Cracking Down on Illegal Subdivided Units in Industrial Buildings
A policy Delphi study in Hong Kong

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Abstract—The lack of land and housing supply has resulted in shortage of affordable housing in Hong Kong. Low-incomers, new immigrants and many others cannot afford high rents so they seek accommodations in the informal sector. This surging demand for informal housing is conducive to the proliferation of illegal subdivided units (ISUs) in industrial buildings in the city. The ISUs have posed serious safety threats to the building occupants. This study aims to explore workable policy options to crack down on the problem of ISUs in industrial buildings in Hong Kong. A three-round policy Delphi study is carried out with an expert panel to identify and prioritize policy options for combating the problem. Different measures ranging from increasing the frequency of building inspections and imposing heavier penalties on non-conforming owners to revitalizing industrial premises for domestic uses are proposed by the panel members. Among these options, stricter enforcement is considered the most workable option in terms of desirability and feasibility. The results of the policy Delphi study are discussed and policy recommendations are made.

Keywords—building control; building illegality; policy Delphi; illegal subdivided units; unauthorized building works

I. INTRODUCTION

Various forces such as unaffordable rent in the private housing sector and long waiting list for public rental housing drive some people to live in transient accommodations in illegal subdivided units (ISUs) in Hong Kong. ISUs are often resulted from unlawful flat subdivision. Flat subdivision generally refers to the situation where “individual living quarters having been subdivided into two or more smaller units for rental” [1]. As at April 2013, 18,800 quarters were subdivided in the city, producing 66,900 subdivided units and accommodating 171,300 people (accounting for 2.4% of Hong Kong’s total population) [1]. Yet, these estimations did not include those ISUs in residential buildings built after 1988 and industrial buildings. While ISU problem in private housing stock has been studied, little attention has been paid to the problem in industrial buildings. In fact, ISUs in industrial buildings have created many firetraps and public health concerns in the city [2, 3]. This paper thus aims to identify and prioritize policy options for cracking down on the problem of ISUs in Hong Kong’s industrial buildings. Although it is generally believed that increase in land and housing supply is the ultimate solution to the ISU problem in Hong Kong, finding land for housing development in the city is politically thorny. Therefore, supply of more affordable housing is never an immediate solution to the ISU problem and the current research looks for some workable short-term and medium-term solutions.

II. ILLEGAL DWELLINGS IN INDUSTRIAL BUILDINGS

In the early 2010s, Hong Kong’s economy started its recovery from the global financial turmoil. At the same time, the supply of new housing could not catch up with surging housing demand arising from new immigrants and household formation. Although public rental housing could provide accommodations to low-incomers at affordable costs, the waiting time has been notoriously long. Many families had to seek their accommodations in the private rental sector but it was clear that housing costs and family incomes fell out of balance. In view of the imbalance in the housing market, unscrupulous landlords attempted to make sizeable sums of money from converting their industrial properties into dwellings by subdividing the space.

In fact, illegal conversion of industrial properties into dwellings is not unique to Hong Kong. Illegal housing in industrial buildings is prevalent in big cities in Australia, United Kingdom and United States and many other countries [4-6]. Illegal accommodations in industrial premises are in general issues of land use change and building control. Accommodations in industrial sites are strictly prohibited by zoning regulations in most jurisdictions for various reasons like public health, fire safety, traffic congestion and living density concerns. As far as building control is concerned, production of this type of illegal housing usually involves unlawful or unauthorized building works (UBWs). In most cases, conversion of industrial space into dwelling units comprises spatial remodeling or subdivision. Since the works are carried out in industrial zones where dwellings are disallowed, prior approvals from the public authorities are not obtained before the start of the conversion works.

III. ENFORCEMENT AGAINST ILLEGAL SUBDIVIDED UNITS IN INDUSTRIAL BUILDINGS

A. In Hong Kong

In Hong Kong, enforcements against ISUs in industrial buildings come under three main headings, namely building control, planning control and lease enforcements. In the
building control regime, all building works in Hong Kong, including construction of new buildings, additions and alterations to existing buildings and demolition works are subject to statutory control under the Buildings Ordinance. To ascertain that the design and carrying out of a building work meet the minimum acceptable standard, approval of building plans and commencement consent must be obtained from the Building Authority before the building work can commence [7, 8]. Building works carried out in contravention of this stipulation are generally regarded as UBWs.

The Buildings Department enforces against UBWs in the city. Section 24(1) of the Buildings Ordinance empowers the Building Authority to serve statutory orders on building owners, who can be individual property owners or owners’ corporations, to remove any UBW within a specified period of time. The UBW that has to be removed is explicitly specified in an order. Statutory order of this kind is commonly known as a “removal order” or “reinstatement order” [8]. The subject of the statutory order is required to reinstate the parts of the building illegally altered to the original state as per the Buildings Department’s record drawings [8]. In case the reinstatement work is substantial or involves structural work, the Building Authority may specifically require the subject of the reinstatement order to appoint a prescribed building professional to coordinate and supervise the reinstatement work on the subject’s behalf. Concurrently, a registered contractor needs to be appointed to carry out the works under the supervision of the prescribed building professional for some more complex reinstatement works. Even if conversion does not involve any building work, material change in use of a building or part of a building (say from industrial use to domestic use) still requires the prior approval of the Building Authority under Section 25 of the Buildings Ordinance. In some extreme cases, if the Building Authority is in the opinion that the whole or part of a building in not suitable for occupation, it can apply to the court for a closure order [9].

For an effective control against UBWs, there must be sanctions for those ignoring the legal requirements. In Hong Kong, statutory and non-statutory sanctions are employed in parallel. On the statutory side, Section 40 (1BA) of the Buildings Ordinance stipulates that non-compliance with a statutory order served under Section 24 (1), without any reasonable excuse, is a criminal offence. The offenders are liable, on conviction, to a fine of up to HK$200,000 and imprisonment of up to one year. To supplement the criminal punishment, the statutory orders issued are registered with the Land Registry against the titles of the properties concerned [8]. The registration will only be discharged when the owners comply with the subject order to the satisfaction of the Building Authority [10]. With the enactment of the Building (Amendment) Ordinance 2004, the Building Authority is authorized to issue warning notices to owners of premises with UBWs and to register the notices in the Land Registry if the UBWs are not removed within a specified period. The registered orders and warning letters serve as encumbrances in title which may diminish property values and give economic disincentive to property owners to undertake UBWs in their properties.

Planning control system in Hong Kong is mainly founded on the statutory plans (e.g. Outline Zoning Plans, Development Permission Area Plans and Development Scheme Plans) produced under the different legislations like the Town Planning Ordinance and Urban Renewal Authority Ordinance. Land usage not fulfilling the specific land use requirements in the respective statutory plans is subject to enforcement and prosecution actions. The Planning Authority may serve notices on the respective land owners, occupiers and responsible persons, requiring them to discontinue the non-conforming use by a specified date unless planning permission for the proposed new land use is obtained, or demanding a reinstatement of the land. It is an offence in law if the requirements of the notices are not complied with [10]. On the other hand, lease enforcement is non-statutory in nature but applicable to all leased land, particularly those non-domestic sites, in Hong Kong. It relies on the enforcement of the terms or conditions in government leases. Land uses and parameters of development potential are specified in the government leases. Non-conforming use of a site, including running ISUs in an industrial building erected on a non-domestic site, is a breach of lease condition. Upon the identification of non-conforming uses, the Lands Department issue warning letters to the leaseholders concerned to request them to stop the non-conformance. If the warning is ignored, the Hong Kong Government can re-enter the land or properties with non-conforming uses.

In spite of the control regimes, bureaucratic incapacity of the government departments has been one of the major obstacles to the effective control of ISUs in Hong Kong [12-14]. Given the very safety and health concerns arising from the ISU proliferation in industrial properties in Hong Kong, it is crystal clear that a more effective policy is urgently needed to bring the problem in the city to an end.

B. Overseas

Different measures or policies have been adopted by governments around the world to deal with the issue of illegal dwellings in industrial premises. Planning codes are the most commonly used weapons. In the United States, any residential use in industrial zones without due authorization constitutes a violation of the planning codes. The respective planning authority, upon identification of the violation, will require the offender to discontinue or correct the violation. Non-compliance with the authority’s notice or order without a reasonable excuse is a misdemeanor or criminal offense. Similar systems are adopted in Canada and Australia.

As far as building control is concerned, if creation of ISUs in industrial buildings contravene building codes or regulations, public authorities in many jurisdictions will order the property owners to reinstate the properties. Failure to comply with the statutory orders can be a serious criminal offence. For example, in Singapore, a property owner who fails to comply with a statutory enforcement order is liable on conviction to maximum penalty with a fine of SGD$20,000 and six-month imprisonment.
In many occasions, ISUs become popular in a housing market with active marketing by real estate brokers. In this light, governments can depopularize ISUs by removing the intermediaries in the leasing or trading of these informal dwellings through regulating the brokerage practices. For example, real estate brokerage companies in Beijing are asked to sign an agreement with the Beijing Municipal of Housing, Land and Resources Administration to undertake that they will not engage in improper brokerage practices including leasing or trading of ISUs. Companies which breach the agreement will be punished. In England, the government proposes to ban the real estate agents who repeated participate in rouge letting from being involved in letting of residential properties for a specified period [15].

IV. RESEARCH METHODOLOGY

To formulate a workable and well-informed policy for combating ISUs in Hong Kong’s industrial buildings, it is essential to obtain as many available options as possible and experts’ views towards these options. With a view to more and better ideas, this study adopts a group-based approach, rather than individual-based approach [16-18]. Among a wide range of group-based idea generation techniques, policy Delphi is employed because it fits the objectives of this study best.

A. The Policy Delphi Technique

Policy Delphi is a variant of conventional Delphi. It is designed to ensure that all possible options are on the agenda so decision-makers can have the best possible information for decision-making [19, 20]. Unlike the conventional Delphi method which is designed to pursue a consensus on a particular topic among a group of experts, policy Delphi seeks to generate the widest possible spectrum of views on the potential resolutions of a major policy issue [20]. Policy Delphi targets at the breadth of an issue more rather than the depth [21]. It is advantageous to scenarios where decision-makers look for a group of experts or informed advocates to suggest all of the possible options and justifications for their consideration rather than coming up with a decision for them. In other words, this technique is suitable for policy analysis, rather than for achieving a decision.

Policy Delphi is operated with a series of organized steps for obtaining, exchanging and developing informed opinions on a specific topic [22]. It usually includes several rounds of question-response exercise. With some adaptations, it can also allow the expert panel to evaluate the acceptability and potential impacts of the identified options to a problem. Similar to the conventional Delphi, the design of policy Delphi should fulfill a number of essential principles such as anonymity and feedback [23, 24]. The maintenance of the anonymity aims to encourage a candid debate, independent of personalities. None of the participants know the identities of the others so as to minimize the mutual influences among individual participants. Moreover, the consolidated inputs of the participants in each round of question-response exercise (usually except the last one) are revealed to all participants. The questionnaire for each round is developed based on the results of the previous rounds. Besides, it is important that inputs of the participants are convertible into quantitative data so statistical analyses can be performed.

B. The Expert Panel

Vigilant design of the expert panel is crucial to the success of a policy Delphi exercise. Panel size is not the most important design parameter though large panels may entail more statistically valid results. What is more important is that the mix of experts from different backgrounds in the panel is well-adjusted [25, 26]. With this point in mind, this study targets those people with a committed interest in the quality of the built environment and in-depth knowledge of ISU issue in Hong Kong as the panel members for the policy Delphi process. The target panel members are divided into three groups. The first group, which is the largest among three, includes different types of building professionals from the private and public sectors. These building professionals include architects, building surveyors, engineers, housing managers and town planners. They are the major regulators, designers or caretakers of the built environment in Hong Kong. The second group includes district councillors in the districts with serious ISU problems (e.g. Sham Shui Po, Tsuen Wan, Tokwawan and Yau Tsim Mong). The last group comprises residents of buildings with ISU problem. Chairmen of the resident associations and representatives from locally-based concern groups belong to this group. The inclusion of the second and third groups in the study aims to offer suggestions and views not just from a technical angle but also from a more people-oriented perspective.

Purposive sampling, which is commonly used in policy Delphi studies [27], is employed for the selection of panel members for this study. As shown in Table I, three hundred target participants are invited to take part in the policy Delphi study, with 240 building professionals (Group A), 30 district councillors (Group B) and 30 other stakeholders like chairmen of resident associations and representatives of locally-based concern groups (Group C). For the purposes of convenience and paper saving, target participants are invited to complete the policy Delphi survey electronically using the web-based platform Qualtrics. On the other hand, paper survey is conducted on the third-group participants.

<table>
<thead>
<tr>
<th>Group</th>
<th>Invites</th>
<th>First-round Respondent</th>
<th>Second-round Respondent</th>
<th>Third-round Respondent</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>240</td>
<td>119</td>
<td>113</td>
<td>107</td>
</tr>
<tr>
<td>B</td>
<td>30</td>
<td>19</td>
<td>16</td>
<td>15</td>
</tr>
<tr>
<td>C</td>
<td>30</td>
<td>12</td>
<td>11</td>
<td>10</td>
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</table>

C. Design of the Policy Delphi Process

For this study, the policy issue is about resolving the ISU problem in Hong Kong’s industrial buildings. The policy Delphi process has the four steps: 1) exposing the options; 2) determining initial positions on the issues; 3) exploring and obtaining the reasons for disagreements; and 4) re-evaluating...
the options. To complete these four steps, three rounds of policy Delphi survey are undertaken. Following the research design suggested by previous studies, a specific questionnaire is designed for each round of the survey [21]. In the first-round survey, the participants are mainly asked what action or policy can be taken to cope with the ISU problem in Hong Kong’s industrial buildings. Background information about the problem of ISUs in industrial buildings and brief summary of control measures adopted in other countries are given to the participants for reference together with the questionnaire. In this round, each participant can suggest any number of policy options that he or she regards as workable. However, it has been commonly believed that increase of housing supply in both public and private sectors is the ultimate solution of the ISU problem in Hong Kong. However, this goal cannot be achieved in the short run because of the complex and politicized land administration and town planning issues in the city. Therefore, the participants are advised not to consider increase of housing supply as a policy option.

In the second round, the same group of participants will evaluate the consolidated options suggested during the first round. They are asked whether the policy options identified are desirable and feasible using two six-point rating scales (from 6=very desirable to 1=very undesirable; and from 6=definitely feasible to 1=definitely unfeasible). The desirability scale elicits opinions about the potential benefits of certain policy options. On the other hand, feasibility refers to the likelihood that specific options might reach the policy goals. Besides, the participants are asked for open-end responses for explaining their evaluation (e.g. why a low level of desirability is accorded to a specific option). From the participants’ ratings obtained from the second round, it is possible to determine, for each suggested option, whether there is consensus or disagreement among the respondents. Besides, this exercise reveals the reasons for the consensus or disagreement. In the third-round survey, the participants are informed of the consolidated inputs from all respondents in the second round and they are then required to reassess their initial positions. Each participant is asked to rate the desirability and feasibility of each policy option based on the respective six-point scales. Yet, the third-round survey is committed solely to information feedback, rather than to achieving a consensus among the participants. The questionnaires for all three rounds of the survey are pretested before the official surveys.

V. RESEARCH FINDINGS AND DISCUSSION

Invitations to take part in the policy Delphi study and the questionnaire for the first-round survey were sent to the 300 target participants in December 2015. 150 of the 300 invitees (50%) agreed to participate in the policy Delphi process by submitting responses to the first-round survey. The overall response rate of district councillor group was the highest (63.3%). The panels completing both the second and third rounds consisted of 139 and 131 respectively. In other words, eleven participants in the first round dropped out in the second round and eight participants in the second round dropped out in the third round. The second-round survey was conducted in February 2016, and the third-round survey in March 2016. Table I describes the distributions of the panel members participating in different rounds of the survey.

In the first-round survey, the 150 panel members returned 382 valid options that can possibly tackle the ISU problem in Hong Kong’s industrial premises. Some of these suggested options were alike or duplicated. After a thorough review of all of the options proposed by the panel members, the options were consolidated into thirteen options coming under four broad categories, which are listed and described in Table II. For option ED1, programmes for educating the general public about what ISUs are and the negative outcomes that ISUs in industrial premises bring about will be launched. As far as building and planning control is concerned, option BP1 suggests that the government should consider waiving the warrant requirement or simplifying the process of obtaining a warrant for the entry of public officials into premises for inspection. Option BP2 is about increasing the frequency of inspections for ISUs in industrial premises by officials from the Lands Department, Buildings Department, Planning Department, Fire Services Department and/or other relevant government authorities. Option BP3 concerns the imposition of heavier punishments against the owners and/or builders of ISUs in industrial premises. As for option BP4, the government should consider increasing the rate of prosecuting the non-conformers of the statutory orders, notices and/or directions issued under relevant ordinances with respect to ISUs in industrial premises. Option BP5 is about more intensive use of the statutory power to close ISUs spotted in industrial premises. Option BP6 submits the inclusion of ISU identification as an essential inspection element in the Mandatory Building Inspection Scheme. Option BP7 refers to criminalization of creation of ISUs in industrial premises.

<table>
<thead>
<tr>
<th>Category</th>
<th>Option</th>
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<tbody>
<tr>
<td>Education</td>
<td>(ED1) Public education programs</td>
</tr>
<tr>
<td></td>
<td>(BP1) Facilitation of in-flat inspection</td>
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<tr>
<td></td>
<td>(BP2) More frequent patrols by public officials</td>
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<tr>
<td></td>
<td>(BP3) Heavier sanctions against non-conformers</td>
</tr>
<tr>
<td></td>
<td>(BP4) Higher prosecution rate</td>
</tr>
<tr>
<td></td>
<td>(BP5) Closure of ISUs in industrial premises</td>
</tr>
<tr>
<td></td>
<td>(BP6) Mandatory building inspection</td>
</tr>
<tr>
<td></td>
<td>(BP7) Criminalization of building works for creating ISUs in industrial premises</td>
</tr>
<tr>
<td>Incentivization</td>
<td>(IN1) Rewarding the informants</td>
</tr>
<tr>
<td></td>
<td>(IN2) Regulation of brokerage practices</td>
</tr>
<tr>
<td></td>
<td>(IN3) Criminalization of ISU leasing in industrial premises</td>
</tr>
<tr>
<td></td>
<td>(IN4) Forfeiture of ISUs in industrial premises</td>
</tr>
<tr>
<td>Property Conversion</td>
<td>(PC1) Revitalization of industrial premises for domestic uses</td>
</tr>
</tbody>
</table>
On the incentivization side, option IN1 is about offering rewards to people who provide the public agencies useful information about the existence of ISUs in an industrial building. Option IN2 deals with penalizing real estate agents who undertake leasing or transaction of ISUs in industrial premises, say by means of license suspension or lifetime disqualification. Option IN3 regards amending the law and making leasing of ISUs in industrial premises as a criminal offence. Option IN4 proposes the government to re-enter or seize industrial premises which used as illegal dwellings. The last consolidated option PC1 is about facilitation of conversion and/or revitalization of industrial buildings for domestic uses.

In the second and third rounds, the panel members were directed to rate each of the thirteen consolidated options obtained from the first round with reference to its desirability and feasibility. Tables III and IV summarize the panel members’ responses with regard to desirability and feasibility respectively in the second and third rounds.

### Table III. Mean Desirability and Feasibility Ratings

<table>
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<tr>
<th>Option</th>
<th>Desirability Rating</th>
<th>Feasibility Rating</th>
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<tbody>
<tr>
<td></td>
<td>Second Round</td>
<td>Third Round</td>
</tr>
<tr>
<td>ED1</td>
<td>3.12</td>
<td>3.13</td>
</tr>
<tr>
<td>BP1</td>
<td>3.87</td>
<td>3.84</td>
</tr>
<tr>
<td>BP2</td>
<td>4.41</td>
<td>4.42</td>
</tr>
<tr>
<td>BP3</td>
<td>4.68</td>
<td>4.67</td>
</tr>
<tr>
<td>BP4</td>
<td>4.34</td>
<td>4.31</td>
</tr>
<tr>
<td>BP5</td>
<td>4.31</td>
<td>4.34</td>
</tr>
<tr>
<td>BP6</td>
<td>3.46</td>
<td>3.45</td>
</tr>
<tr>
<td>BP7</td>
<td>3.48</td>
<td>3.48</td>
</tr>
<tr>
<td>IN1</td>
<td>3.35</td>
<td>3.32</td>
</tr>
<tr>
<td>IN2</td>
<td>3.47</td>
<td>3.51</td>
</tr>
<tr>
<td>IN3</td>
<td>3.86</td>
<td>3.84</td>
</tr>
<tr>
<td>IN4</td>
<td>4.33</td>
<td>4.34</td>
</tr>
<tr>
<td>PC1</td>
<td>2.64</td>
<td>2.62</td>
</tr>
</tbody>
</table>

The results obtained in the second and third rounds of the policy Delphi survey did not deviate significantly. As far as the desirability criterion is concerned, “heavier sanctions against non-conformers” (4.67) had the highest mean rating in the third round, followed by “more frequent patrols” (4.42), “closure of ISUs in industrial premises” (4.34), and “forfeiture of ISUs in industrial premises” (3.42). These findings imply that stepping up of the enforcement actions was viewed as the most desirable strategy in solving the ISU problem in industrial premises in Hong Kong. By imposing heavier punishments or penalties on the non-conformers, who can be owners or builders of UBWs, the government could deter the law violations. On the other hand, “revitalization of industrial premises for domestic uses” (2.62) and “public education” (3.13) were rated as the least desirable options. Some of the panel members expressed that the most industrial premises are not suitable for residential purposes because of the safety and environmental health concerns.

As for feasibility, “public education programs” (4.38) was ranked the first, with “heavier sanctions against non-conformers” (4.37) and “regulation of brokerage practices” (4.11) being the second and third respectively. Conversely, “criminalization of building works for creating ISUs in industrial premises” (4.24) and “criminalization of ISU leasing in industrial premises” (4.27) received the lowest feasibility ratings. Some panel members opined that the legislative proposals for criminalization would be subject to strong oppositions from the marginal residents unless there was enough public and private housing supply in Hong Kong.

Overall speaking, public education programs were generally regarded politically acceptable and practically feasible but not very effective in controlling ISUs in Hong Kong’s industrial premises. Stepping up enforcements against non-conformers by means of heavier penalties, more frequent patrols and higher rate of closing ISUs in industrial premises were considered desirable and feasible solutions. Moreover, disincentivization through re-entering or seizing of industrial premises used as ISUs was found an acceptable option to the problem ISU proliferation in Hong Kong’s industrial premises. In fact, the policy options investigated in the study are not mutually exclusive. Some options can complement each other. For example, the stricter enforcements against perpetrators can be supplemented by public education and incentivization programs in order to achieve better policy outcomes.

### VI. Conclusion

Supply-demand imbalance of the local housing market, profiteering practices of landlords and many other factors contribute to the proliferation of ISUs in industrial buildings in Hong Kong. These illegal conversions create deathtraps when the industrial buildings accommodate other relatively dangerous trades and the space is remodeled with mazes of corridors. Moreover, ISUs in industrial buildings pose health risks on and induce clashes between occupants. Besides, they reduce a neighborhood’s quality of life by straining essential services and causing overcrowding. Drawing on the findings of the three-round policy Delphi survey, this study aims to explore workable policy options to combat the ISU problem in Hong Kong’s industrial buildings. The research findings suggested that imposing heavier punishments against non-conformers is the most preferable policy option.

To further examine the suitability of the proposed policy options, scholars and policy makers should conduct all-inclusive social impact assessments and detailed cost-benefit analyses on the options. While the use of expert panels has been recommended for policy Delphi, the involvement of the general public in the policy making process is still indispensable. Therefore, the views of other stakeholders in the community should receive full consideration in the formulation of an acceptable policy to deal with the proliferation of ISUs in industrial buildings in Hong Kong.
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