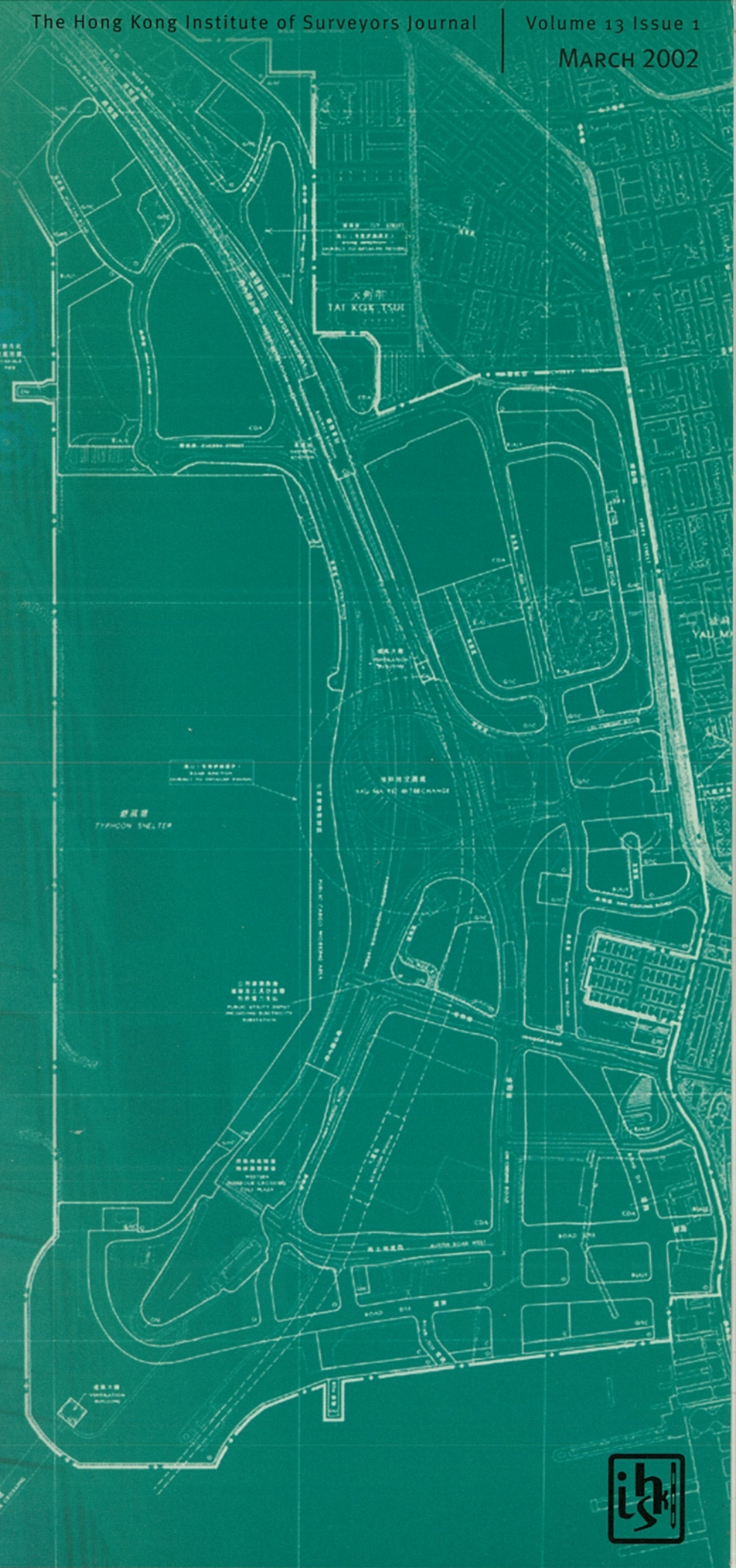


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Transfer of Development Rights as an Incentive for Historic Preservation: the Hong Kong Case

Jeffrey W. Cody

Does transfer of development rights [TDR] function in Hong Kong? Not exactly, but there are a few precedents that hold some promise for future action and there are a few recent cases where transfers have been tried. An explanation of salient lessons to be learned from these precedents and cases will form the backbone of this paper. Regarding TDRs, where is Hong Kong heading? Some government planners have confidentially expressed some cautious hope that perhaps in the future Hong Kong's decision makers in the Secretariat for the Planning, Environment and Lands Branch of the Government will be more courageous about experimenting with this incentive for heritage site protection. Given current concerns about offsetting the economic downturn, if TDRs can be demonstrated to be catalysts for investment, then the political will might materialize so that the necessary, positive changes can be made to current planning regulations and more creative transfers can occur. To make those transfers possible, bolder precedents than the ones I am about to explain are needed.

Below I will discuss five cases related to TDRs in Hong Kong. The first is a curious TDR mechanism for land resumption initiated by the Government in 1960 that was restricted for use only in Hong Kong's New Territories and sadly was allowed to expire in 1997. The second is the Lee Theatre project in densely-urban Causeway Bay where a transfer of development rights might have been used effectively, but was not, because of rigid planning regulations that seem to prevent "non in-situ" transfers of develop-

ment rights. However, the third, fourth and fifth cases all point to some possibilities for TDRs where owners' lots are contiguous. The third case is related to a 1930s Hakka residence near Yuen Long in the New Territories where the developer agreed to retain the house in exchange for more plot ratio (as development rights are commonly termed in Hong Kong) on adjacent mid-rise towers. The fourth example concerns a site associated with the former London Mission in Hong Kong's Mid-Levels where, by agreeing to renovate this 1893 historic building, the developer was granted permission to build two, 30-story residential towers adjacent to the historic site. The final example centers around one of Hong Kong's newest megatowers in Central, the Cheung Kong Center, between the Bank of China and the Hong Kong-Shanghai Bank, where the developer was given more plot ratio in exchange for paying some maintenance costs associated with two highly significant historic buildings on adjacent parcels. I will close by suggesting how some of these cracks in the doorway toward TDRs in Hong Kong might be widened.

CASE #1: "LETTERS B": A USEFUL PRECEDENT FROM THE NEW TERRITORIES

The first case of a TDR in Hong Kong was known as the "Letter B" system, which had a major impact in permitting government planners to redesign large areas of the New Territories. After the disastrous Shek Kip Mei squatter settlement fire in 1953, the Government began to turn its attention more

assiduously to the question of how to improve Hong Kong's housing problems, and one result of that was the creation of a New Towns policy beginning in 1957. Three years later, after the Government had selected six sites for development and as it sought to convert land from agriculture to either industrial or higher-density residential uses, two problems had crystallized: (1) there was more privately-held land than "unallocated Crown land" for development, and (2) for monetary reasons, village landowners wanted to either sell or lease their land to private developers rather than to the Government. To address these two problems, "in 1960 the Government devised a way simultaneously through a program of TDRs. For every five square feet of agricultural land surrendered, two square feet of building land was allocated (in the form of a certificate), and the Government paid the villager a premium based on the difference in value."

[1] This 5: 2 ratio became the basis for a generation of land-use development schemes in the New Territories, as villagers were able to sell their development rights on the open market to developers, who amassed the certificates (usually called "Letters B") that could be used for increased plot ratio on selected, government-sanctioned parcels in the New Territories.

[2] Essentially this example demonstrates Hong Kong's curiously socialistic land tenure system within a notoriously capitalistic economy.

[3] As a result of this system of land exchange entitlements, some village landowners became richer and invested some of their new-found wealth in local building projects, some of which improved village welfare but not all of which implied architectural preservation. In some cases, such as at Tai Wai, although historic vernacular architecture was not always entirely conserved, the scale of construction was modulated so that higher-rise development occurred beyond village limits. In many other cases, however, the built form of villages experienced dramatic shifts. This was because concurrent with the creation of the Letter B system in the early 1960s, building regulations for "village-type houses" were also put into

effect, limiting their size to 700 square feet and their height to 25 feet, and effectively creating the incentive to erect what one observer has called "shoddy concrete boxes [that stand] cheek-by-jowl with old stone houses, and Spanish style townhouses in the midst of the former [rice] paddy."

[4] Although historic preservationists might argue that the Letter B system did not always yield positive results where vernacular architectural conservation was concerned, this now-obsolete system holds an important first lesson for TDRs in turn-of-the-millennium Hong Kong: that the transfer of plot ratio worked profitably both for landowners and developers. The system was symbiotic in the sense that both seller and buyer benefited, it was economically efficient for the Government in the sense that Government funds did not have to be allocated for the system to work, and in many cases it retained a human sense of scale throughout many village environments in the New Territories. It is also curious to imagine that this system was instituted in 1960, eight years before the much more famous 1968 case in New York City where the city changed its Zoning Resolution to include Section 74-79 that permitted "Transfer of Development Rights from Landmark Sites", and twelve years before the equally famous 1972 demolition of Chicago's Old Stock Exchange that sparked the so-called "Chicago Plan" for incentive zoning.

[5] The point I am making here is that the Letter B system is an important precedent for Hong Kong's planners, suggesting that similar incentives might hold promising benefits for other resources in the territory, especially if these resources are clustered in discrete districts, akin to "villages" in the context of the Letter B system.

[6] This point will be discussed more fully below.

CASE #2: LEE THEATRE: NON-CONTIGUOUS SITES = NO TRANSFER

The Lee Theatre demolition by the Hysan Development Company is an unfortunate example of what

occurs frequently in Hong Kong where only a single parcel's redevelopment is considered for review, rather than viewing that redevelopment's impact on the surrounding context. In 1995, the Lee Theatre constructed in 1923 for Western and Chinese performing arts had become one of Hong Kong's last remaining historic cinemas, occupying a key intersection in Causeway Bay, the most expensive property rental area in Hong Kong.

[7] The Lee family, which has extensive holdings in the vicinity and is the majority shareholder in



Hysan Development, wanted to increase the investment value of the theatre site, and thus decided to sell it so Hysan could construct a 22-story shopping plaza on the site, which is what occurred. [8] The demolition was a tragic, missed opportunity because if the Lee family had been able to transfer plot ratio from the theatre to another of its many nearby properties, then the theatre might have been saved. The Lee Theatre case illustrates one of three curious possibilities for transferring plot

ratio in Hong Kong, only two of which are viable options at the moment. These three possibilities are:

- (1) amalgamating an owner's development rights from a constellation of non-adjacent parcels into one larger site;
- (2) amalgamating an owner's development rights from contiguous sites into one larger site; or
- (3) "surrendering" ownership of a constellation of sites to the Government and then having the Government "regrant" ownership for a new, larger parcel with more development rights.

In the Lee Theatre case, the first option might have been operative, but was not because of the dispersed nature of the Lees' holdings. In the subsequent cases I will be discussing, the second

possibility mentioned above - consolidating contiguous sites into one "comprehensive development area" [CDA] and then negotiating specific plot ratios - seems the most promising one.

[9] The "surrender and regrant" possibility, however, also might be attempted for heritage conservation but so far, as I will mention briefly at the conclusion of my paper, it has been primarily used for other purposes. Before moving on to what I have just termed as possibilities, though, it is first useful to summarize four of the major impediments that prevented a transfer of plot ratio in the Lee Theatre case, and in others similar to it, such as the Wanchai Methodist Church demolition by New World Development in 1993. First, the Lee family's holdings were separated by roads, which throws an additional wrinkle into a TDR possibility because if "non in-situ sites" are separated by a public road, current planning regulations do not permit the creation of a CDA. (Nor does Hong Kong permit developers to purchase roads.) Secondly, if the Lee family had been allowed to amalgamate its plot ratio in one CDA, then there was probably a concern for the infrastructural implications on that newly-constituted parcel, related to electricity, parking and other transportation issues.

[10] The third impediment to TDR was probably arithmetic in nature. If several transfers of non-contiguous plot ratios were reconstituted, then someone would have to keep track of those transfers, not just initially but also for future cases where subsequent developers might question the arithmetic of the initial transfer. Planners have told me that there is a reluctance to further complicate the already confusing, calculation-riddled system associated with plot ratios.

[11] The fourth impediment was probably purely bureaucratic, in the sense that the new plot ratio total would be so high as to be not in conformity with the overall planning strategy of the Building and Lands Departments. If the Lees' could do it, naysayers might argue, then why not others? Proponents of reform might

counter, why not, indeed? If the Lee Theatre is a sad example of a lost opportunity for TDRs, and consequently a lost historic resource for Hong Kong, then the final cases I will highlight are more encouraging because they demonstrate three recent cases where contiguous sites were able to be considered as one entity, hence permitting more flexibility concerning the site's historic resources.

CASE #3: PUN UK: CONTIGUOUS SITES = TRANSFER IN THE NEW TERRITORIES

The first of these cases is Pun Uk, near Yuen Long New Town and the village of Au Tau in the New Territories, situated at a key junction between fertile agricultural lands to the west and a principal entrance to the Kam Tin Valley to the east. In the early 1930s, the Pun family of the Hakka clan, who had amassed some wealth as traders in Southeast Asia, decided to return to China and build a family mansion.

[12] However, concerns about Chinese political instability thwarted their plans and instead they remained in Hong Kong and in 1932 erected their 6,500 square foot homestead in Au Tau, arranging 16 rooms around six small courtyards in a "two-hall, two-flank" fashion, and following traditional fung shui siting practices, with a wooded fung shui mound behind the residence and a drying area and semi-circular pond in front.

[13] The place became known in Cantonese as either Pun Uk or Sz Tsz Uk (the Pun house) and in English as "the Lion House" (because of wood carvings of lions over the main doorway). Other distinctive architectural features include carved wooden screens, ornamental plaster and brickwork, unusual door and window hardware, sculpted stone details and several frescoes that attest to the both traditional and cosmopolitan outlook of the Pun family. In the early 1960s, the Pun family abandoned the site after the colonial Government, ignoring fung shui or other historical considerations, erected Pok Oi Hospital on the adjoining hillside, thereby bringing (residents believed) "shaat hei" (death

spirits), illness and ruin to the site without anyone having physically touched it. In the early-1980s, Hong Kong's Governor Edward Youde took a personal interest in the site and ordered his planners to spare it when plans were being drawn up for Yuen Long's still-ongoing urbanization.



In 1994, the Pun family sold the deteriorated site to a property development company, which at first planned to demolish the residence and erect several 21-story housing towers. However, the company's December 1994 planning application was denied, partially on the grounds that the site did not fall within the Yuen Long New Town area where a higher plot ratio was permitted. The company came back to the Town Planning Board with a proposal for 14-story towers (also suggesting the demolition of Pun Uk) but this, too, was rejected. During 1995, as the company contemplated its next steps, several preservationists who advocated for the building's survival began mediating between the developer, the District Planning Office and Urban Design Unit of the Planning Department, the Pun family, Pok Oi Hospital, and the Transport Department (which intervened because of related infrastructural issues). "The project . . . caught the attention of the general public, there was genuine concern about the future of Pun Uk and an aspiration for some form of compromise [emerged] between the developer and the relevant authorities."

[14] Those advocating for conservation helped strike that compromise by convincing the Town Planning Board to permit the developer to build 95 housing units in three, 12 to 15-story towers on the adjoining parcel in exchange for retaining Pun Uk and mitigating against damage to the historic property. Although the company's fourth submission of its planning application was approved, construction has not yet begun and preservation plans for the historic residence are currently under discussion.

The mediation in the Pun Uk case was successful not only because of the devoted work of several professionals from different constituencies, but also because (a) the two pieces of property in question (the residence and the site for mid-rise development adjoining it) were contiguous, (b) they were located in the New Territories and could be considered as one "development permission area" [DPA] or as portions of one "outline zoning plan", and (c) the question of redevelopment had been successfully brought to public attention.

**CASE #4: LONDON MISSION BUILDING:
CONTIGUOUS SITES = TRANSFER IN
AN URBAN AREA**

Another case where two contiguous sites were considered in tandem, in this case for the well-being of two historic properties, was associated with a 1994 project in Hong Kong's Mid-Levels, the former Nethersole Hospital site redevelopment. [15] Here a developer proposed constructing two, 30-story residential blocks adjacent to two historic sites: Hop Yat Church and the former London Mission Building.

[16] The first proposal, in June 1994, argued that some plot ratio was being surrendered so that a road could be widened, more open space could be created in front of the church and "over-development" of the site could be prevented. However, this proposal also suggested demolishing the London Mission Building so that a road could be



widened and a new Club House could be erected. When this proposal was rejected by the Town Planning Board, the developer returned three months later with a counter-proposal, still calling for the demolition of the London Mission but agreeing to "adopt some of key features and motifs of the building for incorporation into the [new] design."

[17] This too, was rejected and the final approved scheme, two months later, called for the renovation of the London Mission structure,

which "not only saves a historical building from demolition, but also allows the retention of more trees."

[18] This project, like Pun Uk, has not yet come to fruition but it demonstrates how the juxtaposition of land parcels coming under review by planning agencies sometimes allows preservation advocates to negotiate for the rehabilitation of historic sites while also permitting adjacent development. One question is: how often does this occur in Hong Kong? The answer is: not often enough, but another case demonstrating how adjacent parcels can survive in a symbiotic manner suggests that positive steps are slowly being taken.

**CASE #5: CHEUNG KONG CENTRE: WHERE
THERE'S A WILL, THERE'S A WAY**

The final case I consider here is the Cheung Kong Centre, near to completion in Central, on the site of the former Hilton Hotel (1963). One of Hong Kong's major developers, Hutchison Whampoa, with behind-the-scenes orchestrating by Li Ka-shing, one of Hong Kong's most famous entrepreneurs, decided in January 1994 to purchase the Hilton site, and to try to convince the Government to sell two pieces of adjacent public property (Beaconsfield House and a carpark) for redevelopment as a 60-story office tower. Some argued that Li had struck a "sweet-heart deal" because the public land was not put up for bid, but whatever the dynamics of the sale, the project worked its way through a series of Government approvals.

[19] The choice sites on which this new tower is being built were considered "the jewels of Central" but two other historic "jewels", both Grade I buildings, were also affected by the project: St. John's Cathedral (1849-72) and the former French Missions Building (1874-1915, now Hong Kong's Court of Final Appeal).

[20] During 1995, as the Hilton and Beaconsfield sites were being cleared, the developer negotiated with several planning-related entities in the Government about land cost, plot ratio, car parks, open space and other amenities. By September 1995, the develop-

ment plan was announced, which likewise had repercussions not only for St. John's and the Court of Final Appeal, but also possibly for future use of TDRs in Hong Kong.

[21] The Town Planning Board agreed to grant Li a higher plot ratio for the Cheung Kong Centre in exchange for providing a public park at ground level and for paying maintenance costs for St. John's and the Court of Final Appeal, which was to be moved into the former French Missions Building after its rehabilitation. Furthermore, the concentration of plot ratio within a high-rise tower would provide "views of St. John's and the former French Missions Building from Queen's Road Central. . . [They] are currently tucked away in a corner, not visible from the road."

[22] The granting of additional plot ratio in Hong Kong for the provision of more public amenities is not unusual in itself; planning regulations permit such a surplus and in at least two other major cases the Government granted additional plot ratio in exchange for the creation of public open space.

[23] What was unusual in the Cheung Kong Centre case was how plot ratio was exchanged for both provisions of maintenance and opening up of views for historic buildings. It just might be that Li's "will" to erect a tall tower might ironically help lead to another "way" for heritage enhancement through TDRs in Hong Kong, especially if this precedent is considered in conjunction with the London Mission project and Pun Uk.

CONCLUSION

In all three of these cases - all of them occurring only within the past five years - we are seeing how creatively the transfer of plot ratio can be handled in Hong Kong, IF the sites are contiguous and IF government planners or other players in the development dramas are successful in negotiating for the well-being of the historic site. The first case I explained, the now-defunct Letter B, offers another possibility for action, if resurrected as a relevant precedent in another guise. The second case, Lee

Theatre, is an unfortunate loss but its important lesson - that non in-situ TDR was not possible - presents an opening in the door toward future opportunity because it shows where one of the major weaknesses of the present system lies. Other openings might be:

- (1) If the "surrender and regrant" option could be thought about more creatively so that new kinds of "special districts" could be created - something akin to the "special conditions" that gives more plot ratio for public open space, and using the existing mechanism of "development permission areas" [DPA] or "comprehensive development areas" [CDA] - then possibly plot ratio could be transferred WITHIN that area but not necessarily from one contiguous site to another.
- (2) If Government decisionmakers were more daring about experimenting with these and other planning mechanisms on other potential sites, then they might find new kinds of dynamic urban design possibilities for Hong Kong's ever-changing cityscape.

Precedents certainly exist for TDRs, both in Hong Kong and elsewhere. Creative planners also certainly exist in Hong Kong, and they are well-experienced in negotiating (and often collaborating) with developers. The past five years have provided some fascinating possibilities for future action. What's needed now is the will to take bolder, more creative steps so that more historic sites are not casually sacrificed simply for more boxes in the sky.

NOTES

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- [1] Jeffrey W. Cody and James R. Richardson, "Urbanizing Forest and Village Trees in Hong Kong's Sha Tin Valley, 1976-1997," *Traditional Dwellings and Settlements Review* 9, no. 1 (Fall 1997): 26.
- [2] Roger Bristow, *Land-use Planning in Hong Kong: history, policies and procedures* (Hong Kong: Oxford University Press, 1984), 87-8. The Letter B system was phased out after the 1984 Joint Declaration between Britain and China, although the Letters could be redeemed until 1 July 1997. For further information, see R.D. Pope, "A History of Letter A/B and Land Exchange Policy," *Hong Kong Surveyor* 1, no. 1 (May 1985): 7-9; and Lawrence Wai-chung Lai, *Zoning and Property Rights: a Hong Kong Case Study* (Hong Kong: Hong Kong University Press, 1996), 47.
- [3] Li Ling-hin, *Development Appraisal of Land in Hong Kong* (Hong Kong: Chinese University Press, 1997), 171.
- [4] "Time to Take Stock of the NT", *South China Morning Post*, 13 January 1980.
- [5] John J. Costonis, *Space Adrift: landmark preservation and the marketplace* (Urbana, Chicago and London: University of Illinois Press, 1974), 28-64; and Michael Kwartler, "Historic Preservation in High Density, High Value Environments: the Case of NY City", paper presented at the international conference "Heritage and Education", Antiquities & Monuments Office, Hong Kong, 17-18 December 1997.
- [6] For a compelling argument of "Special District Areas" in Hong Kong, see David Lung and Ann Friedman, "Heritage Conservation and Conflict-ing Community Interests: heritage held hostage in the New Territories and beyond," in Peter Hills and Cecilia Chan, eds., *Community Mobilization and the Environment in Hong Kong* (Hong Kong: University of Hong Kong Centre of Urban Planning and Environmental Management, 1997), 215-232.
- [7] Internal files, Antiquities & Monuments Office, Hong Kong.
- [8] Peggy Sito, "Rescue a Rare Triumph for Heritage Buffs," *South China Morning Post*, 20 November 1996, Property, 3. As stated in *Building Journal: Hong Kong, China* (February 1995): 84, "Causeway Bay represents the bulk of the company's 278,700 sq. meter portfolio in Hong Kong [and] the Lee Theatre Plaza will add 111,480 sq. meters to [that portfolio]."
- [9] Comprehensive development areas are zoning designations in areas of Hong Kong NOT located in the New Territories; they were first constituted in 1970. See Lawrence Wai-chung Lai, *Zoning and Property Rights in Hong Kong*, 42, 101.
- [10] As one planner explained this fear to me, "If either the Buildings Department or the Lands Department allows an owner to concentrate his plot ratio on one site, then the infrastructural framework could be upset."
- [11] To get some sense of these complications, see the regulations governing plot ratios in the Hong Kong Government's Building (Planning Regulations, CAP. 123, Part III, sections 21-23. For a helpful synopsis of plot ratio calculation, see Wong Kin Chee, "Valuation of Development Land," in Thomas N.T. Poon and Edwin H.W. Chan, eds., *Real Estate Development in Hong Kong* (Hong Kong: Pace Publishing Ltd., 1998), 82-6.
- [12] In the late 19th and early 20th centuries, many Chinese migrant entrepreneurs returned to southern China from Southeast Asia. See Rupert Hodder, *Merchant Princes of the East: cultural delusions, economic success and the overseas Chinese in Southeast Asia* (NY: John Wiley, 1996).

- [13] For a better sense of the cosmological dynamics involved in such construction, see Patrick H. Hase and Lee Man-Yip, "Sheung Wo Hang Village, Hong Kong: a village shaped by fengshui," in Ronald G. Knapp, ed., *Chinese Landscapes: the village as place* (Honolulu: University of Hawaii Press, 1992), 79-94.
- [14] Quotation from 28 June 1996, Planning Application for a Comprehensive Residential Development within "Undetermined" Zone at Au Tau, Yuen Long (Third Submission), paragraph 2.7. The earlier submissions were 30 December 1994 and 29 May 1995.
- [15] The site is at 78/80 Robinson Road, between Robinson and Bonham Roads, adjacent to Ying Wa Girls' School.
- [16] Hop Yat Church is a Grade II Historic Property ("a building of 'special' merit' which merited 'efforts [that] should be made to selectively preserve' it, according to judgment criteria under Hong Kong's Antiquities & Monuments Ordinance). The London Mission Building (1893) is a Grade III historic building ("a building of 'some' merit, but not yet qualified for consideration as a possible monument", by the same criteria). In the Section 16 Application Explanatory Statements, in June, September and November 1994, the developer was Crown Time Properties and the main author of the Statements was Llewelyn-Davies HK Ltd.
- [17] Section 16 Application Explanatory Statement, September 1994, 12.
- [18] Section 16 Application Explanatory Statement, November 1994, 14.
- [19] Joshua Fellman, "Unlikely project closer with Hilton approval," *Hong Kong Standard*, 18 September 1995; and *Ta Kung Pao*, 30 May 1996.
- [20] Karen Chan, "Cheung Kong gets go-ahead," *Hong Kong Standard*, 28 April 1995, F-2.
- [21] See, e.g., Joshua Fellman, "Development plan for Hilton site passed," *Hong Kong Standard*, 16 September 1995.
- [22] *Ibid.*
- [23] The "special circumstances" are explained in general terms in a Practice Note of the Buildings Ordinance Office, first issued in February 1986: B(P)R 23 (2) (a) "Streets in relation to Site Area". The two cases were the ground level plaza of the Hong Kong-Shanghai Bank Building and the Grand Central Plaza. See Martin Pawley, "Foster Philosophy," *Architectural Review* (April 1986): 80; and "Grand Central: cathedral of commerce," *Building Journal: Hong Kong, China* (July 1993): 61.

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Planning Affects Housing Price: Myth And Reality?

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ABSTRACT

Despite the recent global recession and increasing unemployment, the Hong Kong Government as well as the general public are still very concerned with the provision of adequate housing at affordable price in the Territory. Many overseas studies have suggested that there exists a relationship between the land use planning system, land supply and housing price. However, little has been done on the effect of land use planning on Hong Kong's housing market. This research investigates the relationship between the land use planning system, land supply and housing prices in Hong Kong. We attempt to address how the "land use planning system and constraints" influence land supply in general and the residential property market in particular. The article is divided into 5 sections. The first section briefly introduces the planning system in Hong Kong. The second section highlights some of the relevant literature, followed by the methodology. The findings are presented in the fourth section. The final section gives a concluding remark.

"market failure". In Hong Kong, the Town Planning Board (TPB) is the government body established under the Town Planning Ordinance (Chapter 131) to prepare, with the assistance of the Planning Department, statutory plans covering different areas of Hong Kong. The plans are called Outline Zoning Plans and Development Permission Area Plans that may regulate the use and development intensity of different land by zoning. Zones where residential use is always permitted with no need for planning approval include "Residential (Group A)", "Residential (Group B)", "Residential (Group C)", "Residential (Group D)" and "Commercial/Residential (C/R)". If an area is zoned for a non-residential use e.g. "Green Belt (GB)", "Open Space (O)", planning application is required should the land be used for residential development. According to section 16 of the Town Planning Ordinance, planning application is required to be submitted to the TPB, which will then decide whether to reject or approve the applied development with/without conditions. In other words, this approval system affects the supply of housing developments that require planning application. As land is so scarce in Hong Kong, the appropriate use of land to meet different land use demand becomes an important issue.

THE PLANNING SYSTEM IN HONG KONG

The Government uses its land use planning system to regulate or impose constraints on land supply and development - to address the problems arising from

The planning system in Hong Kong has been subjected to most criticisms, however. For instance, developers have complained that "land approval procedures were slow, bureaucratic and inherently

anti-development” (S.C.M.P, 6 June 1997). Lai (1997) pointed out that the reasons put forward by the Town Planning Board in rejecting planning applications are often so vague and general there is no assured method by which an applicant can revise the original submission in order to get through the approval process in a new application or review. This agrees with Staley (1994) that the planning application process increased uncertainty in the development process, since public administrators had discretion over determining the types, pace and pattern of development on district level.

Moreover, the Government itself is dissatisfied with the fluctuating property market in the past with property values either rising too rapidly or falling drastically, which led to many undesirable social problems (Ho, 2001). Given the de facto long-term constraints on land supply, the Government recognizes the need to increase supply to provide affordable housing for households. The Housing Branch (1997) has also acknowledged that the “smaller the gap between the supply and demand for private housing, the lower the pressure on domestic property prices”. The paramount question for the Government is to resolve the dilemma between (1) the policy of providing adequate and affordable housing against the shortage of housing supply and (2) the land use regulations for control on residential development. This boils down to the “planning and housing price” issue. Rather surprisingly, there appears to be limited research done on this important topic in Hong Kong, representing notably “a gap of knowledge”. This study thus attempts to investigate such relationships with a view to shed light on future policy direction.

LITERATURE REVIEW: PLANNING AND HOUSING PRICE (IN BRIEF)

This section forms the solid theoretical foundation for a well-defined methodology that follows in Section 3. Land use planning is regarded as a mechanism for the Government to exercise its

control on the urban development process. There are theories, which advocate that land use regulations (such as zoning and growth controls) may affect the property market by constraining supply and increasing demand. Many overseas studies suggest that housing price is affected by demographic, economic and market demand and supply factors while land use regulation has significant impact on housing market by affecting location, density and use of land supply (see Sternlieb, 1973; Seidel, 1978; Elliott, 1981; Buttler, 1981; Dowall and Landis, 1982; Gerald, 1992; Bramley, 1993 & 1998; Hannah et al, 1993; Mayo and Sheppard, 1996; Monk & Whitehead, 1996; Mayer and Somerville, 1999). It is reasonable to expect that planning has a bearing on land supply and the housing market in Hong Kong in a similar fashion. The following summarizes the major planning factors at work from the previous relevant literature:-

- Rate and form of development (Factor 1);
- Number of housing units permitted to be built within an area (Factor 2);
- Amount of land zoned for residential use (Factor 3);
- Amount of land permitted for residential use (Factor 4); and
- Government’s tendency to allocate more or less land for residential use (Factor 5).

These 5 factors are by no means exhaustive. Yet they can represent the key planning variables that we use for analysis in the next section.

METHOD OF ANALYSIS

We use multiple regression to analyze the planning-housing price relationship in question. However, the actual question is not as simple as we might have thought. Therefore we intend to include a sensible number of variables that explains the relationship. The model is as follows:

$$HP = \gamma + \alpha_2 I + \alpha_3 GDP + \alpha_4 POP + \alpha_5 UE + \alpha_6 ASP + \beta_1 UFA + \beta_2 LS_{t-3} + \beta_3 GB_{t-3} + \beta_4 AR_{t-3} + \beta_5 RZ_{t-3} + \beta_6 GA_{t-3} \dots \dots \dots (1)$$

- Where HP = housing price
 I = household income
 GDP = gross domestic product
 POP = population
 UE = unemployment rate
 ASP = agreement for residential sale and purchase
 UFA = new residential usable floor area completed
 LS = new land supply includes auctions, tenders, private treaty grants, letter A/B
 GB = area of greenbelt and open space zoning
 AR = approval rate of planning applications
 RZ = area of residential zoning, etc.
 GA = approved gross floor area from planning applications

In the estimation equation, the planning, land supply and housing demand and supply factors are adopted as the independent variables; and housing price is the dependent variable. Among them, the planning factors are, of course, the focal point of this paper. And the five factors discussed in the previous section can be seen as being represented, directly or indirectly, by a host of relevant variables in the equation - in which GB, AR, RZ and GA relate to planning. These four variables, in particular, are indicators of planning constraints (see below). Due to the paucity of data, the analysis period is confined to 1988 - 2000. Each of the variables is briefly discussed below in turn, with the data sources duly stated.

DEPENDENT VARIABLES

Housing Price. It is the average housing price derived from the data in the Hong Kong Property Review published by the Rating & Valuation Department of the Government. The data are composed of the average housing prices of five classes of housing in four regions. The five classes (A, B, C, D, E) have a saleable area of not exceeding

39.9 m², 40 m² - 69.9 m², 70 m² - 99.9 m², 100 m² - 159.9 m² and area of at least 160 m² respectively. The four regions include Hong Kong Island, Kowloon, New Kowloon and New Territories. As the average housing price includes all classes across the whole territory, it is a proxy of the aggregate housing price level (Figure 1).



Fig. 1

INDEPENDENT VARIABLES

(A) INDICATORS OF ECONOMIC FACTORS

Household Income. It is the quarterly median household income obtained from the Quarterly Report on General Household Survey issued by the Census and Statistics Department of the Government.

Gross Domestic Product. It is one of the most representative economic indicators of Hong Kong. The data were from the Hong Kong Monthly Digest of Statistics, issued by the Census and Statistics Department.

(B) INDICATORS OF DEMOGRAPHIC FACTORS

Population. The population statistics were collected from the Hong Kong Annual Digest of Statistics issued by the Census and Statistics Department.

Unemployment Rate. The unemployment rate figures were obtained from the Hong Kong Annual Digest of Statistics, issued by the Census and Statistics Department.

(C) INDICATOR OF MARKET FACTORS

Agreements for Residential Sale and Purchase. It is the number of Agreements for Sale and Purchase of

residential properties that are registered with the Land Registry of the Government. The transactions may also include short-term resales of housing for anticipation of capital gain, which are generally labeled as speculations. Thus, the transaction volume comprises both the occupier and investor, and speculator demands for housing.

(D) INDICATORS OF LAND AND HOUSING SUPPLY

New Residential Usable Floor Area. It is the usable floor area of newly completed residential buildings. The figures include buildings of the Hong Kong Housing Society, Private Sector Participation Scheme of the Hong Kong Housing Authority and private buildings. The data were collected from the Annual Digest of Statistics, issued by the Census and Statistics Department.

New Government Supply of Residential Land. It is the area of new government land sold by means of public auction, public tender, private treaty grants, letter A/B tender in both Urban Areas and the New Territories. Land uses include pure residential use and composite residential and commercial uses. The data were collected from the Annual Digest of Statistics, issued by the Census and Statistics Department.

(E) INDICATORS OF PLANNING CONSTRAINTS

Area of Residential Zones and Green Belt/Open Space Zones. They are the total areas of land zoned for these uses (see Figure 2). The data were collected from the Outline Zoning Plans and Development Permission Area Plans issued in different periods. The area of residential zones that we have studied includes “Residential Group (A)”, “Residential Group (B)”, “Residential Group (C)”, “Residential Group (D)”, “Residential Group (E)”, “Commercial/Residential” and “Comprehensive Development Area” zone uses. These zone uses have direct bearing on the housing supply. On the other hand, the areas of “Green Belt” and “Open Space” zones are considered to reflect the planning constraints within the planning system in which growth in residential development is controlled.

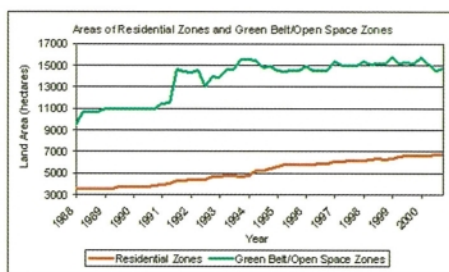


Fig. 2

Approved Residential Gross Floor Area from Planning Applications. It is the total residential gross floor area stated in the planning applications that was approved by the TPB (Figure 3).

APPROVED APPLICATIONS	NON APPROVAL CASES	NUMBER OF APPLICATIONS	% OF APPROVAL CASES	% OF DISAPPROVAL CASES	APPROVED GROSS FLOOR AREA
4	5	9	0.44	0.56	253216
3	6	9	0.33	0.67	394915
9	6	15	0.6	0.4	223887
6	4	10	0.6	0.4	271440
2	4	6	0.33	0.67	124979
5	4	9	0.56	0.44	271460
3	6	9	0.33	0.67	62472
6	5	11	0.55	0.45	302362
2	7	9	0.22	0.78	153579
7	10	17	0.41	0.59	119602
6	7	13	0.46	0.54	117613
4	4	8	0.5	0.5	250360
8	17	25	0.32	0.68	583783
10	15	25	0.4	0.6	621442
7	27	34	0.21	0.79	404865
15	29	44	0.34	0.66	205670

Fig. 3

Approved Rate of Residential Planning Applications.

It is the percentage of approved planning applications for residential use over the total number of planning applications for the same (Figure 4).

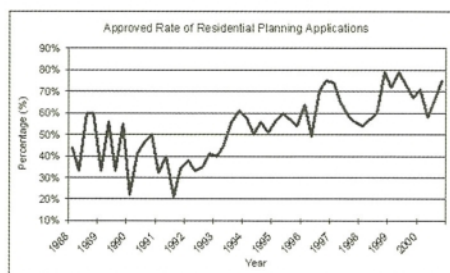


Fig. 4

THE FINDINGS

The findings indicate that there exists a significant relationship between housing price and independent variables, with the adjusted R^2 being 0.954 (the value of 1.0 means the data perfectly explain the situation). Table 1 shows a summary of the directions of relationships from the regression equation in the last section. We will also highlight some of the specific findings.

Independent Variables	Relationship with Housing Price
Household Income	+
Gross Domestic Product	+
Population	+
Unemployment Rate	-
Agreements for Residential Sale and Purchase	+
New Residential Usable Floor Area	-
New Government Supply of Residential Land	-
Area of Residential Zones	-
Area of Green Belt/Open Space Zones	+
Approved Residential Gross Floor Area from Planning Applications	-
Approval Rates of Residential Planning Applications	-

Table 1

Household Income. Our findings are consistent with other scholars that the household income has a positive relationship with the housing price. When the income level increases, the housing demand also increases and pushes the housing price to rise.

Gross Domestic Product. The regression analysis shows a positive relationship between GDP and housing price. That means an increase in GDP would induce the people to demand for more housing and thus housing price increases.

Population. In our analysis, a positive relationship is found between the population and the housing price. Thus, our finding here is consistent with other scholars'. The growth of population creates the physical need for more housing and forms the support for the housing price level, particularly when the growth stems from the affordable group with home buying needs.

Unemployment Rate. A negative relationship is found between this variable and the housing price in our study. That means the higher the unemployment rate, the lesser the population's affordability to consume housing. The increase in unemployment rate leads to a decrease in housing demand and housing price.

Agreements for Residential Sale and Purchase. Our findings show that the number of agreements for residential sale and purchase has a positive relationship with housing price. This is consistent with a previous study by Tse, Ho and Ganesan (1999) who applied the Granger causality tests on the annual residential property prices of 1975 - 1995. Their findings suggest that the transaction volume is "Granger causing" the housing price rise of Hong Kong.

New Residential Usable Floor Area. This variable is found to have a negative relationship with the housing price. As this variable is an indicator of the new housing supply, the negative relationship reinforces that the change of housing price would be affected by the amount of housing supply.

New Government Supply of Residential Land. In our study, it is interesting to find that the amount of land supply has a negative relationship with the housing price subject to a 3-year time lag effect. This implies increases in land supply may affect the housing price 3 years later.

Area of Residential Zones and Green Belt/Open Space Zones. A negative relationship between the area of residential zones and housing price is found in our study. That means an increase in the area of residential zoning will increase the area of developable land for housing, which leads to a decrease in housing price. However, this effect is found to have a 3-year time lag that the area of residential zoning will affect the housing price 3 years later.

On the other hand, the areas of green belt/open space zones are found to have a positive relationship with housing price but subject to a 3-year time lag. This may imply that green belt and open space zones do restrict the residential development 3 years afterwards. In that case, an increase in these



two zones will reduce the area of land for housing development, thus substantiating the housing price rise after 3 years.

Approved Residential Gross Floor Area from Planning Applications. Our findings show that a negative relationship exists between the approved residential gross floor area and housing price and the effect also has a 3-year time lag. That means the more the approved residential gross floor area, the more the potential gross floor area of housing could be provided 3 years later, so a less rapid housing price rise as well.

Approved Rate of Residential Planning Applications. In our study, a negative relationship is found to have existed between the approval rate and the housing price but subject to a 3-year time lag. That means the higher the percentage, the more gross floor area of housing may be provided 3 years later. This enables the housing supply to respond faster in case of housing price rise at that time, thus facilitating a relatively more gentle price change 3 years afterwards.

CONCLUSIONS

This paper has attempted to investigate the relationship between the planning system, land and housing supply and demand in Hong Kong, and demonstrates statistically that there exists a clear relationship between them. The regression analysis

shows that the planning factors, together with the land and housing factors, have a strong explanation for the housing price in Hong Kong. Also, individual variables have been studied, with an emphasis on planning factors at work. To achieve the goal of adequate and affordable housing, the Government can from time to time adjust its planning control. This can be done by many ways, particularly increasing the area of land zoned for residential use, the total gross floor area permitted for residential use and relaxing the planning restrictions of applications for residential use.

It is a fact that planning policies do not usually have an immediate effect on housing supply as it takes time to complete a development. Nor does zoning. The existing use of building or land is permitted to continue until redevelopment or a change of use takes place. In view of such shortcoming, the Government could consider providing more incentives in order to make way for provision of more housing, if needed. For example, in 1998 the Government has “upzoned” some industrial locations from “Industrial” to “Residential (Group E)” to encourage more residential developments.

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REFERENCES

- Bramley, G. (1993). The Impact of Land Use Planning and Tax Subsidies on the Supply and Price of Housing in Britain. *Urban Studies*, 30, pp. 5-30.
- Buttler, H.J. (1981). Equilibrium of a Residential City, Attributes of Housing, and Land-Use Zoning. *Urban Studies*, 18, pp. 23-39.
- Census and Statistics Department (2000). *Hong Kong Monthly Digest of Statistics*. Hong Kong: Government Printer.
- Census and Statistics Department (2000). *Hong Kong Annual Digest of Statistics*. Hong Kong: Government Printer.
- Dowall, D. and Landis, J. D. (1982). Land Use Controls and Housing costs: An Examination of San Francisco Bay Area Communities. *AREUEA Journal*, 10, pp. 67-93.
- Elliott, M. (1981). The Impact of Growth Control Regulations on Housing Prices in California. *AREUEA Journal*, 9, pp. 115-33.
- Gerald, E. (1992). *The Relationship between House Prices and Land Supply*. London: Department of the Environment Planning Research Programme, HMSO.
- Hannah, L., Kim, K.H., and Mills, E.S. (1993). Land Use Controls and Housing Prices in Korea. *Urban Studies*, 30, pp. 147-156.
- Mayer, C. J. and Somerville, C. T. (1999). Land Use Regulation and New Construction. *Regional Science and Urban Economics*, 30, pp. 639-662.
- Mayo, S. and Sheppard, S. (1996). Housing Supply under Rapid Economic Growth and Varying Regulatory Stringency: An International Comparison. *Journal of Housing Economics*, 5, pp. 274-89.
- Monk, S. and Whitehead, C.M.E. (1996). Land Supply and Housing: A Case study. *Housing Studies*, 11(3), pp. 407-423.
- Rating and Valuation Department, Property Review, Hong Kong Government Printer.
- Sagalyn, L.B. and Sternlieb, G. (1973). *Zoning and Housing Costs*. New Brunswick, New Jersey: Rutgers Center for Urban Policy Research.
- Seidel, S. (1978). *Housing Costs and Governmental Regulations*. New Brunswick: New Jersey: Center for Urban Policy Research, Rutgers University.
- Tse, R.Y.C., Ho, C.W. and Ganesan, S. (1999). Matching Housing Supply and Demand: an Empirical Study of Hong Kong's Market. *Construction Management and Economics*, 17, pp. 625-633.



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BOUNDARY LAND IN HONG KONG

Land Boundary in Hong Kong

Ronald Chan, FHKIS, FRICS

INTRODUCTION

Land is the scarcest resource in Hong Kong. However, we can still utilize a piece of land in Hong Kong more efficiently by building high rise buildings, railways, highways, power transmission lines and other utilities as well as underground cities and tunnels for roads, railways, power, water, gas, sewer and other utilities. The boundary of a land parcel, which delimits its existing physical extent, cannot be created, changed, wrongly determined nor described. Incorrect boundary records not only cause a lot of inconvenience and damages but also wars between countries and litigation between landowners. Consequently, unambiguous definition of Land Boundary is highly emphasized by most developed countries as an essential tool for sound land administration. According to the conditions of sale/grant of a piece of Government land, the purchaser or the grantee shall not commence any construction until the boundary of the piece of land is set out by the Government. This paper introduces the boundary concept, description and definition. The Hong Kong Legal System and the Hong Kong Registration System are also touched before mentioning the land boundary survey in Hong Kong, which cannot stand alone without legal support. The paper ends with the characteristics of the Hong

Kong Land Boundary and ways to improve the land boundary records and related matters.

LEGAL SYSTEM

The present Hong Kong legal system follows more or less the British one and the sources of which are case laws, statute laws and the local customs. As it has developed for more than a hundred and fifty years, there has been abundance of collections of judges' decisions treated as case law for the reference of legal professionals. However, there are only dozens of such cases concerning land boundaries. Numerous ordinances dealing directly or indirectly with land have been enacted or repealed from time to time. There had been no ordinance dealing with land survey or land boundary survey until 1995. The present Hong Kong Land Survey Ordinance, when compared to those of developed countries and China as briefly described in the next paragraph, covers far less in extent and depth.

SURVEYING AND MAPPING LAW OF THE PEOPLE'S REPUBLIC OF CHINA

The Surveying and Mapping Law of the People's Republic of China, which was adopted at the 29th

meeting of the Standing Committee of the Seventh National People's Congress on December 28, 1992, was promulgated by order no. 66 of the President of the People's Republic of China and effective on July 1, 1993. Contents of the law include the following eight chapters:-

Chapter I	General Provisions
Chapter II	Surveying and Mapping Datums and Systems
Chapter III	Surveying & Mapping Plans and their Implementation
Chapter IV	Boundary Surveying and Mapping
Chapter V	Management of Surveying and Mapping Results
Chapter VI	Protection of Surveying Markers
Chapter VII	Legal Responsibility
Chapter VIII	Supplementary Provisions

Hence, the law deals a lot on land boundary survey. In fact, the Bureau of Construction and the Surveying and Mapping Bureau have just announced the regulations for the surveying of real properties, which have been in force on May 1, 2001.

REGISTRATION

The long established deed registration in Hong Kong has been proud of its efficiency and reliability. However, it is so different from those of developed countries or even Shenzhen where land boundaries are well defined and protected by law while land boundary survey can only be carried out by licensed surveyors. The weakness of the system is that copies of private conveyances (assignments) are recorded in the Land Registry (Land Office in the past) without examination on survey data. Only deeds registered are valid and the date of their registration gives priority of one deed over another. Deeds not registered are null and void and cannot be enforced. The present Hong Kong registration system does not guarantee title, boundary nor area as stated in the registered instruments. There is no provision in the registration ordinance that an instrument registered must be accompanied by an accurate drawing. Even for the title registration, which was proposed long ago with the amended bill to be tabled soon in the Legislative Council, maps

and drawings attached to any registered instrument serve no purpose besides identification. The old Land Office carried out a lot of duties besides registration of all instruments affecting land. Such duties included the issue, renewal, variation and termination of Government (Crown) leases; the drafting, completion and registration of conditions of sale, grant and exchange of Government (Crown) land; the granting of mining leases; the registration of owners' corporations; the appointment of Government (Crown) rents and premia; the recovery of outstanding Government (Crown) rents and the enforcement of lease conditions etc. The current Land Registry carries solely the registration of instruments affecting land.

Besides the dimensions and areas shown on the lease plans and other land boundary plans produced by the Government, dimensions and areas shown on assignment plans registered in the land registry are of very limited value and there have been cases where the total dimensions and areas of sections and sub-sections exceed the dimensions and areas of the original lot or do not tally with them. Inconsistency of areas and dimensions between successive transactions are not uncommon. Furthermore, the areas and dimensions as shown on the assignment plans may differ considerably with actual ones on ground.

LEASEHOLD

Leasehold estate is perhaps the only and the most common estate in land in Hong Kong. The lease term varies from a few decades to 999 years. Under the leasehold, the Government is the sole owner of lands in Hong Kong. The lease conditions of a land parcel are unique and may not be the same as the conditions of another land parcel. Lease conditions of a lot can be regarded as the contract between the Government (lessor) and the landowner (lessee). When no Government (Crown) Lease has been issued, all transactions are registered against the conditions of Sale or Grant. A register is opened for each lot when a Government (Crown) Lease is granted, and all transactions relating to that lot are entered therein.

LAND BOUNDARY

Land boundary as defined in dictionaries is the line which marks the outer edge of a piece of land and, which separates it from the land adjoining it. The boundary actually limits the ownership, possession, use and control of land. A boundary is not a line but a plane, which goes down to the centre of the earth and goes up the space without end. A boundary can either be general or specific. The former as defined by Professor Peter Dale is one in which the precise line has not been determined. A specific boundary or a fixed boundary is thus a boundary, the precise line of which has been determined. Specific boundaries are used exclusively in USA, Canada, Australia, New Zealand and most developed countries. The two types of boundaries co-exist in Hong Kong. It is quite safe to say that the boundaries of lots granted after the Second World War in Hong Kong are specific boundaries.

DESCRIPTION OF A LAND PARCEL

The basic unit of a land parcel leased by the Government is called a lot. There are more than a thousand designations of a lot, according mostly to district and nature, such as Marine Lot 1, Rural Building Lot 999, Shatin Town Lot 13 etc. The basic units for the first division of a lot are sections and a remaining portion. Thus a lot divided into four portions would be section A, section B, section C and remaining portion. The basic units for the division of a section are sub-sections and a remaining portion. Thus section A, after divided into four portions, will have section A subsection 1, section A subsection 2, section A subsection 3 and section A remaining portion. The rule goes on forever with the use of section and subsection alternatively. So there may be a portion of land to be surrendered to the Government with designation as ABC lot, section A, sub-section 1, section K, sub-section 2, section L, sub-section B. It is not uncommon that one finds a building in Central containing within its walls a number of sections and sub-sections of two or more different lots. The dimensions of land parcels were in yard, foot and inch before 1970 and are in metre after 1970. The unit for area was acre or square foot

before 1970 and is metre or hectare after 1970.

Description of a land parcel is always very important as the following excerpt written by E.G.D. Deville, the Surveyor General in Canada from 1885 to 1924.

.....Title to land is based upon the description contained in the deed conveying it. It is not enough that the boundaries should be accurately surveyed: the land itself must be so described in the deed as to identify it without ambiguity and beyond any possible doubt. The importance of a precise description is enhanced when the boundaries are partially or wholly unsurveyed.

Most land parcels disposed by the Government before the Second World War are with boundary descriptions. However, boundary descriptions are very rarely used after the War because most land boundaries are specific and accurately fixed in terms of grid co-ordinates. That is to say, that we can still set out the boundaries even after an earthquake with some buildings falling into pieces. It is sad to say that the descriptions of the land boundaries in Hong Kong do not provide much help for boundary identification or establishment because the Territory has developed very rapidly. Furthermore, the Government has taken no more follow up actions on the land boundary of a lot after the lease survey in the past and after the grant of a piece of land at present albeit there may be a series of redevelopment after the issue of the Government lease. A marine lot was once defined as a land parcel within 300 feet from the coastal line. However, the old coastal line of Hong Kong lies more or less the existing tramway, which may be a mile away from the present artificial coastal line. Building control was not very rigid in the past in that a new building might not be erected in the original place or might even encroach upon Government land or the adjacent land. When I worked in New Zealand I always found that the details shown on a land boundary plan, prepared more than fifty years ago, still appeared before my eyes. Such phenomenon, I am afraid, could not be found in Hong Kong. Descriptions of abutting details of an old lot in Hong Kong such as a public road, sea, path, Crown Land or

brook etc. are in fact archives and only depicted the situation at the time when the lot was granted.

SHAPE OF A LAND PARCEL

Traditionally, the shape of a land parcel in Hong Kong is very different from the shape of a land parcel in USA, Canada, Australia and New Zealand etc. Land parcels of such countries are usually rectangular in shape and of large size in acreage. However, those in Hong Kong are usually irregular in shape due to the mountainous terrain, and small in size due to land shortage and high land price. The general boundary concept in England where boundaries follow natural features like ditch, hedge, wall, drain and fence etc. may be found in the New Territories where the boundaries follow the field bunds or the river banks. Boundaries of many old lots follow more or less the contour lines for easy identification and development. Land parcels in the rural part of Hong Kong are always separated and do not touch one another as in other countries. In other words, a land parcel may be surrounded wholly or partially by Government land.

BOUNDARY FEATURES

There is little boundary features besides boundary stones in the urban area and field bunds in the rural area. Walls such as building walls, party walls, fencing walls and retaining walls etc. are important boundary features. However, they may bring a lot of confusion to an inexperienced surveyor not to mention a layman such as a wall, which may be a party wall or a wall belonging to a party only. Furthermore a wall may set back from the boundary as governed by the conditions of sale or served as a need for the planning layout or architectural design. A party wall may not be parallel in two sides and may vary in width from one end to the other end. A retaining wall may not be vertical and may adhere to a large footing buried under the ground. Some buildings in Hollywood Road built decades ago have only columns and use the walls of adjacent buildings in order to have more living space. A lot of old buildings have verandahs or balconies over Government land. Moreover, the recent high rise buildings have foundations more than a hundred feet below

the ground level and overhangs high above the ground. It is difficult, if not possible, to determine the exact positions of the physical features defining or lying along the boundary lines except those immediately above the ground. The current building structures always set back from the lot boundaries for more pedestrian walkway space. It will be very wrong if we take only physical features or occupation features as boundaries in Hong Kong.

LAND BOUNDARY SURVEY IN HONG KONG

The Government sets out the lot boundary of a new grant lot before the grantee starts construction. Another land boundary survey is then carried out after the grantee completes the construction. From then on, land boundary survey is very rarely carried out by the Government for a lot except for resumption or lease renewal when the boundaries are in doubt. Even the second land boundary survey (lease survey) is rarely carried out after 1983. The situation in the New Territories is very different. Very rough land boundary surveys was carried out around 1900 for fiscal purpose. The project surveyor already found some of the details outdated after he completed the task. So he recommended another survey to be carried out for the sake of updateness and precision. However, the Government has never carried out the survey as recommended. Thus, the land boundary survey carried out a hundred years ago is still the bible used for land transactions of those lots in the New Territories. Division survey is even worse because the Government was seldom involved until recent years. Owners of lots can divide and assign portions of a lot, provided there is no clause in the conditions of grant/sale/lease/exchange, which prohibits such sub-division. Although a description of the land is required in the Land Registration regulations, it does not specifically state that a plan is necessary. A vendor may sometimes supply a plan but the plan is never checked for completeness and accuracy. In the past any person could carry out a division survey and so the standard of division plans varied a lot. It is not uncommon that the sum of dimensions or areas of all divisions may not tally with those of the parent lot.

LAND BOUNDARY SURVEY BEFORE 1984

Land was granted by the Government subject to certain conditions like the building covenant, which should be fulfilled before a lease could be issued. The grant plan as well as the conditions of grant were deposited in the then land office and the land had been held under these conditions until the lease was issued. After a land parcel was granted for several years and the grantee had fulfilled all the grant conditions, the Government surveyed the land parcel again according to the occupation features, which was called the lease survey. The occupied area might be different in shape and area with the granted one. Premium of the lot and Government rent would be adjusted according to the occupied area. Hence, the lease and the lease plan were the end products of an original grant or sale of land. Boundary stones, big and small, were placed at all boundary corners in order that the lease plan depicted accurately and unambiguously the land parcel. The boundary stones also enabled any person to locate the boundary on ground efficiently and quickly. Dimensions and sometimes bearings of all boundaries are shown on the lease plan. Moreover, the Government might carry out subdivision surveys for section and subsection owners under certain conditions. Sometimes a section or subsection would be re-entered and a new lot at the same site would be granted with a new set of lease conditions. Of course, boundary stones would be erected. Hence, it is difficult to find an old land parcel without boundary stones in Hong Kong.

LAND BOUNDARY SURVEY AFTER 1984

The development of Hong Kong has become more intensive and extensive after the eighties. A development may be in different phases with blocks of high rise buildings. Moreover, many utility areas and formation areas that may be built for the public according to the conditions of sale will be taken back by the Government. The practice as described in the last paragraph came to a halt in the early eighties. Since then the Government has seldom issued lease plans nor carried out any lease surveys after the initial setting out of a lot after sale by the Government. Instead, according to Section 14 of the

Conveyancing and Property Ordinance, the Government lease was deemed to be issued upon the issue of the certificate of compliance.

LAND SURVEY ORDINANCE 1995

The situation has been a little bit better since 1995 when the Land Survey Ordinance was enacted. The purpose of the Ordinance is to provide for the registration and discipline of land surveyors engaged in land boundary surveys, for the control of the standards of land boundary surveys, for the establishment of land boundary records and for related matters. According to Section 30 of the Ordinance any deed, conveyance or the instrument in writing effecting a division of any land and delivered into the Land Registry for registration under the Land Registration Ordinance shall be accompanied by a land boundary plan. Hence, the Ordinance does not cover ALL land parcels but only newly created divisions. As the extent of land development in Hong Kong grow larger and larger, amalgamation for different lots/sections for a joint development is very common. However, it is very uncommon to have land divisions except those in the New Territories for the erecting of separate small houses. Thus, the Ordinance to certain extent covers very little areas.

TOWN PLANNING ORDINANCE AND TOWN PLANNING LAYOUT

The Town Planning Ordinance was enacted in the thirties and has then been amended several times. By now the Ordinance covered nearly all the land in the territory and so it has impact on all parcels of land in Hong Kong. The Town Planning Department, which was established in 1990 has evolved from a small division of the old Crown Lands and Survey Office to an important department dealing with land matters. The Planning Department and Lands Department are now the two important departments under the Planning and Lands Bureau. Any new boundary survey by now has to refer to the latest layout plans for development constraints. Boundaries of new land parcels follow the layout lines while the new boundary lines of an old lot going to be redeveloped would also follow the latest layout

plans. Land within the layout lines designated for future utility development will be resumed by the Government upon redevelopment or acquired by the Government for road works, drainage etc. under several ordinances not necessary upon redevelopment.

BUILDINGS ORDINANCE

The Buildings Ordinance was introduced not as long ago as the Registration Ordinance and other land related Ordinances. It started when the Government found the need to improve the sanitary conditions in the nineteenth century. The Ordinance has then been amended many times due to the change of building technology and materials. A competent land boundary surveyor should also be conversant with the Ordinance as well as its old versions such that he/she could easily find out the relationship between the boundary line and the buildings built at different periods. For instance, some portions of buildings might be allowed to be built over Government land in the past. A competent land surveyor could easily estimate the age of a building by examining the building material, building style and number of storeys etc. For instance a commercial building with glass curtain walls could not be built before the Second World War while a building erected with boundary stones could not be built after 1984. Provision is also provided in the Buildings Ordinance that the Building Authority may ask the architect who has submitted a building plan for approval to further submit a detailed site plan for reference.

GOVERNMENT DEPARTMENTS DEALING WITH LAND BOUNDARY

Strictly speaking only the Lands Department, which is responsible for Land Administration deals directly with the disposal and resumption of land etc. Portion or whole of a land parcel may be resumed if the land is required for different public uses such as highways, underground railway, drainage, green belt and other engineering purposes. The boundary of a land parcel to be disposed is fixed after various Government departments have been consulted. Even the Transport Department will suggest the ingress and egress point and the Fire Services

Department will comment on the curvature of access roads.

ESTABLISHMENT OF OLD LOT BOUNDARIES

Establishment of old lot boundaries were in the past carried out by the Government as a duty of the sole landowner in Hong Kong. That is to say, a lessee could in the past apply for the setting out of his lot again and again provided he paid the prescribed fee. At present, the job is very seldom carried out by the Government but by the private land surveyors. No matter whether it is carried out by the Government or by private land surveyors in Hong Kong or anywhere in the world, a land surveyor re-establishes the lot boundaries based on tangible evidence of documentary and physical features. After that he will analyze the reliability of these evidences and then decide the most probable location of a boundary according to the following hierarchy of evidence, which can be easily found in any textbook and most court cases.

- Natural Boundaries**
- Government Markings**
- Original Monuments**
- Physical Occupations**
- Measurements and Dimensions**

It should be noted that even co-ordinates and other precise mathematical reductions are considered inferior to undisturbed physical features. Establishment of an old lot boundary is not an easy task and so it may be the most interesting and challenging job for a land surveyor in Hong Kong or other parts of the world.

ARCHIVES

Archives are very important for the re-establishment of old lot boundaries and litigation in boundaries. Archives may be obtained from many Government departments and the Record Office. However, one should be extremely careful in choosing archives as evidence. A house, which did not appear on the Government survey sheet in the sixties could not prove exclusively that the house was built after the sixties because the house might not be picked up by the government surveyor or the house was not plotted by the government cartographer. However,

if the building did not appear in the aerial photographs of the sixties, then we can conclude that the building was built after the sixties. Other archives for boundary reestablishment include old maps, old files, legal documents, notices, newspapers, annual reports and even Legislative Council proceedings and records.

ADVERSE POSSESSION

The Limitation Ordinance was amended several years ago such that the adverse possession against any other person was reduced from 20 years to 12 years while the adverse possession against the Government remains 60 years. It is difficult if not possible to prove the possession has been undisputed over such period. The effect of the Limitation Ordinance is to extinguish the title of the former owner but the title is not automatically transferred to the occupier of the land. Successful applicants for adverse possession are very scarce in Hong Kong.

DIGITAL LAND RECORD

The Government of Hong Kong like many other Governments has established a digital land record of the whole territory. From now on searching old land records is much easier and quicker. However, one must bear in mind that the digital land record has no relationship with the reliability, accuracy and completeness of the database. An ambiguous boundary is ambiguous on paper and is still ambiguous in digital format. A reliable boundary as shown on paper will also be reliable under digital format but the reliability will not be enhanced in digital format.

CONCLUSIONS

1. Clear and accurate boundary definitions are essential for effective land administration. It is no exception in Hong Kong where the land price is among one of the highest in the world.
2. Although the Government sets out the boundary after she sells or grants a site, the land boundary is usually not well protected, identified and respected by the land owners, not to mention the tenants and other land users. The Govern-

ment seldom carries out any follow up actions on boundaries.

3. There is nearly no enforcement for the upkeep of boundary marks. There is only a section in the Summary Offences Ordinance saying that one who moves a boundary mark may be fined \$500 or three months imprisonment.
4. It is unwise not to enforce the boundary definition after it has been established and identified. If we walk along Nathan Road, Queen's Road or any main road in Hong Kong, we shall find nearly all the shops on the ground floor encroaching upon Government land.
5. Land boundary survey is not so easy as it appears. The surveyor must be competent, patient, polite and tactful. I can always remember that once I begged the manager of a leading jewelry shop to allow me to pick up a boundary corner inside a showing window for diamonds and jewels. I can also remember that some boundary stones were found under a bed in a squatter and a boundary stone was finally located after evacuating earth about five feet down a concrete slab. That is why cadastral survey or land boundary survey has to be carried out by licensed and qualified surveyors in most countries of the world.
6. As the Government carries out no follow up action on boundaries after she grants a lot, the land record plan maintained by the Government is only an old record with little relationship with what is existing on ground. What one sees in the record is not one sees on ground. The record is still useful for fiscal use but is far from perfect.
7. That the Government carries out no follow up actions on boundaries after initial setting out encourages more illegal occupations on Government land. People take it for granted that the land adjacent to a lot may be temporarily or permanently occupied and used.
8. The Government should therefore carry out an exercise to demarcate all the boundaries on ground with boundary stones or other cheaper and more permanent markers. Positions of

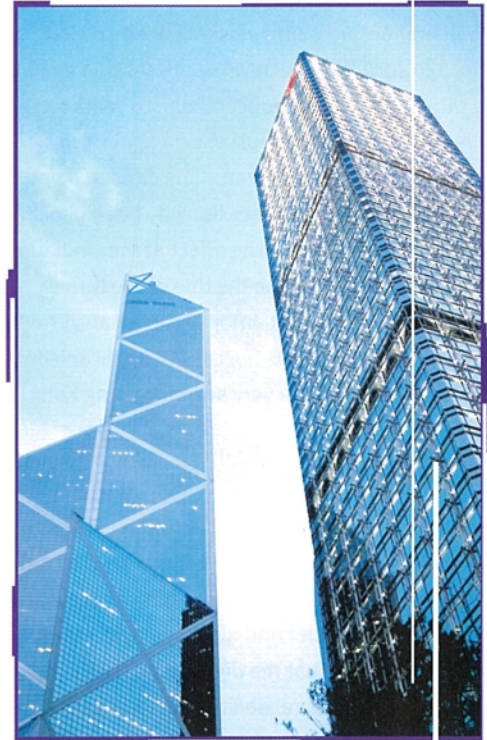
newly completed buildings should be checked that they are built within the legal boundaries. Now may be the best year in our history to carry out such exercise by hiring hundreds temporary, highly qualified but low waged workers.

9. After demarcating all the boundaries, the Government may make tolerance for small encroachment or occupation on Government land. For those large encroachment and occupation on Government land, the Government may grant concessions for the occupiers to pay the market rent.
10. The Government should initiate the owners of existing subdivisions to employ land surveyors to survey properly the division boundaries and make proper records and ground monuments. Otherwise the Government will carry out the task at their expenses.
11. The Government should establish a land record, which reflects wholly the ground situation without any doubt or any disclaimer for uncertainty.
12. Eventually, we should introduce the title registration system in line with that in USA, Canada, Australia, New Zealand, Singapore, Shenzhen and other developed countries and regions.



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REFERENCES

1. The legal environment of the Hong Kong land boundary survey system - Conrad Tang
2. Land law and registration - Simpson S. R.
3. Land Registration - Dowson and Sheppard
4. Cadastral Survey within the Commonwealth - Peter Dale
5. Land Survey Ordinance

Questionnaire on the Improvement of the Hong Kong Land Boundary Survey System

Conrad Tang, AHKIS, RPS (LS)
and Geoffrey Shea

This questionnaire was an important part of the research project "Cadastral survey system enhancement in the HKSAR" under the Department of Land Surveying and Geo-Informatics, the Hong Kong Polytechnic University. This survey made use of the PolyU web-programming platform such that respondents could easily answer questions on the web. By a letter published in the Surveying Newsletter, Volume 10 Issue 10, November 2001, the members of the Land Surveying Division of the HKIS were invited to answer the questionnaire on <http://www2.lsgi.polyu.edu.hk/Cadastre/quest.asp>. Some surveyors could not assess the answering program by web. This was probably due to their computer security measure on the Netscape settings, which disabled the execution of JavaScript program - an effective precaution to computer virus. We then sent printouts to some members and called others to solicit replies. By 5 December, we had received 58 replies and 4 blank replies, which were later taken out from the poll. 90% of the poll were made on the web and the rest were received as hard copies by mail or fax.

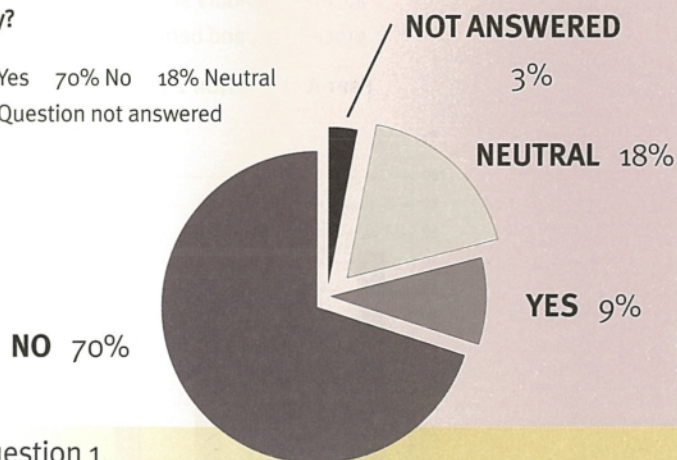
The assumption of the cadastral research project is that Hong Kong needs a survey law, which provides boundary security. The intention of the

questionnaire, in part A, is simply to receive opinions on various probable fields of boundary system improvements. We tried to cover a wide spread of fields and gratefully received many other considerations of improvements from the respondent surveyors. Part B was designed to test the acceptability of the concept of a new survey law to Hong Kong. Part C, again, was designed to compare the acceptance of systematic boundary survey with or without the support of law. The questions and responses are statistically listed as follows:-

PART A: GENERAL ASPECTS OF THE CURRENT HONG KONG LAND BOUNDARY SURVEY SYSTEM

1. Generally speaking, is the current situation satisfactory?

Answers: 9% Yes 70% No 18% Neutral
3% Question not answered



Part A - Question 1

2. Should there be any improvement in the land boundary survey system?

- No
- Yes
 - Law for land registration
 - Law for land boundary survey
 - SMO procedures
 - LAO procedures
 - Land surveying professional practice
 - Others _____

Answers: 0% No 98% Yes
2% Question not answered

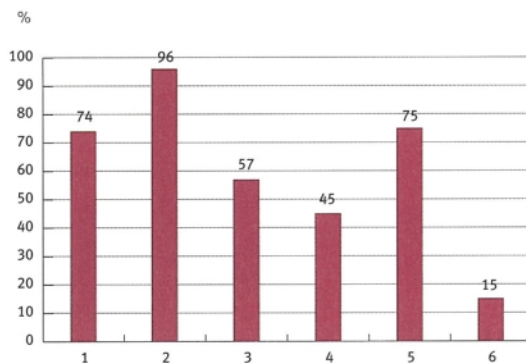
The circular answer buttons are mutually exclusive. That is, in Question 2, one could only choose either Yes or No. The squares are the optional check boxes. After indicating Yes, one could have multiple choices on the options.

The percentage of the respondents who ticked the fields of improvements:

- 74% for Law for land registration
- 96% for Law for land boundary survey
- 57% for SMO procedures
- 45% for LAO procedures
- 75% for Land surveying professional practice

15% of the respondents have suggested other fields of improvements, including university training in various disciplines such as boundary survey, real estate and law, professional indemnity, enforcement of present regulations, statutory body to supervise all land boundary survey, HKIS standards and procedures, and better liaison with legal profession.

PART A - QUESTION 2 (YES SELECTION)

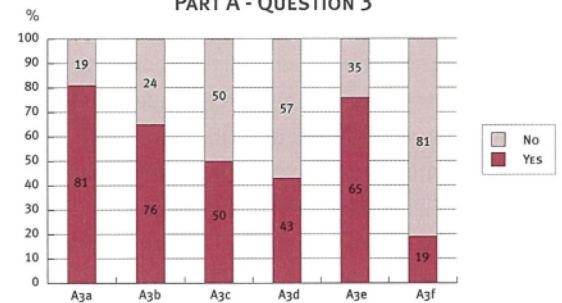


3. What should be improved to meet user expectations?

- 3a Legality: Surveyed boundary is accepted by court
- 3b Security: Surveyed boundary is accepted by government
- 3c Time: Complete survey within days
- 3d Cost: Competitive fee
- 3e Accuracy: Survey clearly depicts location, dimension and area
- 3f Others _____

19% of the respondents suggested other user expectations. A major group of concerns were about the professional liability, service quality and professional integrity. The second group of concerns was about the systematic survey, free access to all survey data, and survey monumentation.

PART A - QUESTION 3

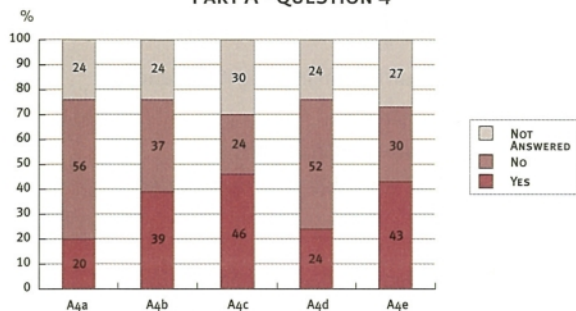


From the statistics of the three questions, it is straightly derived that the majority of the respondents (70%) are somehow unsatisfied with the current situation. It is just natural that no one would say we don't need any improvement. Yet, a 96% return showed that land surveyors are most eager to have the land boundary survey law improved. The high percentages (81% and 76%) on the selection of land boundary legality and security indicate the improvement direction of the survey law.

4. Is the current government land survey settings sufficient to achieve following aims?

- 4a Provide security of tenure
- 4b Assist land transaction
- 4c Help land administration
- 4d Provide clear definition on land boundary
- 4e Support land development

PART A - QUESTION 4



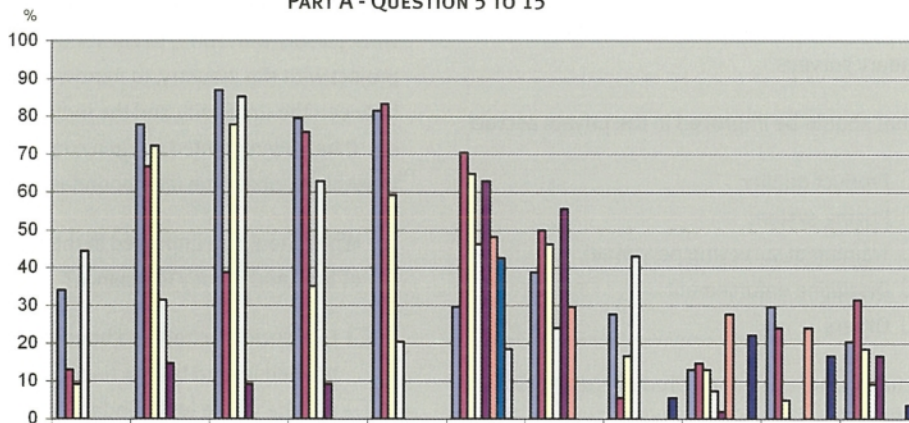
In fact, Question 4, following the theme of Question 3, was designed to counter prove that the current system, largely the work of the Government, is insufficient to provide boundary legality and

security. The high percentage of 'No' in 4a and 4d would prove the theme.

A few comments were received that the Question 4 itself was unclear. The term "government land survey settings" did not convey a clear meaning of the current work of the Government. This explained why a significant percentage (24% to 30%) of the question were not answered.

The question format of Questions 5, 12, 13, 14 and 15 are mutual exclusive circular buttons. The sum of the answered frequency percentage is 100. Question 6 to 11 are check boxes. The answered frequencies shown are by each option.

PART A - QUESTION 5 TO 15



	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15
A	34	78	87	80	81	30	39	28	13	30	20
B	13	67	39	76	83	70	50	6	15	24	31
C	9	72	78	35	59	65	46	17	13	5	19
D	44	31	85	63	20	46	24	43	7	0	9
E		15	9	9		63	56		2	0	17
F						48	30		28	24	
G						43					
H						19					
Not Answered								6	22	17	4

5. Would a Title Registration system help solve boundary problems?

- Yes
- No
- Neutral
- It depends on _____

The largest group of respondents (44%) are concerned with the survey provisions in the law. To

quote some typical remarks on the check box "It depends on": provisions for boundary survey, requirement of land boundary survey, whether the system incorporates the requirement of a proper land boundary survey upon registration, provision of sufficient land boundary survey clauses in the title registration system, any provisions on land boundary matters, whether a boundary survey plan is mandatory, good legislation and revamp of land

registry system, etc. We assume that a title registration system would help solve boundary problems only if there exists the provisions for land boundary survey.

6. What should be improved in the government sector?

- Formulate land survey boundary policy
- Raise social awareness of boundary issues
- Establish land boundary adjudication panel
- Improve cost efficiency
- Others _____

The highest response was on 6a - formulate land survey boundary policy (78%). Major concerns in "others" are about the setting up and strengthening of the Land Boundary Authority to handle all boundary surveys.

7. What should be improved in the private sector?

- Product quality
- Pricing system
- Training of surveying personnel
- Discipline enforcement
- Others _____

The major concerns are on product quality (87%) and discipline enforcement (85%). Other comments concentrated on professional liability, indemnity and integrity.

8. What should be improved in the Land Surveying Division of HKIS?

- Suggest improvement of land survey ordinance
- Strengthen professional discipline
- Protect member's interest in practice
- Explore broader land surveying professional services
- Others _____

The highest response was on 8a - suggest improvement for the Land Survey Ordinance (80%). And there were quite a few other comments: promote the surveyors' public image, promote public awareness and get away from parochialism and closed shop attitude.

9. What should be improved in the land surveying academic institutes?

- Improve curriculum in Hong Kong land boundary survey
- Provide more practice training
- Guarantee workable skills/knowledge
- Others _____

Feedbacks showed that 9a (81%) and 9b (83%) received most attention. Surveyors were generous to give improvement suggestions to the academics. They would encourage professors and trainers to acquire more practical land boundary survey experience, to invite experienced practising land surveyors as visiting lecturers, to seek feedback from practitioners, to conduct more research, to work closely with HKIS, to collaborate more research project with the industry, to narrow down the gap between the university and the industry's practice, etc. It has been pointed out in a comment that at present, emphasis on land boundary survey is low.

10. What should be improved in the design concept of the Land Survey Ordinance?

- LSA decides whether a boundary survey is needed in land transactions
- Include whole lot boundary
- Formation of a Land Boundary Survey Tribunal under the LSO
- LSA checks the LBP with the power of acceptance and rejection
- LSA's approval of LBP prior to registration in the Land Registry
- Disincentive charge on non-standard LBP submissions
- Jack up disciplinary proceedings
- Others _____

Option 10b (70%), 10c (65%) and 10e (63%) received relatively high attention. Amongst the comments, there was a suggestion that LSA should be an independent government organization directly under a Policy Bureau. A comment stated that if LSA checks the LBP with the power of acceptance and rejection, it would help the market to eliminate

substandard survey practice. But another comment stated that LSA already had the power to check the LBP for acceptance or rejection.

11. Can the following document prove the land boundary

“Prove” means that a judge in court would accept the document as a proof of land boundary

- Land Boundary Plan under cap. 473
- Registered lease plan
- Boundary plan approved by an ALS
- Boundary plan approved by an RPS
- Boundary plan approved a district land survey in DSO
- Other documents, please specify _____

The intention behind the question was to show that Hong Kong has no legally accepted prima facie boundary evidence i.e. a survey plan or document for which the court will accept as a proof of location, dimension and area of a property, except when the evidence itself is under challenge. No one single boundary document, including a registered lease plan such as the DD sheet, is readily accepted by the judge in court. As many comments indicated that all may be accepted and all may not be accepted, it would depend on the judge. A prima facie boundary evidence is most likely a result of land survey law, and a survey system, which follows to provide legal and secure land boundary. It would have been much easier for the respondents if the keyword "prima facie evidence" had appeared in the question.

12. Should GPS be used in land boundary survey?

- Yes
- No
- Neutral
- It depends on _____

43% of the respondents added conditions to the use of GPS. Three distinct groups of opinions were noticed. Firstly, the use of GPS depends on the establishment of a Code of Practice under the LSO. Secondly, it depends on the accuracy and efficiency of the GPS equipment. Thirdly, it depends on the locality and site conditions.

13. What is the optimum accuracy for agricultural lot boundary?

- 5 cm
- 10 cm
- 50 cm
- 1 m
- 3 m
- Other accuracy level, please specify _____

14. What is the optimum accuracy for lot boundary in Urban area?

- 1 cm
- 5 cm
- 10 cm
- 1 m
- Other accuracy level, please specify _____

The authors made a slip up in that Question 13 and 14 were not clear enough. The optimum accuracies of both the rural and urban lots were referred to the users in the society at large. The questions were interpreted as the highest achievable survey accuracy. Most comments indicate that rural boundary accuracy depends on the scale of the boundary record. Whereas for urban survey, 1 to 3 cm of accuracy are most preferable by the surveyors.

15. Should a surveyed area be qualified with the word “about”?

- Yes
- No
- Neutral
- At the discretion of the surveyor
- Others _____
- Question not answered

The answers were set as mutually exclusive, so the relative percentage was relatively low amongst all the options. Nevertheless, the option 'No' slightly outvoiced other options.

A couple of comments said 'No' for the new surveys and 'Yes' for the previously surveyed area. Some commented that one could use 'warning' or 'more or less' to replace 'about'.

B2 Cadastral survey requirements in civil law countries

Germany

The Civil Code of Germany [1892] defines the land registration with the roles of proving land title and extent. Subsequent cadastral survey laws followed.

Should Hong Kong apply this law?

- 30% Yes, suitable
- 0% No, unsuitable
- 18% Yes, applicable
- 0% No, inapplicable
- 18% Neutral
- 34% of the respondents did not answer the question.

Note: Suitable means the effect of the law is desirable to Hong Kong.

Applicable means the law can be adopted in the HK legal environment.

For answers to Question B3 to B11, please refer to the percentage chart.

B3 Land registration and survey laws in common law deeds registration countries

South Africa

Under the Deeds Registries Act [1937], a boundary plan approved by the Surveyor General is required for registration. And, *under the Land Survey Act [1997]*, a professional land surveyor performs subdivision and boundary re-establishment survey.

B4 Survey law in common law titles registration countries

Canada

Canada Land Survey Act [1985]

Three-tier survey system: policy level by Minister, management level by Surveyor General and operation level by licensed surveyors.

B5

The People's Republic of China

Surveying and Mapping Law [1992]

This is a comprehensive survey law which empowers the State Bureau of Surveying and Mapping to set policy, administrate and provide a full range of surveying and mapping services and products, from geodetic network to map production, cadastral survey and GIS.

B6

Korea

Cadastral Law [1990]

The law aims to provide efficient land management and protection of land ownership by describing cadastral survey and record for land registration.

B7

Singapore

Boundaries and Survey Maps Act [1884]

This was an Act to provide for the demarcation of land and for the establishment and maintenance of boundary-marks, and for the publication of certain survey maps. Section 38 stated "every map published under this Act shall be conclusive evidence in all courts of the boundaries". Singapore has a long history of accurate boundary in her land administration policy. The Government has the power to order land boundary survey and demarcation on land.

B8

Boundaries and Survey Maps Act [1998]

Singapore has entered into the period of Legal Cadastre. The Chief Surveyor may designate survey areas as Integrated Survey Zones (ISZ) and thereafter, proceed to re-define the boundaries of titled land with co-ordinates in the SVY 95 datum.

B9 Other laws to cope with land boundary problems

Australia

Encroachment of Buildings Act [2000]

In the Northern Territory of Australia, a court may order payment of compensation, conveyance of the encroaching land or removal of the encroachment.

B10

England

Party Wall etc Act of England [1996]

It is a British Act to make provision in respect of party walls and construction in proximity to the buildings. A surveyor could be hired to decide and settle the party wall issue. It can be seen as a law, settling party wall uncertainty with administrative procedure, rather than referring to land boundary record.

PART C SYSTEMATIC SURVEY

To solve the current land boundary problems in the New Territories using systematic survey.

Are you in favor of boundary adjudication under a new survey law?

C1 To run systematic resurvey of the whole NT (excluding town lot area)

55% Yes 15% No
15% Neutral 15% Not answered

C2 To run systematic resurveys of some selected Demarcation Districts

43% Yes 18% No
15% Neutral 24% Not answered

C3 Case by case when it needs to be surveyed

31% Yes 19% No
17% Neutral 33% Not answered

Without law amendment, is it effective to run -

C4 Systematic resurveys of the whole NT (excluding town lot area)?

15% Yes 57% No
9% Neutral 19% Not answered

C5 Systematic resurveys of some selected Demarcation Districts?

23% Yes 44% No
9% Neutral 24% Not answered

C6 Case by case when it needs to be surveyed?

27% Yes 31% No
11% Neutral 31% Not answered

The statistics shows that respondents accept systematic survey only when law prescribes it, and reject when it is not.

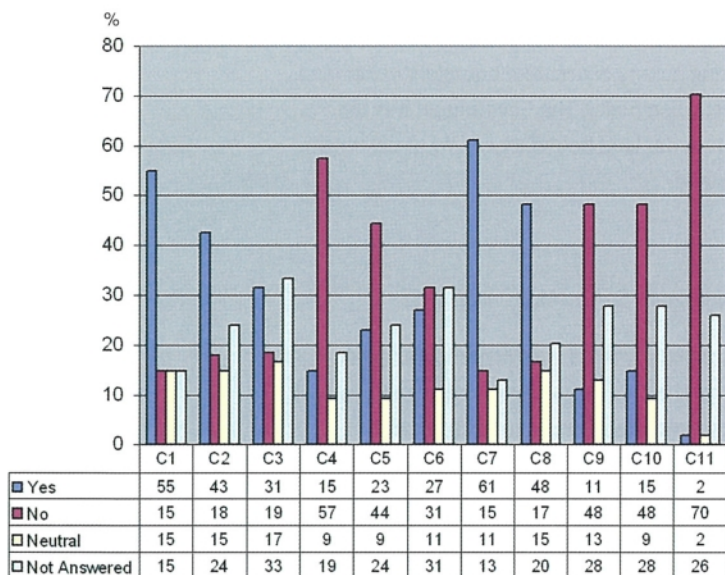
The resurveys should be done and responsible:

C7. By SMO

C8. By ALS

C9. By RPS

PERCENTAGE RESULTS FROM QUESTION C1 TO C11



C10. By surveying personnel fulfilling the technical requirements of the resurveys

C11. No qualification requirement

And for questions on the acceptance of surveying personnel performing the resurvey, only those from SMO and ALS would be accepted.

REMARKS AND CONCLUSIONS

A social research by means of mail normally has a return rate of about 10 to 15%. This research in making use of web programming has shown a higher efficiency and better return rate than the traditional mailing means. Albeit cost effective and easy to operate, the web emails could only get access to two-thirds of our members. It still had to be supplemented by mail and fax.

The authors were first time novices in setting up a questionnaire for professionals. The difficulties came in grasping the detailedness of the questions. In the first round of circulation to several experienced practitioners, the question on GPS were with the options of SMO adoption, Hong Kong GPS control network 2000, RTK methods and so on. The feedback indicated that there was no need to give too much trivial information. The result, similar to the question about Titles Registration, was that too little information was given and the question was thus too long or vague. The authors also slipped in the questions of prima facie boundary evidence and

optimum survey accuracy. After all, this is a precious lesson to the greenhorns. We pledge to do better next time round - the subsequent test on the contents of the new survey law proposed to Hong Kong.

Comments attached to the end of the questions were full of wisdom. To quote a couple of them: a member asked the HKIS to keep away from parochial mentality; another member suggested the LSA should be an independent office under a Policy Bureau. There were many points to ponder.

The thesis of the research is that Hong Kong needs a new survey law, which provides boundary security. The responses to the first 4 questions in part A consecutively showed that the majority of the respondents were discontent with the current boundary situation. There is a large need to have the land boundary survey law improved, and the directions of the law improvement are towards land boundary legality and security. The result of Question B1 further confirms the assertion. The rest of the questions provided supporting backgrounds and information for further improvement on the Hong Kong land boundary system.

We surveyors have to sort out, hand in hand, a workable future development plan for our industry, and to sustain our service and our job in tomorrow's changing world. We thank all the advisers, reviewers and respondents again.



Conrad Tang



Geoffrey Shea

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Conrad Tang graduated from the Department of Surveying Engineering in the University of New Brunswick, Canada. He joined the Hong Kong Polytechnic in 1988, and is now an Assistant Professor in the Department of Land Surveying and Geo-Informatics. His research topics include deformation and precise engineering survey, and is currently working on a part-time Ph.D. study on Hong Kong cadastre.

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