Unauthorized Building Works – Does Building Management Regime Matters?

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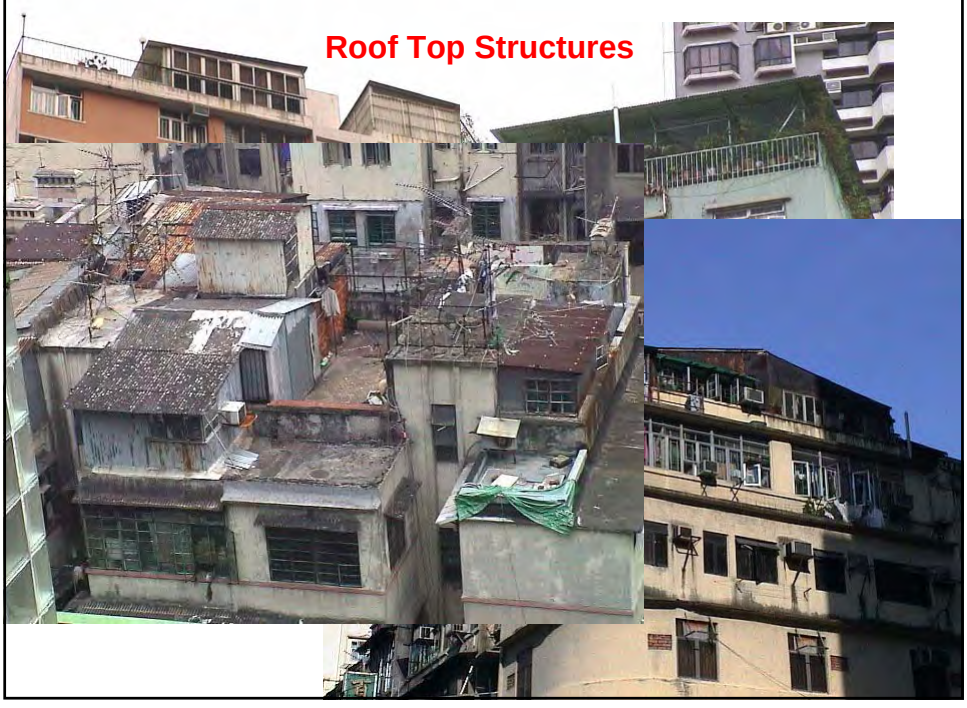
Introduction

- Overview of the proliferation of unauthorized building works (UBWs) in Hong Kong
- First empirical study on this topic
- Appraised and inspected 323 apartment bldgs.
- **Objectives**:
  1. Reasons why UBWs are built;
  2. Distribution of UBWs; and
  3. Hypothesize on relationship of UBWs with management regime.

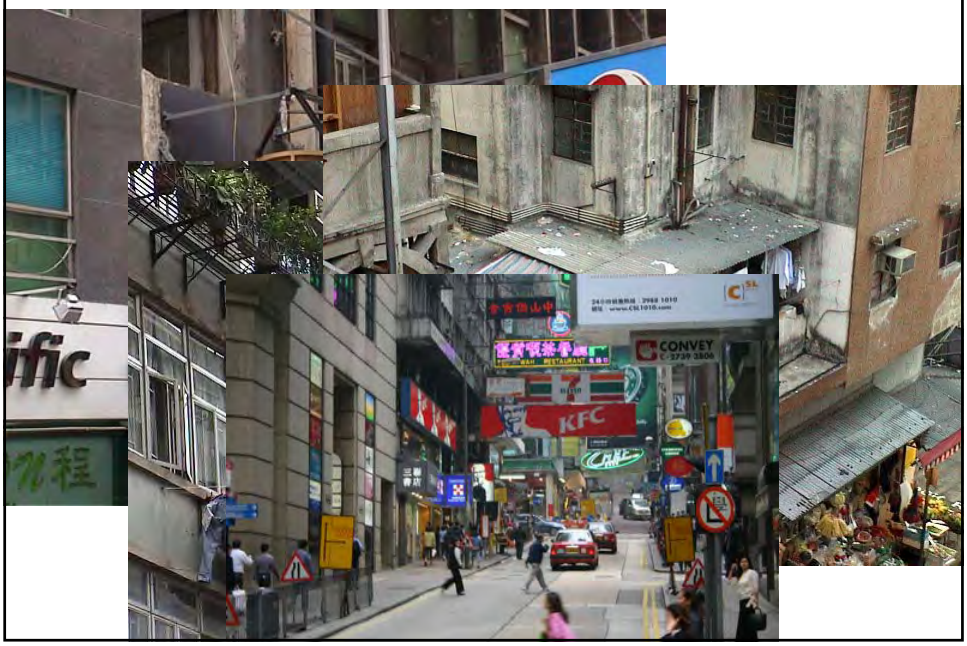
Introduction

- Shelter, as a fundamental human needs, must be **safe**
- **Safe**: harms controlled, health and well-being of all are safeguarded
- Risks and hazards free
- **Hong Kong**: densely populated, high-rise built environment, prone to UBW hazards

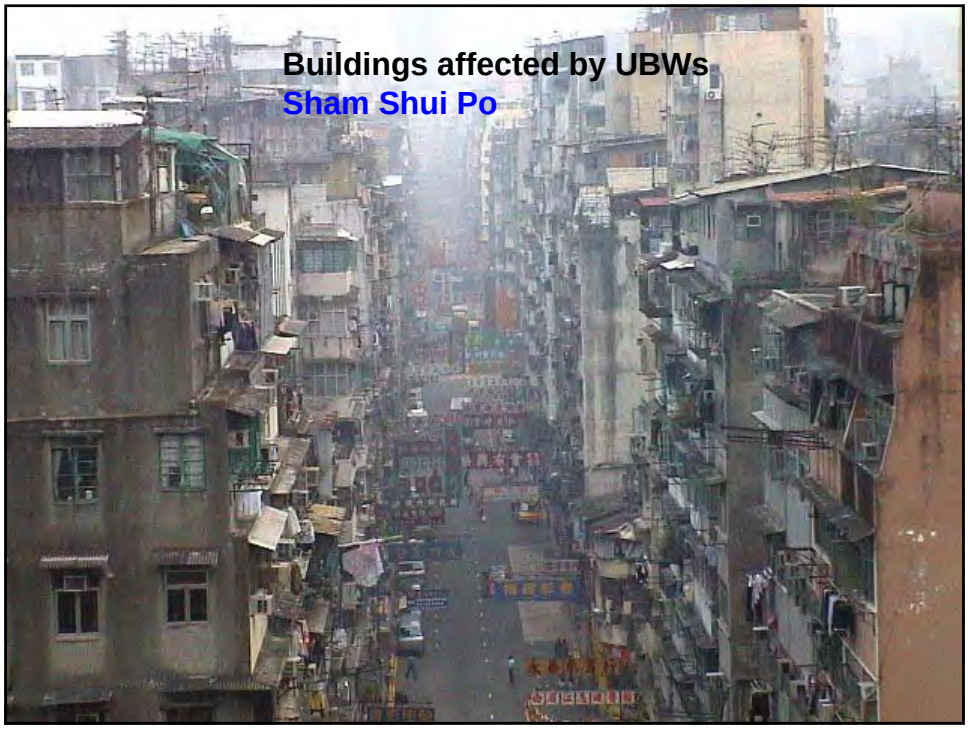


Appendages on External Walls

Others




Buildings affected by UBWs
Sham Shui Po


Buildings affected by UBWs
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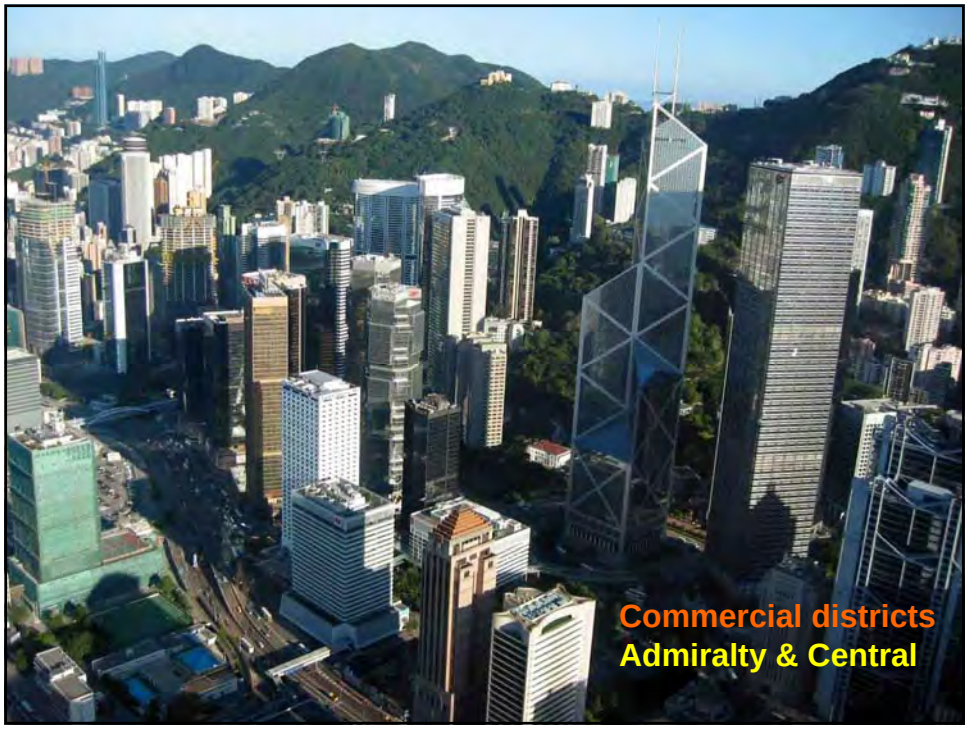
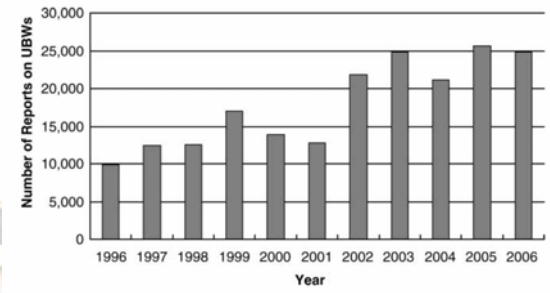
Buildings affected by UBWs
Mid-Levels


Commercial districts
Admiralty & Central

UBW defined

- In general building works completed or undertaken in contravention of the *Buildings Ordinance* are called UBWs
- Estimated No. : **800,000** in 2001, **21** related deaths and **135** injuries between 1990 and 2002



No. of UBW reports received by the Buildings Department

Statutory enforcement against UBWs

Prioritized UBW removal

Building Authority serves order

Compliance by the owner within a specific period of time

Maximum imprison-ment of 1 year

Liable to fine + daily fine

Defective property title: encumbrance in property title causing difficulties in conveyancing

More about HK's built environment

- Dominated by high-rise buildings
- Private residential buildings are largely apartments (39,000 blocks or 1 million units)
- Co-ownership (strata title) arrangement
- Prerequisite to obtain consents from all owners in occasions such as commencement of repair and improvement works in common areas
- Large developments ▸ More units ▸ More residents involved ▸ More difficult to get opinions, consent and consensus ▸ Difficult to take action against individual owners' improper acts

Why did UBW proliferate?

- Scarcity of land resources in Hong Kong:
  - Price of property high
  - Demanding larger livable space per unit
- High enforcement costs
- Ambiguities in the *Buildings Ordinance*
- Poor building management
- Lack of provision of amenities, e.g. no clothes-drying facilities and supports for air-conditioners.

Effects of UBWs

- Structural soundness is doubtful ▸ detrimental to building **safety**
- Foreseeable effects:
  - **Health and safety:** loss of lives, jeopardize building structural stability and fire safety e.g. unauthorized advertisement signs and metal cages on external walls blocking natural light and ventilation, repair and rescue
  - **Economic loss**: aggravates building decay and unpleasant appearance
  - **Social costs:** e.g. legal actions

Difference between various management modes

	Owners Committee (OC)	Incorporated Owners (IO)	Mutual Aid Committee (MAC)	Property Management Agent (PMA)
Similarities	Formation of OC, IO, MAC and PMA is necessary for coordination and as facilitator			
Duties, Functions and Powers	Authorized to monitor PMA under the Deed of Mutual Covenants (DMC) but no statutory powers	A representative body, convene owner meetings, enforce resolutions, appoint, terminate and monitor PMA	Informal and advisory, minimal effect on building management, promotes good neighbourhood	A paid agent, help handling building management issues
Legal Basis	Lack of statutory power but backed by DMC	Statutory as legal entity, prescribed in *Building Management Ordinance* (Cap. 344)	Nil	Not in building management context but in company registration ordinance as legal entity
Government Standpoint	Neutral, IO is more desirable	Recommended and assisted the formation	Neutral, IO is more desirable	Recommended together with IO, assisted the engagement

Hypothesis

- A lot of studies support IO and PMA in:
  - Airing of grievances
  - Coordinate owners to made collective decisions
  - Expertise of PMA
  - Fewer problems and better building conditions
- **Hypothesis**: presence of IO and PMA would have **negative** effects on number of UBWs in buildings

Explanatory Model

- Degree of UBW proliferation is measured by no. of UBWs per unit in a building, which is easier to identify in building surveys

$$UBW = f(BLDG, MGMT) \quad (1)$$

  - **BLDG**: a set of physical characteristics (7 nos.)
  - **MGMT**: a set of factors in which building is managed (4 nos.)

$$UBW = f(AGE, SIZE, UNIT, ESTATE, IO, OC, MAC, PM, ACHOOD, DRYFAC, LOCATION) \quad (2)$$

- where
  - AGE: age of BLDG in years
  - SIZE: average size of dwelling units in BLDG in m^2
  - UNIT: total no. of dwelling units within BLDG
  - ESTATE: dummy variable, 1 for estate type development, otherwise 0
  - IO: dummy variable, 1 for owners corporation formed, otherwise 0
  - OC: dummy variable, 1 for owners committee formed, otherwise 0
  - MAC: dummy variable, 1 for mutual aid committee formed, otherwise 0
  - PM: dummy variable, 1 for employing an external property management agent for building management, otherwise 0
  - ACHOOD: dummy variable, 1 for provision of integrated air-conditioner hoods, otherwise 0
  - DRYFAC: dummy variable, 1 for provision of integrated drying facilities, otherwise 0
  - LOCATION: dummy variable representing the building location

Building variables

- **SIZE**: a potential de-motivators for UBW construction
- **UNIT**: measure the effect of development intensity on UBW proliferation
- **ESTATE**: measure the scale effect
- **ACOHOD & DRYFAC**: expected to have a close association with UBWs
  - With the provision of these amenities in the design, fewer UBWs are expected
- **AGE and LOCATION**: included to control the possible ageing and location effects

The samples

Satellite Image of Hong Kong urban area (adopted from Google Map)

The samples

The Eastern District

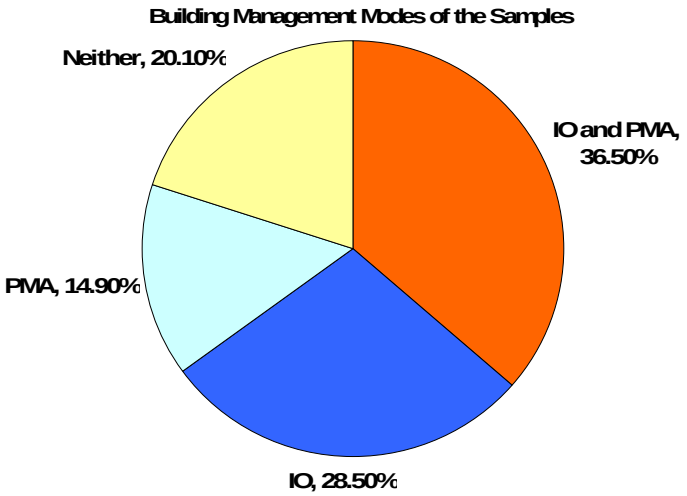
Yau Tsim Mong (YTM)

- The 2 districts have the **largest** no. of residential units in HK
- YTM: 103,906 (**10%** of total stock of units), Eastern District: 125,028 (**12.1%**)
- Great **varieties**: from post war blocks to new, from large estates to single block

Characteristics of the samples

- **No. of buildings** surveyed: YTM: **148** (5.5% of 2,716 total blocks) & Eastern District: **175** (10% of 1,749)
- Mean **age**: **32 years** for both
- Mean **flat size**: **53.53 m^2** (YTM) & **62.51 m^2** (Eastern District)
- Mean **no. of storey**: **11.70** (YTM) & **14.49** (Eastern District)
- Mean **no. of UA**: **107.9** (per BLDG), **2.6** (per dwelling unit)
- Max no. of UA: 869 (per BLDG), 24.5 (per dwelling unit)
- Min no. of UA: 0
- S.D: 132.2 (per BLDG)

Characteristics of the samples



Results of the regression analysis

Variable	Coefficient	*t*-Statistic	
Constant	0.9741	1.8187	**
AGE	0.0248	2.1500	**
SIZE	0.9741	1.8187	***
UNIT	0.0248	2.1500	**
ESTATE	−0.0046	−4.1434	*
IO	−0.0547	−0.1808	
OC	0.2518	0.9479	
MAC	0.5339	1.1163	
PM	−0.1612	−0.5049	
ACHOOD	−0.2425	−1.2082	
DRYFAC	−1.4047	−6.0404	*
PE	−0.5810	−2.6326	*
MK	0.9206	2.9366	*
YMT	0.4871	1.7456	***
TKT	0.7905	2.1282	**
JD	0.2497	0.7606	
TST	0.2755	0.7842	
NP	0.6780	2.0661	**
TH	0.7831	2.8330	*
R^2	0.38	Adjusted R^2	0.35
F-statistic	10.50*	Number of observations	323
Dependent variable	*UBW*		

Notes: *Significant at the 1% level; **significant at the 5% level; and ***significant at the 10% level.

Effects of building characteristics on UBW

- **AGE** and **SIZE** had **positive** effects on UBW:
  - Aging building problem
  - Lack of useable space was probably not a major cause
- But **SIZE** may not reflect the building population density in a building. Building populations were not input into the model, and the latter is more relevant

Effects of building characteristics on UBW

- **Amenity features** have **negative** effects which help reduce the no. of low-risk UBWs:
  - Provision of **AC hoods**: UBW ↓ by 1.3 per unit
  - Provision of **clothes drying facilities**: UBW ↓ by 0.6 per unit
- Government should observe such needs in design and development of apartment buildings in future

Effects of development scale on UBW

- Effect of development scale on UBWs:
  - UNIT: significantly **positive** effect
  - ESTATE: significantly **negative** effect
  - May confirm the contentions that:
    1. UNIT ↑ results in more difficult coordination,
    2. the 'common value' is a motivator to control UBW actively in estate type developments
- Robust conclusion, nevertheless, cannot be drawn

Effects of management mode on UBW

- **Insignificant**: buildings with IO and/or PMA did not necessarily have fewer UBWs
- Possible problems :
  - Appointment of PMA (any check-and-balance mechanism?)
  - inactive participation of IO and OC
  - formation of rival groups within owners
  - presence of 'weak principal-strong agent' situation
  - conflicts between IO and PMA

Solutions to the UBW problem

- **Governmental approach** to eliminate UBW problems through assisting IO formation and PMA engagement could be IN VAIN
- Granting **retrospective approvals** to the authorized works (Ho, 1993) backed by safety validations?
- **Tightened law enforcement** through more frequent inspections and heavier punishment
  - In Wu and Wu (2003), the above measures have shown to reduce unauthorized land uses in mainland China

Solutions to the UBW problem

- **Community education**, together with legislation, to arouse the public awareness in UBWs and promote built environment safety
- Constructing buildings with more amenities such as air-conditioning hoods/ platforms, with **plot ratio exemption** as incentives or making their provision **mandatory**

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THANK YOU!

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