LEGAL SANCTION OF BOUNDARY

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ABSTRACT
This paper asserts that the weakness of the Hong Kong land boundary system is rooted from the lack of legal sanction of land boundary. It is analyzed from the early colonial land registration settings to current changes. A comparison with other jurisdictions on the sanction of boundary right is given. Court judgments, government action and surveying technological advancement have all influenced our land boundary system. The recent Land Titles Bill gives the determination of lot boundaries and it may be a good start of legal sanction of boundary. The paper reports that Hong Kong is far behind any secure land boundary systems like Singapore. A step forward on legal sanction of boundary is most practicable and desirable for Hong Kong to improve on land boundary security.

KEYWORDS
Land boundary  Registration  Sanction  Boundary Security.

INTRODUCTION
In Hong Kong, the legal definition of property in a piece of land does not include a clear provision for accuracy and security in the delineation of land boundaries. When Hong Kong began as a colony, the Government, in order to speed up transactions, adopted a rudimentary deeds registration system. In a deeds system without survey law, the extent of a conveyed lot is set out in a lot description and an attached plan.

However, there is no law governing accuracy in the land boundary description, or governing amendments to a lot boundary by survey.

Our rather primitive provisions for the protection of boundary rights nonetheless remained sufficient as long as all other rights remained unimproved and the needs and expectations of our society remained unchanged. On the other hand, over the last one and a half centuries, a great majority of other jurisdictions have improved their property systems from deeds to title registration, and/or from a weak definition of land boundary to high accuracy and security in the land boundary system. Hong Kong’s land boundary system remains largely unchanged.

History of land boundary administration in Hong Kong
It is well known that Demarcation District (DD) Sheets are crude land boundary records. Un-baffled by harsh physical conditions and primitive equipment, the surveyors who produced more than 600 sheets in 477 Demarcation Districts, covering 300,000 lots, in a short period of 6 years (1899 -1904), laid down the foundations of the land boundary records which were to support the land ownership, tax and administration functions. We present day land surveyors should hold in respect these predecessors of ours who achieved so much with so little.

Following the DD survey, the New Territories Administration made new rural land grants by manual updating on the DD sheets. Government engineering works and real estate development land grants were allocated by the Crown Lands and Survey Office. By and large, DD sheets were used as land grant controls until the 1960’s, when maps on the large scale 1:1200
and the correlation sheets gradually replaced the old land records. Many of the new grant leases were not executed and the manual updating of new lot boundaries on DD sheets were less accurate than the Old Schedule Lots.

Pre-War urban land grants did not necessarily include accurate boundaries. What usually happened was, an urban lot which was bounded by four streets was sectioned into many sub-lots. Many of the nominally sectioned areas could not, when added up, be reconciled with the registered area of the mother lot. This later caused great headaches for individual developers as larger and larger discrepancies were uncovered among the granted area, the plan area and the areas under occupation. The Government Land Survey Department has long recognized the problems, but legal means to correct the land boundary discrepancies have been lacking. The pragmatic solution remains “surrender and re-grant,” though this is not welcomed by landowners.

Satellite towns mushroomed in the Territory from the 60’s to the 80’s. The Government resumed Old Schedule Lots without survey, but designed and set out the new towns properly and with modern methods. The rural land remaining received little attention in terms of planning and development. It was the Melhado case in the 80’s that compelled the Government to enforce planning law in the New Territories. As the physical lot boundary features were destroyed or dilapidated, DD sheets and their correlations, despite their known deficiencies, became accepted as the defacto land boundary records.

In 1982, the survey section of the Crown Lands and Survey Office became the Survey and Mapping Office of the Lands Department. Shortly afterwards, in 1984, the Conveyancing and Property Ordinance waived the granting of leases. In doing this they inadvertently disrupted the as-built checking procedure, thus degrading the integrity of the land boundary record.

In brief, Hong Kong has adopted a rudimentary deeds registration system without a secure means of defining land boundaries, and the Government has demonstrated a preference for handling land boundary problems by administrative rather than technical measures. Given the combination of an aging and incomplete state of land boundary records and the lack of controls and checks in sectioning, Hong Kong faces serious land boundaries problems.

### Survey Systems in Other Countries

Boundary problems have existed even in many long standing title registration and land boundary systems. An example can be seen in Queensland, Australia, where it is difficult to upgrade a title plan to reflect occupational boundary and where adverse possession is used as a measure to solve boundary problems [Park, 2003]. Some relatively new title systems have land boundary upgrading mechanisms built in. The Singaporean Land Boundaries and Survey Maps Act, for example, declares the national land boundary record to be a legal coordinate cadastre. The Hong Kong land boundary system lags behind the rigid Australian systems and is very far behind the Singaporean system.

The author believes that all jurisdictions, whether a title system or a deeds registration system is in place, should have some legal provisions to deal with problematic land boundaries. There need to be legal measures to ensure secure lot boundaries - not only at the time of the land grant, but at any time when the legal land boundary record does not reflect occupation on the ground.

In the table below, it can be seen that the strong land boundary jurisdictions usually adopt cadastre law or survey law whereas weak land boundary jurisdictions usually have the boundary rights, together with other rights, handled in registration only.

To define land boundaries accurately is a technical matter, and is the responsibility of the land surveyor. To make land boundaries secure is a matter of law, and is the duty of our legislature and land administration.
Singapore has done it! The registration laws there, both titles (97% of land parcels) and deeds (3% of land parcels), include succinct provisions for land boundaries - a land parcel must have a boundary record accurate to government standards. The 1998 Land Boundaries of Survey Maps Act defined the legal coordinate cadastre that the land boundary record kept by the Land Authority is the Prima Facie Evidence of boundary. The Surveyors Act deals with the practice and confines land surveying activities to licensed surveyors.

In the third world, it is understood that governments lack the funding needed to deal with land boundary problems. Both Hong Kong and the Latin American countries run on deeds registration without legal sanction of boundaries. One would not expect that land boundary rights in Latin America would be comparable with the system in well-developed countries. Hong Kong, however, is a small and wealthy area where, technology is readily available, but there is a lack of government will to upgrade the land boundary system.

A number of voices urging improvement were heard in the 80’s. According to Willouby and Wilkinson [1995], the Registrar General, Mr Noel Gleeson, launched a preliminary study on the introduction of titles registration to Hong Kong in 1988. The Titles Bill has been under antagonistic attack by the conveyancing profession in the early years of its introduction. As a land surveyor, the author certainly hopes the Titles Bill materializes and lays down a workable standard of land boundary sanction.

On the land boundary side, after the formation of the Lands Department in 1982, the Survey and Mapping Office set up a Land Boundary Committee, chaired by

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<th>Registration</th>
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<td>Civil law</td>
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<td>Titles</td>
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<td>Survey law</td>
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<td>Deeds</td>
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<td>Common law</td>
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<td>Titles</td>
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<td>South Africa</td>
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<td>Hong Kong</td>
<td>Deed plan &amp; description</td>
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Mr S C Leung, to work on the Land Survey Ordinance. Improving the Hong Kong cadastral system is no easy task. We have seen reluctance touching land boundary issues in our Titles Registration Bill, and our Land Survey Ordinance is still something of a half-baked provision. The Land Survey Division of the HKIS and the Survey and Mapping Office are jointly working on further improvements to our survey laws.

The Court
The land boundary system remains in a weak definition mode. Compounded with changes in land use patterns and land-users’ expectations on the accuracy of land boundaries, boundary disputes are not uncommon. Tang [2002] recorded over a hundred land boundary related court cases, classified variously by the courts as miscellaneous, adverse possession, trespass, encroachment and so on. Many land boundary dispute judgments were not reported or stored on the web-reference system of the Judiciary. Hundreds of court cases did not issue a final judgment and thousands did not even reach the court. The roots of land boundary disputes lie in the primitive land boundary rights recording mechanism in our deeds registration as well as the sloppy land administration of previous decades.

In the case of The House of Dior Limited vs David See Chai Lam and the Ka Wah Bank Limited, Judge Simon Li censured the “gross inefficiency of the New Territories Administration” [Li, 1971] for not completing the land lease execution, citing this as the cause of that particular boundary dispute. In the case of Man Kam Tong v Man Lin Tai, High Court Action No.5478 of 1981, Judge Hunter gave a fair and detailed comment on the insufficiency of the land boundary records and urged the government to improve them so as to avoid further unnecessary tragedies [Hunter, 1984].

Judges after Hunter seldom asked the Government to improve land boundary records, deciding that nothing could be done, even with modern survey methods, to improve land boundary accuracy. Judge Barnett determined that the Old Schedule Lot boundary could not be accurate to within 3 meters [Barnett, 1986]. Judge Findlay accepted an expert witness’s statement that it “is simply not possible, using the tools available, to place a boundary with more accuracy than within about 1 meter” [Findlay, 1999].

A land surveyor gathers all available boundary evidence, weighs it, and comes up with the best possible answer. A Judge, however, may reach a decision having taken evidence from different stand points. Judge Hunter re-established the original grant intention, firstly from legal evidence, and then from extrinsic evidence. His judgement is the most respected among surveyors because he sets out a norm in the reconstruction of the conveyance in respect to land boundary evidence applying to Hong Kong. Other judges pick up on the fact that land boundary records are crude and thus a boundary cannot be determined on a better basis than the face value of a legal record. This is why other jurisdictions have long improved the sanction of land boundary in law, and Hong Kong lags far behind the rest of the developed world in this.

The Government
The colonial government used its prerogative power to interpret whatever crude land boundary records were available. Formal complaints on land boundary were rare. After all, there were not many subdivisions or land development projects in the New Territories before the new town developments in the 70’s. Following the developments of recent decades, however, people have been gaining a growing sense of their legal rights and are no longer reluctant to take the Government to court. It is perhaps significant that the Survey and Mapping Office has refrained from handling front line services.

Since the boundary system is administrative in nature, some powerful groups, for example, real estate developers will have advantages over common individuals. In a recent study, 42% of the tested lots (819 lots out of 1942 lots) were identified as having registered area defects [Tang, Lam and Cheng, 2003]. Should an individual landowner have problems with lot boundaries, there is no legally certain method to verify the delimitation of a land boundary survey. The effective solutions are administrative; the land administration either tolerates the existing conditions or wipes out the
current record and makes a new one.

A land developer deals with the land administration in a locality that contains tens and hundreds of lots. The District Lands Office requests the service from the District Survey Office to survey the project area. Naturally, the survey result is acceptable to the Government. Thus the developers enjoy an unfair privilege over individual landowners.

Indeed, land boundary is only one of the rights in a land grant. Many of the land boundary problems, or land boundary record problems as we call them, are just symptoms of uncertainty of land rights in the grant documents. The long used leases and land sale documents are not a satisfactory means for recording and especially tracing and verifying land rights. There is a need in modern societies to let the general public freely and easily identify rights on land and building properties. Automated cadastres in Europe or land information systems in English speaking countries have been developed in recent decades to fulfill requirements of security, openness, fairness, efficiency and so on.

While cadastre and land database reforms are being carried forward all the time in the developed world, Hong Kong is, at last, taking a modest first step in the direction of building up a city-wide spatial data infrastructure via a recent study on the government department land data by the Data Alignment Measures (Housing, Planning and Lands Bureau, 2004). Secure ownership rights and land boundary rights are integrated into this spatial data infrastructure and are openly and conveniently accessible to the general public through a network - so, something which is already a daily service in developed societies is a long term development project for Hong Kong.

The Government has long adopted the attitude that it is the duty of grantees to take care of their own rights, including land boundary rights. But the land boundary system is not accurate enough to support present daily use. Many government officials are unwilling to solve problems that result from earlier land grants. They call such problems ‘a can of worms.’ We have missed so many chances to improve our land boundary system. Now that the Land Titles law is upcoming, it would be a great pity if we were to miss the opportunity yet again.

**Technology**

We have seen revolutions in the methods used by the measurement related professions. The electronic equipment in daily use, and the hardware of our survey systems have been very much improved. In Hong Kong, the second generation of correlation exercises in the 80’s serves as an improved land record with intelligent rules on assessing physical evidence. The 1980 horizontal controls, which made use of a mid-range EDM and least squares adjustment software, still provides a workable territory-wide coordinate system. The Hong Kong territory-wide GPS control network is already complete, but it awaits formal launching.

Technology brings economies. Surveying technology to define land boundaries to a pencil’s width is readily and inexpensively available. For example, the complete re-survey of the 3,600,000 lots in Quebec was budgeted at 492 million Canadian dollars in 2000 [Quebec Government, 2001]. The average price for the survey and the updating of the cadastre is about 140 Canadian dollars per lot.

The Singapore Survey Department launched a joint GPS control-network implementation project with Nanyang Technological University to build up a control network for Singapore. By 1997, about 270 primary control points and over 3000 secondary control points were established at a mere cost of 2.5 million Singapore dollars [Goh, 2002]. With such a network covering the whole territory, Integrated Survey Zones are defined and the surveyed coordinates are used to legally define lot boundaries.

In Hong Kong, we use technology to guess what the boundary was in the original land grant. No matter how well we manipulate those coarse thick lines on land boundary records, there is no way to make them accurate to modern standards. Inaccurate land boundary records create unfortunate and unnecessary land boundary disputes. Of course, it also creates jobs
for surveyors, lawyers and even government administrators. However, it is utterly unfair to individual landowners, and our society suffers from the loss of efficiency in land use and development.

**SOLUTIONS TO LAND BOUNDARY RECORD PROBLEMS**

Obviously, our Government does not want to commit to a secure and fair land boundary system as long as this carries with it even the slightest financial burden. However, in the interests of good governance, our Government should at least nurture a workable legal environment for the sanction of land boundary.

Arguably, the Land Titles Bill may fulfill this requirement tacitly. Generally, the Government would like to keep the uncertain land boundary situation in the new titles, because this would mean that the Government would bear no liability whatsoever in land boundary issues. Section 19 declares the approximate plot boundaries. Section 87 reiterates that the Government is not responsible for any discrepancy in area and boundary. Probably in response to the strong representations made by the Hong Kong Institute of Surveyors, Section 92 gives a limited scope for determination of boundaries. To be fair, this is already a break-through improvement made by the Land Registry.

In Section 92, the Director of Lands is not allowed to determine sectioned boundaries and Old Schedule Lot boundaries. No mention is made elsewhere in the Bill of whether an individual landowner is allowed to hire a land surveyor or even himself submit a plan and apply for title registration.

If the Land Titles Ordinance allows for the registration of the plans for a determined land boundary for any whole or sectioned lots, then it will at least be making a start in devising a legal sanction for boundaries. The Land Survey Ordinance can make provisions governing the quality of, and the liability and responsibility for the registered plans. Ensuring the implementation of these provisions would be the duty of the Authorized Land Surveyors.

For the sake of clarity, the principle of Determined Boundary in the British Land Registration Act 2002 could be adopted in Hong Kong. It should be clearly stated who is to perform the boundary determination and what will be the effect of so doing. Assigning the task of land boundary determination to certain professionals requires a structure for assuring quality and allocating responsibility. For this purpose, the author has to agree that Authorized Land Surveyors should be used. As this carries a risk of monopoly, the current apprentice system will need to be replaced by an open and fair examination.

Secure legal sanctioning of boundaries of the kind that exists in Singapore is not immediately achievable in Hong Kong. Hong Kong does not have such a tradition. A reasonably workable and secure land boundary system could nevertheless be facilitated in Hong Kong if there exists a legal sanctioning of boundaries which are administratively accepted by the Government, especially the Lands Department. Of course, if area discrepancies arise not solely from uncertainties in the land boundary records, but are related to uncertainties in other conditions of the land grants, the Lands Administration Office should sort out the problems associated with this and provide appropriate solutions. This appears to be the can of worms that land administrators do not want to touch.

So far, the Government has failed to fully grasp the opportunities opened up by technological advances for improving our land boundary system. Modern surveying and mapping know-how could easily ensure centimeter accuracy for all land parcels. The technology itself is not expensive, though the personnel required to operate it might be. A well planned strategy is needed for the long term development and improvement of the Hong Kong land boundary system, without a drastic increase in the amounts invested, perhaps even without an increase at all. It calls for the development of a new policy - the current SMO does not have a mandate to devise such a policy, and the Housing, Planning and Lands Bureau does not seem to be working on one either.
The best technical solution is of course the complete updating of the land boundary records by systematic re-survey. The problem is not cost. The Government, particularly the Lands Department, is not ready to face the challenges posed by the many large discrepancies in land grants. Identifying or fixing the boundaries technically is one matter. Dealing with the competing legal claims arising from this is quite another.

The HKIS raised the issue in 2002, but the Bureau declined to take it up, saying that the government has no extra resources for such action. Without a law to legally sanction the newly surveyed land boundary records, the land boundary system is still incomplete under the current weak definition of land boundary. The real obstacles to the reform of the land boundary system, like the reform of the land registration system, are the objections from those who enjoy benefits under the current system. Hence, a decision to set reform in motion is necessarily a political decision.

REFERENCES


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ACKNOWLEDGMENT

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Note: The Land Titles Ordinance has passed in July and will be implemented 2 years from now. Old Schedule Lots were included in the title lot boundary determination but sectioned lots were not.