Adaptive Reuse of Industrial Buildings – Transformation into Quality Housing

活化工廈 – 提供優質住屋

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Due to limited land supply and other reasons, there is shortage in HK housing



Housing crisis In terms of:

- 1. Supply
- 2. Affordability
- 3. Income inequality

...many Chinese do not mind working almost half of their lives just to pay off the bank loans. Owning a house in China is not just for residential purposes. It is now considered a marriage prerequisite and shows one's financial capability. Other than that, it reflects on the unrealistic urgency of young people agonized by material desire and the shaky housing system in China.

As Li Daokui, professor at Tsinghua University and a member of the Chinese central bank's monetary policy committee, says, "It is more than [just] a bubble problem," Li says. "When prices go up, many people, especially

young people become very anxious. It is a social problem."

Source: http://cnreviews.com/life/news-issues/china-housing-crisis_20100830.html



How Unaffordable Is Hong Kong Housing?

http://blogs.wsj.com/exchange/2011/07/20/how-unaffordable-is-hong-kong-housing/

explores the problem of subdivided flats in Hong Kong as the government pledges it will address public anger over record house prices and reassess land policy. J.P.Morgan has helpfully crunched the numbers in a note, "Unaffordable housing," to show just how unaffordable housing has become for the general public and why the government's cooling policies have been ineffective.

Writes JPM:

A 1,300 sq ft apartment in the Belcher's (upscale private complex in Hong Kong's Western

district) is equivalent to 11.6 times an income of HK\$100,000 per month.

Even wealthy households cannot pay for property from income.

HK housing crisis is becoming a problem for all classes of citizens

A Survey was carried out by HK Govt on private domestic/composite buildings aged 25+ in HK in 2013 Jan-Apr.



Fragmented ownership, lack of monitoring by the building management, relatively large floor area and relatively low rental value before subdivision — a higher chance of finding domestic premises in these old buildings being subdivided into two or more units

Survey on Subdivided Units

The Long Term Housing Strategy Steering Committee (SC) commissioned an independent research institution, to conduct a survey on SDUs during the three-month period from 31January to 30 April 2013.

objective - to estimate the number of SDUs and to gather information on the profile of the tenants

	Estimated number of persons living in SDU 32	Number of persons (C&SD 2012) 33	Percentage of persons living in SDU		Number of private domestic units aged 25 and above ²⁴	Estimated percentage of quarters with SDU 25	Estimated number of quarters with SDU
Hong Kong Island	37 800	1 260 100	3.0%	Hong Kong Island	229 700	2.0%	4 500
Kowloon	81 600	2 121 100	3.8%	Kowloon	239 400	3.9%	9 300
New Territories East	6 400	1 672 000	0.4%	New Territories East	53 600	2.1%	1 100
New Territories West	45 500	2 012 300	2.3%	New Territories West	94 000	4.1%	3 900
Total	171 300	7 065 500	2.4%	Total	616 700	3.0%	18 800

Number of people living in subdivided units (SDU) in 2013 - 171,300 Number of SDUs in HK – 66,900

Each quarter is divided into 3.6 units on average http://www.legco.gov.hk/yr12-13/english/panels/hg/hg/lths/papers/hg/lths0530cb1-1117-3-e.pdf

Chart 31: Area of SDU reported by households living in SDU (%)

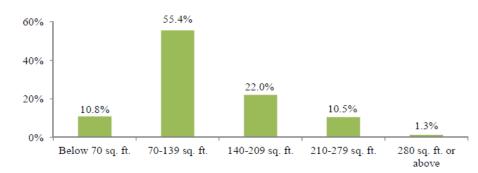


Table 40: The views of households living in SDU on problems of SDU/buildings (%)

	Serious	Average	Not serious	Do not have this problem
Water seepage	12.7%	9.2%	32.3%	45.8%
Concrete cracking	11.3%	7.7%	32.5%	48.5%
Messy electrical wiring	6.0%	26.5%	16.6%	50.9%
Exposed reinforcement	9.1%	6.2%	31.9%	52.8%

Table 39: The views of households living in SDU on the conditions of SDU (%)

	Very dissatisfied	Dissatisfied	Average	Satisfied	Very satisfied	Not applicable
General Conditions in SDU	5.9%	8.5%	57.6%	27.8%	0.2%	-
Ventilation in the SDU	4.3%	18.7%	24.0%	51.0%	2.0%	-
Extent of congestion in the SDU	17.2%	30.0%	17.1%	35.5%	0.2%	10-01

Allocation of HA PRH Flats ²²			
			Thousands
	2001/02	2006/07	2011/12
Overall	65	29	31
By Rehousing Category			
Waiting List	42	19	20
Clearance	1	۸	^

Other Categories

Waiting List			
			Thousands
As at end of the period	2001/02	2006/07	2011/12
No. of Live Applicants	86	107	189

10

12

2

8

11

The average waiting time for the general Waiting List applicants to be allocated with HA PRH flats in the year 2011/12 was 2.6 years. The monthly income limit and asset limit for a 4-person household were HK\$20,710 and HK\$418,000 for 2012/13 respectively.

Number of people waiting for HA Public Rental Housing in 2012 – 189,000

Average waiting time – 2.6y

Comprehensive Redevelopment & Major Repairs

Number of people allocate to HA Public Rental Housing in same period – 31,000

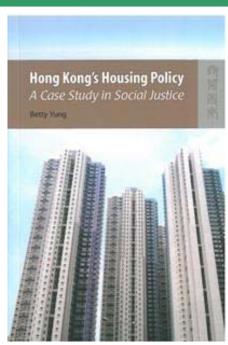
[^] Less than 500



Hong Kong's 1.2 million poorest live in "Cage Homes"



Housing Reform



Home Ownership Scheme (HOS)
Public Rental Housing (PRH)
Rent Allowance for Elderly Scheme
Home Assistance Loan Scheme
Tenants Purchase Scheme



Housing Supply

HK Housing Authority

 Since 1954, HA built over 700,000 public rental housing flats in 156 estates

- From 2010- 2015, HA will provide about 75,000 flats

- The annual production of 15,000 new flats

Over 2 Mil of HK people live in HA housing





(source: Planning, Design, and Delivery of Quality Public Housing in the New Millennium

HK Housing Authority 2010)

Solutions?



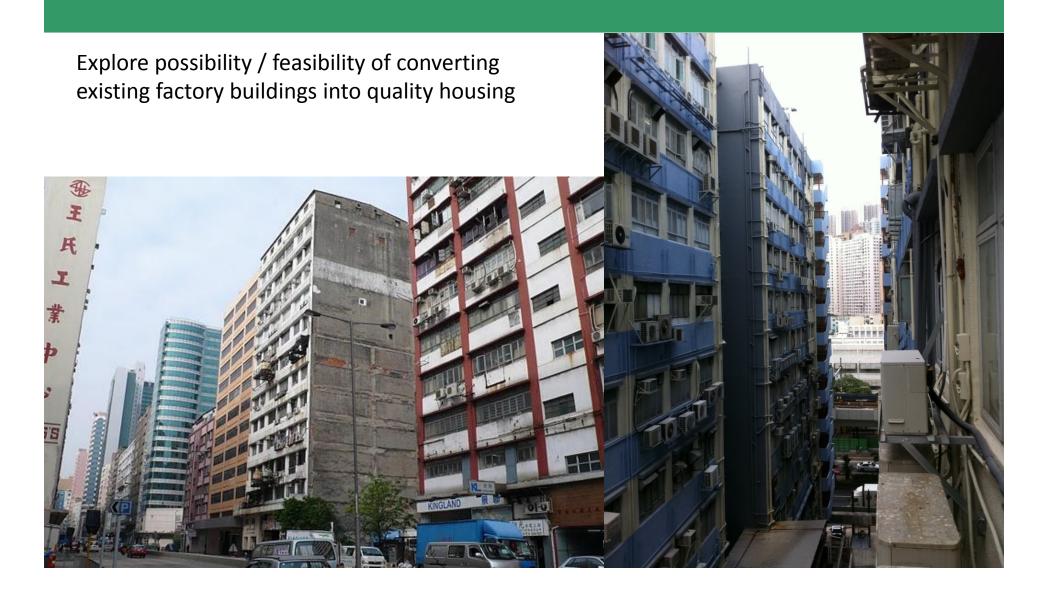
housing supply through construction.....

but it takes time, resources, planning

Land supply?
Increasing construction fee?
Redevelopment?



Adaptive Reuse in Hong Kong



Adaptive Reuse in Hong Kong

Are there any other Immediate Solutions?

Adaptive Reuse be an alternative?

Definition of Adaptive Reuse活化建築

...the process of reusing an old site or building for a purpose other than which it was built or designed for.

adaptive reuse

- a key factor in land conservation
- -a compromise between historic preservation and demolition.

- 1. Environmental consideration
- Maintain social cultural heritage
- 3. Gives new life to old buildings

Disadvantages:

- 1. Structural integrity
- 2. Not up to current building standards
- 3. Might contain toxic materials like asbestos

Case Study



District of Kwun Tong







500 Survey conducted Sept 2012 – March 2013



Distribution of Private Industrial Buildings in Non-Industrial Zones

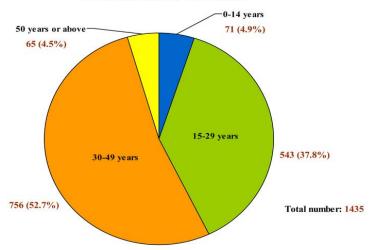


Note: "Private industrial buildings" include private flatted factories, private industrial/office and godown buildings.

Specialised factories such as those located in industrial estates, storage premises in container terminals and flatted factories built by the Housing Authority are not included.

Source: Rating and Valuation Department and Buildings Department

Age Profile of Private Industrial Buildings in Metro and New Town Areas



Note: "Private industrial buildings" include private flatted factories, private industrial/office and godown buildings.

Specialised factories such as those located in industrial estates, storage premises in container terminals and flatted factories built by the Housing Authority are not included.

Source: Rating and Valuation Department and Buildings Department

Study area:

Kwun Tong:

One-forth of industrial buildings in non-industrial zones in Hong Kong are located in Kwun Tong

More than 40% of industrial buildings are less than 30 years old. It would be a waste for all of them to be pulled down and redeveloped

Survey findings – Vacancy Rate

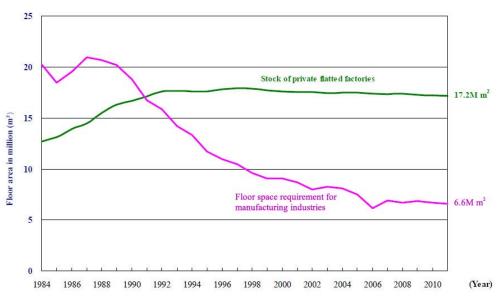
Vacancy increased in ALL industrial buildings in recent years

Planning Department's Report on Area Assessments 2009 of Industrial Land in the Territory only about 39% of industrial premises in OU(B) zone were still engaged in industrial and related uses.



	2004	2005	2006	2007	2008	2009
全港	7.1%	6.3%	6.0%	5.7%	5.9%	8.4%
九龍區	6.6%	5.4%	5.6%	6.0%	6.4%	9.1%
觀塘	8.6%	6.6%	7.0%	7.6%	8.3%	12.0%
九龍灣	4.1%	3.7%	3.1%	3.2%	2.3%	4.1%

Demand for Manufacturing Floor Spaces and Stock of Industrial Premises



Source: Planning Department, Census and Statistics Department & Rating and Valuation Department

Industrial Buildings - Conservation issues

Kowloon Flour Mills = = one of the very few flour mills still in operation in Hong Kong.

The Kowloon Flour Mills operates since 1 Feb 1966.

Key elements for heritage conservation



Kowloon Flour Mills on Hoi Bun Road

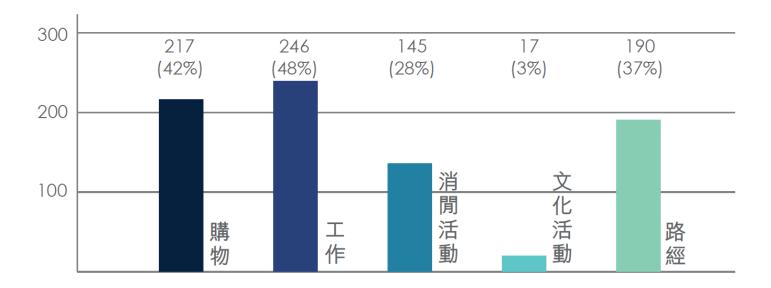


The Kowloon Flour Mills is having an exterior renovation

Most people surveyed came to Kwun Tong to work.

Approximately 30% of the interviewees came to Kwun Tong to join leisure activities.

This suggests industrial units in the area are used in many different ways.

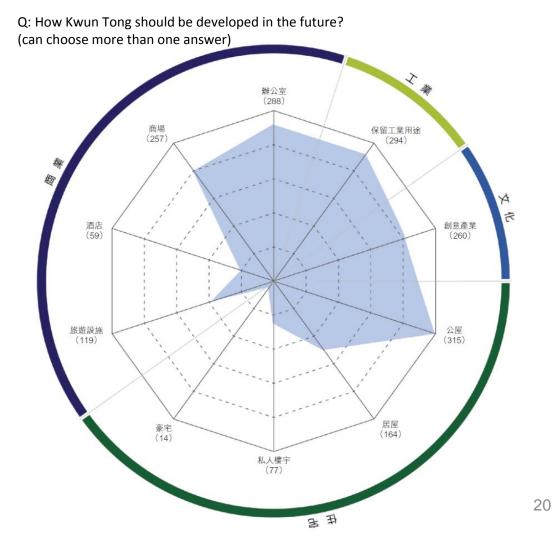


Many interviewees are for industrial building revitalization.

Suggestions include offices, shopping centers and studios for creative industries.

Public housing is another favorite option among the interviewees.

A point to note is that though only a small number of people (3%) reported to take part in cultural activities in Kwun Tong, a large proportion of them (51%) believe we should develop creative industries in the area. This shows the public expectation to turn Kwun Tong into a cultural hub in Kowloon east.

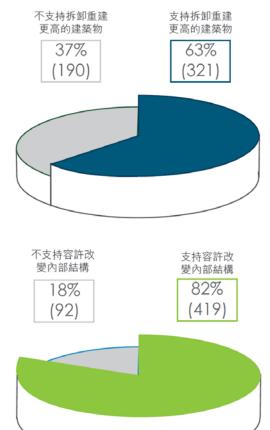


More than 80% of our interviewees support the idea to allow altering the inner structure of industrial buildings so that they can be used in a different way.

We believe the Government should loosen the current regulations on changing the inner structure of industrial buildings and provide financial support to encourage revitalization.

But we believe the Government should not loosen the height restrains and regulations on plot ratio blindly. Or the newly-built high buildings may block the view to ridge line in the area and adversely affect the air circulation in the town center.

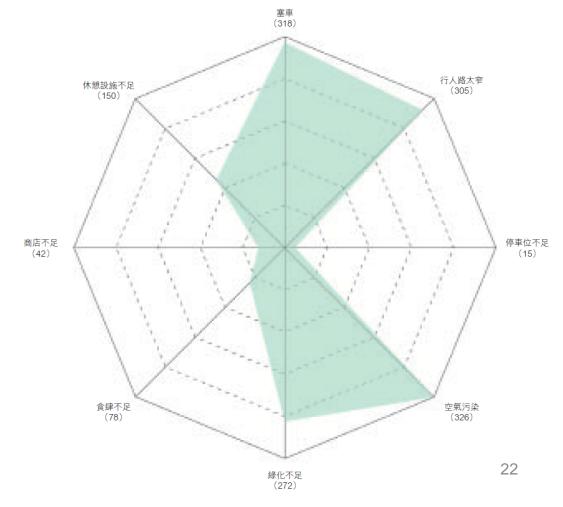
Q: Do you support the idea to demolish industrial buildings and build higher buildings on the sites?



The research finds that most people believe air pollution (326 people), traffic congestion (318 people) and narrow pedestrian paths (305 people) are the most needed to solve problems in the Kwun Tong district.

A number of interviewees (272 people) expressed the view that there are not enough green areas and leisure facilities in the district.

We suggest the government making it a part of contract for developers to leave more spaces for pedestrians and add green areas in new revitalization projects in the future. Q: What problem should be solved first in the Kwun Tong district?



Qualitative Method - Interviews with stakeholders

- Strike a balance between residence and commerce
- Policies are confusing
- Official organizations should take part in the buyout
- Allow conversion of building by floor

- The government should allow application for change of building use
- Allow the owner to pay premium after the project is successful
- Provision of low interest loan by government

- Kwun Tong is convenient
- The area is well developed and I can find everything I want here
- Many designers set up studios in Kwun Tong, there is a brand effect
- I don't want Kwun Tong to be wholly commercial

- Kwun Tong industrial area is part of Hong Kong history
- Roads are too narrow for too many people; water and electric supply is in 50-60s standard
- There is multiple ownership. A facilitator is needed to help the transition
- There are legal constrains on revitalization
- When some owners make money in revitalization, others follow
- Like "EKEO", start with small projects first
- Take care of the traffic



Owner of an industrial building



Owner of an industrial building



Studio atelier j-ar, person in charge



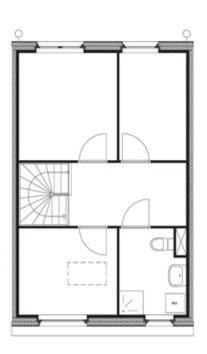
Architect

Recommendation

Possibility of loft living

Vacant industrial buildings can be turned into affordable and pleasant residence and studios.







SWOT Analysis



- 觀塘工業內的產業相當多元化,從傳統工業、辦公室到創意產業,並存在區內,建構出完整日多元的生態網絡
- 交通方便,來往港九各地都非常快捷
- 工業區的佔地大,有大量的工廈,令可 塑性大大提高
- 鄰近啟德發展區帶動觀塘海傍發展

Connectivity

Strengths

優

- 工業區內交通經常擠塞,行人路等環境 設施亦未如理想
- 現時活化以業主自發為主,步伐緩慢, 亦相當被動
- 不同部門政策混亂,令有心活化的業主 無所適從
- 現行「活化工廈」政策未能解決業權分 散工廈的問題

Fragmented Property

Ownership

Weaknesses

Opportunities Rise of housing needs

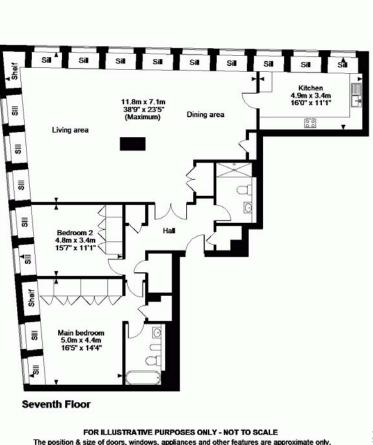
- 觀塘正穩步朝著商貿區的方向發展,不 少業主都把工廈主動活化成商廈
- 啟德發展區及觀塘海濱工程,有助將觀塘工業區發展成新的旅遊中心
- 區內有大量創意產業單位,能將觀塘發展成新型且別具特色的「第四產業」核心
- 如能善用現時區內的大量空置單位,將 能增加觀塘工業區的可能性

Threats Existing framework

- 現時政府未有全盤計劃,協助工業區有 系統地活化;不同土地用途未能妥善協 調,容易產生規劃上的衝突
- 工廈單位租戶未能承受租金升幅,未能立刻找到合適地方搬遷
- 未有仔細規劃道路及休憩設施等問題, 容易令工業區變成過份密集的商業區, 欠缺生氣活力
- 剛冒起的新型產業被扼殺,令工業區特 色消失

Precedents of linternational example of Adaptive Reuse





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Shad Thames, SE1
Approximate gross internal area
158 sq m (1,699 sq ft)

Critical considerations – both Micro and Macro

Micro scale

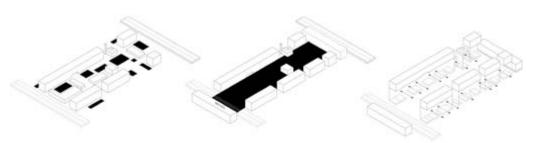
Hardware

- 1. Upgrade to current fire regulations
- 2. Provisions of barrier free access
- 3. Lighting and ventilation
- 4. Buildings Ordinance requirements
- 5. Sanitary fitment provisions
- 6. Drainage
- 7. Refuge Floor requirements

Macro scale

Software

- 1. Upgrade to a livable neighborhood
- 2. Provisions of recreational facilities
- 3. Parks and green spaces
- 4. Public amenities
- 5. Urban planning perspectives
- 6. Livable environment
- 7. Social sustainability





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