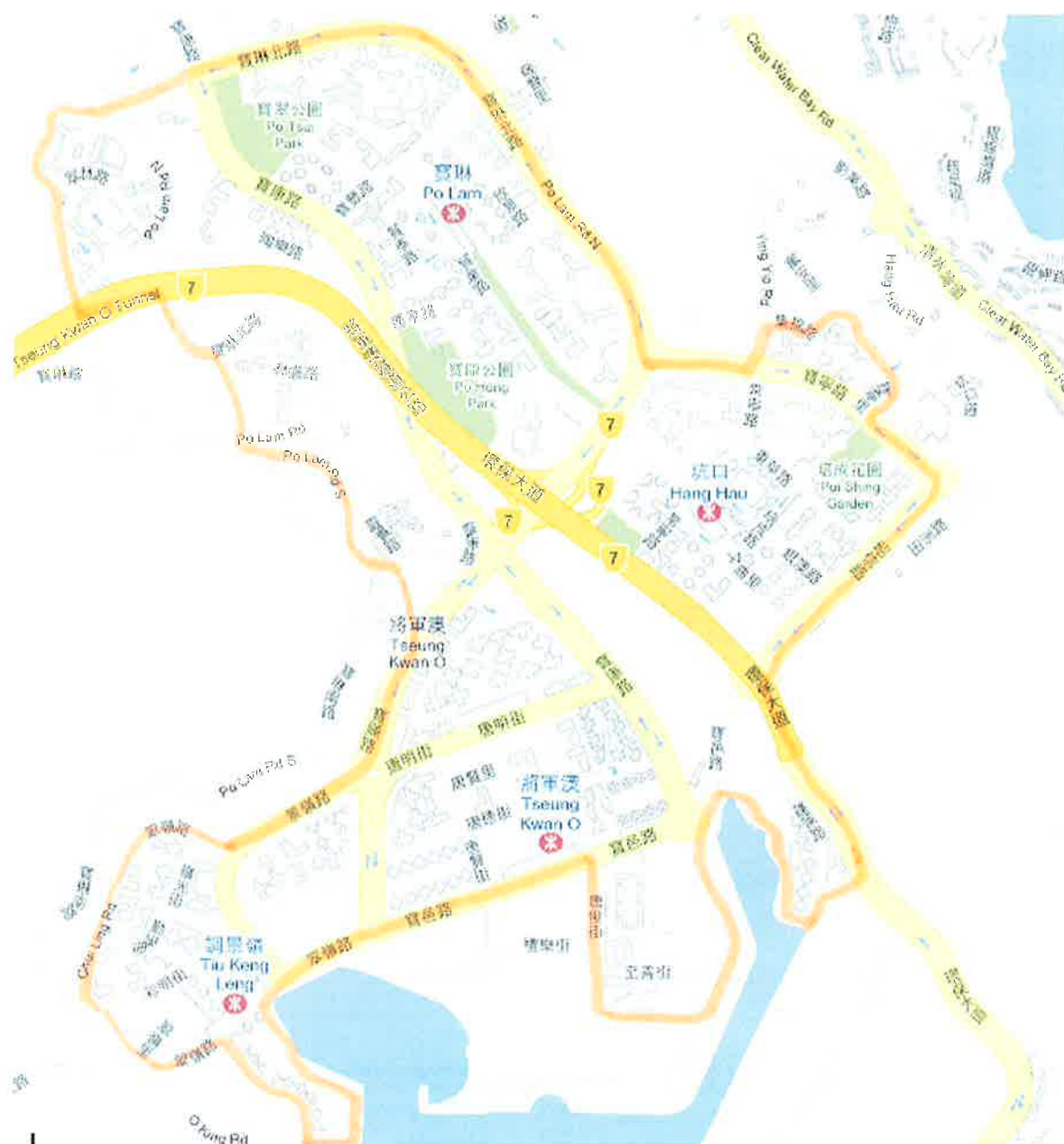
Name of Estate	Grade	Name of Estate	Grade
Cho Yiu Chuen	0	Chelsea Court	3
Lai Yiu Estate	0	Cheung Ching Estate	3
Chuck Ming Bldg	1	Cheung Fat Estate	3
Good View Mansion	1	Cheung On Estate	3
Fairview Garden	1	Ching Nga Court	3
Fuk Loi Estate	1	City Landmark	3
Hanley Villa	1	Clague Garden	3
Harmony Garden	1	Clague Garden Estate	3
Lai King Estate	1	Grand Horizon Garden	3
shek wai kok estate	1	Greenknoll Court	3
Tak Tai Court	1	Hibiscus Park *	3
Union Bldg	1	Ho Fai Garden	3
Yen Wai Garden	1	Kwai Chung Estate	3
East Asia Gardens	2	Kwai Yin Court	3
Greenview Court	2	Lai King Estate	3
Greenview Terrace	2	Luk Yeung Sun Chuen	3
Highland Park	2	Mayfair Garden	3
Lai chi Kok Bay Garden	2	Moon Lok Dai Ha	3
Ling Fung Estate	2	New Heaven	3
Long Beach Garden	2	Ning Fung Court	3
Kam Fung Garden	2	Rambler Crest Tower	3
Kwai Fong Estate	2	Sun Kwai Hing Garden	3
Kwai Fuk Court	2	Tivali Garden	3
Riviera Gardens	2	Tsuen Wan Centre	3
Serenade Cove	2	Tsuen Wan Garden	3
Shek Wai Kok Estate	2	Tsuen Wan Plaza	3
Tai Wo Hau Estate	2	Wah Shing Bldg	3
Tsuen Kam Centre	2	Wah Yuen Chuen	3
Tsuen Cheong Centre	2	Waterside Plaza	3
Tsuen Tak Gardens	2	Wealthy Garden	3
Vision City	2	Yee Yip House	3
Wa Fu Chuen	2	Yee Yat House	3
Broadview Garden	3	Yee Wai House	3

Name of Estate	Grade	Name of Estate	Grade
Yin Lai Court	3	Wonderland Villas	4
Yuet Lai Court	3	Yi Fung Court	4
Allway Garden	4	Discovery Park	5
An Yin Estate	4	Kwai Hing Estate	5
Belvedere Garden	4	Kwai Shing East Estate	5
Ching Tai Court	4	On Yam Estate	5
Ching Wah Court	4	Shek Lei Estate	5
Discovery park	4	Shek Yam Estate	5
Kwai Shing West Estate	4	Shek Yam East Estate	5
Tierra Verde	4	Summer Terrace	5
Tsuen King Garden	4	The Panorama	5
Villa Esplanade	4		

\*Table of wall buildings in Tsuen Wan

# Appendix B1:

## Map extract of Tseung Kwan O- Selected area



## Appendix B2:

### Estates in Tseung Kwan O

Name of Estate	Grade
King Ming Court	3
Chung Ming Court	4
Fu Ning Garden	4
Kin Ming Estate	4
La Cite Noble	4
Nan Fung Plaza	4
On Ning Garden	4
The Pinnacle Block	4
Tsui Lam Estate	4
Verbena Height	4
Ying Ming Court	4
Yuk Ming Court	4
Choi Ming Court	5
Kwong Ming Court	5
Metro Town Tower	5
Ming Tak Estate	5
Ocean Shore	5
Park Central	5
Po Lam Estate	5
Po Ming Court	5
Radiant Tower	5
Residence Oasis	5
Serenity Place	5
Sheung Tak Estate	5
The Grandiose	5
Tseung Kwan O Plaza	5
Well On Garden	5
Wo Ming Court	5
Yan Ming Court	5
Bauhinia Garden	6
Beverly Garden	6
East Point City	6
Hau Tak Estate	6
Le Point Tower	6
Metro City Phase	6
Oscar by The Sea	6

\*Table of wall buildings in Tseung Kwan O