

Survey Record Plan vs Survey Result Plan

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Key words:

Demarcation District (DD) Sheet, the source record of the New Territories boundary survey.

Up-grading, the operation to up-grade the boundary description.

Interpretation, the interpretation of old boundary records as a vital step to up-grade the boundary description.

Grantor, the land grantor, i.e. the Government in the case of lands in Hong Kong.

Grantee, or may also be known as the leasee in the case of Hong Kong who obtained land lots from the Government.

Authorized Land Surveyor (ALS), the land surveyor qualified under the Land Survey Ordinance for practising land boundary survey in Hong Kong.

Survey Record Plan (SRP), the plan containing all the boundary survey information produced by the ALS upon his survey of a land lot.

SUMMARY

Land boundary description must be continuously changed to cope with the social development, firstly in the written form, then in the graphical form and lately in the numerical form. For every change, an interpretation of the previous boundary description must be made. This changing scenario naturally applies to the DD sheet situation in Hong Kong. The Survey and Mapping Office as the Government representative in the land boundary matter should be in a position to agree with the Authorized Land Surveyor (who acts on behalf of the grantee) on an up-graded boundary plan for replacing the DD sheet. The present system of accepting the Authorized Land Surveyor's plan merely as a Survey Record Plan (SRP) without any status is not good enough. We must cause this plan to be recognised as the final boundary plan. Let us turn the present SRP to become the Survey Result Plan.

SUMMARY (in Chinese and in a poem form)

測繪徒成紀錄篇
毫無地位最堪憐
何當心血能公用
紀錄改爲結果篇

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1. BACKGROUND

In Hong Kong, old land grant plans usually showed the land lot boundaries in a graphical form without dimensions or coordinates. This is particularly true for the New Territories (NT) where hundreds of land lots were shown collectively in a plan known as the Demarcation District (DD) sheet. The aim of this DD survey in the years 1899 to 1904 was the identification of land ownership and the collection of government rents. Because of this fiscal intention coupled with the difficult survey conditions, the time constraint and the primitive survey method, the DD sheet was generally of a moderate quality only with some remote areas grossly erroneous.

Immediately after the DD survey, an attempt was made to survey individual villages at a larger scale but this, for unknown reasons, was never completed. The DD sheet was taken as the only plan for land registration purpose. Lands not claimed as DD lots were declared as Government land and were sold or granted as New Grant (NG) lots. The DD sheet, though not of a good quality, represented nevertheless the genuine result of an actual survey by trained staff and was not too bad for serving its original purpose. Unfortunately, this DD sheet was subsequently used for direct plotting of the NG lots and other changes such as land resumption which was effected simply by erasing the land lots from the DD sheet. Worst still was that such new plotting or erasing was handled by untrained staff in the old days. The original content of the DD sheet was thus blemished and rendered more unreliable.

Concurrently, land grants in the urban areas were better handled. The general practice in the early dates up to the middle of last century was to convey a land grant by a sale plan or a grant plan with a few dimensions. The land was then allowed to be developed and a lease survey of the as-built situation was conducted. As long as the built-up area did not deviate from the grant plan appreciably, the as-built situation would normally be accepted as the final grant position with boundary stones erected and a lease plan produced. However, the lease survey gradually lagged behind the urban development and was abandoned by the introduction of the Conveyancing and Property Ordinance (**Reference 1**) in the 1970's for the queer logic of "better none than inadequate". Some early urban land lots were therefore left unsurveyed apart from their initial depiction on the grant plan thus causing some urban lot boundaries just as uncertain as the DD lots.

2. THE NEED OF UP-GRADING THE OLD PLANS

By inheriting these kinds of land boundary records, people nowadays certainly find them inadequate to serve the modern development. The present need is to ascertain the land boundary to cm, if not mm, accuracy and also its absolute position in terms of the national coordinate system so as to be able to integrate different development projects together. The

ideal situation is of course to up-grade the DD survey and those sub-standard old grants by a comprehensive modern survey. As this situation is still to be hoped for, the current practice is for individual Authorized Land Surveyors (ALS) to re-establish individual land lots on a need basis. Each surveyor is to produce a plan known as the Survey Record Plan (SRP) to show his survey work. This plan is then submitted to the Survey & Mapping Office (SMO) as the Survey Authority for record. Unfortunately, such plan and such recording action do not confer any legal status to the re-established boundary and boundary problems still persist. This is a serious issue and therefore becomes the basic theme of my present paper.

The boundary of a land lot is supposed to be a physical feature to mark the extent of the area possessed by the landowner. This need of land boundary identification did not appeal to people in the early history when they lived as nomads nor to some people nowadays who lived as hunters in the polar regions or in the prairies. The concept of land boundary arose only when people started their settlement life as farmers or other kinds of dwellers. While a land boundary may be represented by a fence or similar physical features, many boundaries may remain unmarked. Some sort of description of the boundary for record purpose is inevitable. The early form of boundary description could only be written ones or the meats and bunds method. With the development of the cartographic technology, graphical form of description emerged. This was further developed to become the numerical form or the digital form.. Thus, the improvement and up-grading of boundary description are reflecting the advancement of human social development and should be an expected phenomenon.

3. THE NEED OF INTERPRETATION

For every change of the form of description, an interpretation of the original boundary definition must be required. This need of interpretation equally apply to our present up-grading of the DD sheet boundary or the old grant plans. Apart from the crudeness of the graphical boundary definition, these sheets or plans often revealed inconsistent information such as the plan area being different from the stated area, the plan boundary annotated as the high water mark being plotted away from the coast line, and a boundary extending between two parallel streets being of a stated dimension shorter than such an amount of separation.

The inconsistent data in the old boundary records may be likened to errors in an accounting system, say, a bank cheque being found to contain inconsistent written and numerical amounts. I understand that such a cheque would be treated as void by the accountants. In the boundary situation, to adopt the same discarding principle may not be realistic and therefore interpretation of the graphical presentation must apply. Unfortunately, there has been arguments that since the DD sheet and the grant plan are legal documents, these plans even including those with a remark of “subject to survey” have to be regarded as gospel and cannot be changed through the surveyor’s interpretation.

To such an argument, I hold a different view particularly for the DD sheet. Firstly, I doubt if the quality of the DD sheet is really good enough to serve the contractual purpose initially. As had been discussed in the earlier paragraphs, this sheet was not intended as a land boundary survey. Even the DD surveyors themselves had attempted to re-survey the village

areas immediately after the original survey. There were other historical events revealing that some authoritative persons had indeed advised on the need of up-grading the DD survey. In 1898, i.e. before the start of the DD survey, the Secretary of State, Mr. Joseph Chamberlain wrote to the Governor of Hong Kong saying that “the land question, however, by no means ends here and there will be much left to consider after the preliminary survey is completed” (Reference 2). In 1929 when the Director of Colonial Surveys, Brig. H. St. J. Winterbotham was invited to visit Hong Kong to inspect the Survey Department, he advised that “the DD sheets should be connected by survey with the existing triangulation framework, and should be revised from air photos” (Reference 3). In 1959, another imminent surveyor Brigadier Eartine Hotine was also invited to visit Hong Kong. His advice was to carry out an up-dated and continuously maintained survey to ascertain the land ownership. In his own words: the usual cure is a fresh Settlement of Rights on the ground (Reference 4). So there is every doubt about the suitability of the DD sheet to serve as a reliable boundary contractual document in the first place.

Secondly, apart from the quality factor of the DD sheet, the processing of making use of the DD sheet as a contract document is also debatable. At the time of registration of the DD lots, the villagers were merely invited to come to claim ownerships but without the provision of any surveyor to act on their behalf to verify the acceptability of the DD sheet. Without having applied a stringent checking on the accuracy of the DD sheet and leaving some contents now proved to be grossly erroneous, the Government might not have done its part as responsible as it should. I wonder if those poor parts of the DD sheet may constitute an act of misrepresentation according to the Misrepresentation Ordinance (Reference 5)? All in all, I suggest that the processing of the making use of the DD sheet may not justify the upholding of the contractual argument. The DD sheet, and also some old grant plans, must be subjected to interpretation as the remedial action..

4. PREVAILING PROBLEMS

The situation now stands is that the DD sheet and those substandard grant plans remain to be legal but knowingly to be unsuitable for the present day’s use whereas new and better plans are being produced but without any status. This situation does pose a big problem. Legal but unreliable plan and reliable but unrecognized plan coexisted and none of them may serve as the final one to suit the modern day development. Worse still is that more than just one new survey of a boundary might be attempted by different surveyors or at different time thus leading to conflicting boundary definition. While a system of centrally recording these new plans by the SMO had been maintained, this is still inadequate to resolve the boundary conflicts because the lack of any legal recognition of a surveyor’s definition cannot compel a second surveyor to adopt the earlier definition. An accumulation of plans without a hierarchy is adding confusion to the boundary definition. The lack of a final plan is really the crux of the problem.

5. THE ROLE OF THE SMO

By assuming the role as the central record holder, SMO always responded to the ALS's submission of a plan by stating that although SMO will keep the plan in the central record, SMO is not in a position to approve the boundary definition and it remains to be the ALS's responsibility for the accuracy of same. While this claim of no authority may be factual, the negative tone of reply is most discouraging. People, including the clients of the ALS, would interpret such a reply as a distrust of the ALS's work and be left wondering whether they should rely on the work of the ALS or not. This inconclusive remark sounds like the flickering hand signal of a traffic policeman. If a traffic policeman does act in this way, traffic accidents will most likely occur (彈弓手會撞車). For the SMO to reply in such an ambiguous way, the consequence will likewise be boundary conflicts (彈弓口會撞界).

There has been a case that when an ALS's boundary plan (which had been admitted by the SMO) was used for a planning design by the ALS's client and submitted to the Land Administration Authority for approval, the latter rejected the design for reason that the boundary deviated from the sale plan. In this way, while the SMO claims to be not in a position to approve an ALS's work, the other office assumed the authoritative role to disapprove the ALS's work. The large survey effort is rendered abortive by the wisdom of a non-land surveyor. Another common situation is that people stick to the registered area for their land dealings irrespective of what the surveyed area is even though the former area does not tally with the boundary definition. That the area is to follow the boundary never occurred to these people as the mathematical truth. On the one hand, people accept that the DD sheet boundary may not be final, but on the other hand, they insist on treating the registered area as final whereas in fact the area must follow the boundary like the shadow to follow the body. The concept of up-holding the area irrespective of the boundary is clearly illogical.

What makes the SMO staff to disclaim their approving power is probably due to their perception of their role as a mere boundary record holder whereas, in fact, they should also represent the Government as the land grantor in respect of boundary matters. Knowingly that the original grant plan no longer suited the present day's use, the SMO staff should have shown their initiative to produce an up-graded plan and invited the grantee to agree. Even if they chose not to initiate action but waited for the receipt of a plan submitted by the ALS (on behalf of the grantee), they should respond by signifying their agreement or otherwise so as to result in a final boundary plan. In the case that the plan was prepared for an isolated land lot, the agreement on the up-graded plan should be a matter between the parties to the contract, i.e. the SMO as the grantor representative and the ALS as the grantee representative. No any third party's interest should be involved. Only if the plan is for a land lot which abutted other lots that more precautionary actions may be justified. However, as is to be discussed later, this should not be too complicated for a solution. In short, I suggest the SMO staff to review their role in responding to the ALS and reconsider the justification of their declaration of "being not in a position to approve the ALS's plan, etc."

6. THE RESPONSIBILITY OF THE ALS

The reminding by the SMO's staff of the ALS's responsibility for the accuracy of his plan sounds reasonable. However, under the present situation, the upholding of this responsibility

is not that straightforward. Precisely what the ALS is able to do is limited. Firstly, he cannot be responsible to rectify the past conflicting records because this work would definitely fall outside his jurisdiction. Secondly, he cannot be responsible for ensuring his plan be accepted by all possible authorities all the time. As SMO being the Survey Authority refrains from *approving* the ALS' plan, how can the ALS sell the same to others for acceptance. Moreover, the ALS's plan may be used by different persons for different purposes and at different time. It is impractical for the ALS to escort his plan all the time for passing through all these check points. Thirdly, the ALS can at most be responsible for the computation and plotting accuracy of the plan and, of course, the soundness of his reasoning. However, this is distinct from ensuring that his boundary definition may tally with all the past boundary data or with all abutting boundaries done by others. Without any status assigned to the ALS's plan, the possible boundary conflicts may be caused by external factors which are out of the ALS's control.

The above discussion is not to defend the ALS from up-holding his responsibility, but the lack of recognition of his plan compels him to become rather powerless. Given with the existence of conflicting records, the ALS will have to choose one set of data out of several possible alternatives for deriving his subject boundary in a survey. Whatever he decided, he may still face the query by the SMO staff or, indeed, anybody for why the rejection of the other alternatives. As all these alternatives are mutually exclusive, the ALS would only be challenged as wrong, but never be confirmed as right. This is a most unfair situation possibly not experienced by any other professionals. Take the case of a medical doctor or a structural engineer. These professionals will surely have to be responsible for their work and will face accusation when they have done wrong. However, the difference between them and the ALS is that the doctor or the engineer will not be queried until and unless certain consequential result of their work had proved to be disastrous. Whereas in the case of the ALS, he is deprived of any recognition of his work right from the beginning and may subsequently be blamed for failing to obtain acceptance by others. If the ALS continues to have to operate in such a *working without result* situation, how can he survive in the market as no one would wish to employ such a professional. The land surveying industry will collapse.

7. THE WAY TO RECTIFY THE CUURENT SITUATION

All the above discussion clearly converges to the need of establishing a final boundary for every survey. As such an action must involve the cooperation of the Land Registry who in turn has to observe the prevailing land laws, the support of the legal sector is essential. Apparently, the reason for not supporting a change of the existing land law is the worry that unless the Government is prepared to guarantee the accuracy of the boundary, the change of the Land Title Ordinance to cater for the boundary aspect would invite a lot of problems. If my above understanding is correct, I consider that this argument is equivalent to saying "either perfect or none". Must we go from one extreme of upholding the DD sheet to the other extreme of replacing it by a guaranteed boundary plan? The present day's plan should generally be accurate but to take it as the guarantee of boundary will course be another matter. I believe that most landowners may not be aspiring this standard either. The pragmatic requirement is that if legality is attached to the present day's plan, the boundary

can be guaranteed to be unique and be always retraceable. This way of guarantee will tally with the reality and will represent a big step forward thus doing away many problems including that (a) boundary conflicts will be eliminated, (b) development can be processed with confidence, (c) duplicated survey effort can be reduced (d) apportionment of the responsibility of slope maintenance can be facilitated and (d) many land administration work can be expedited.

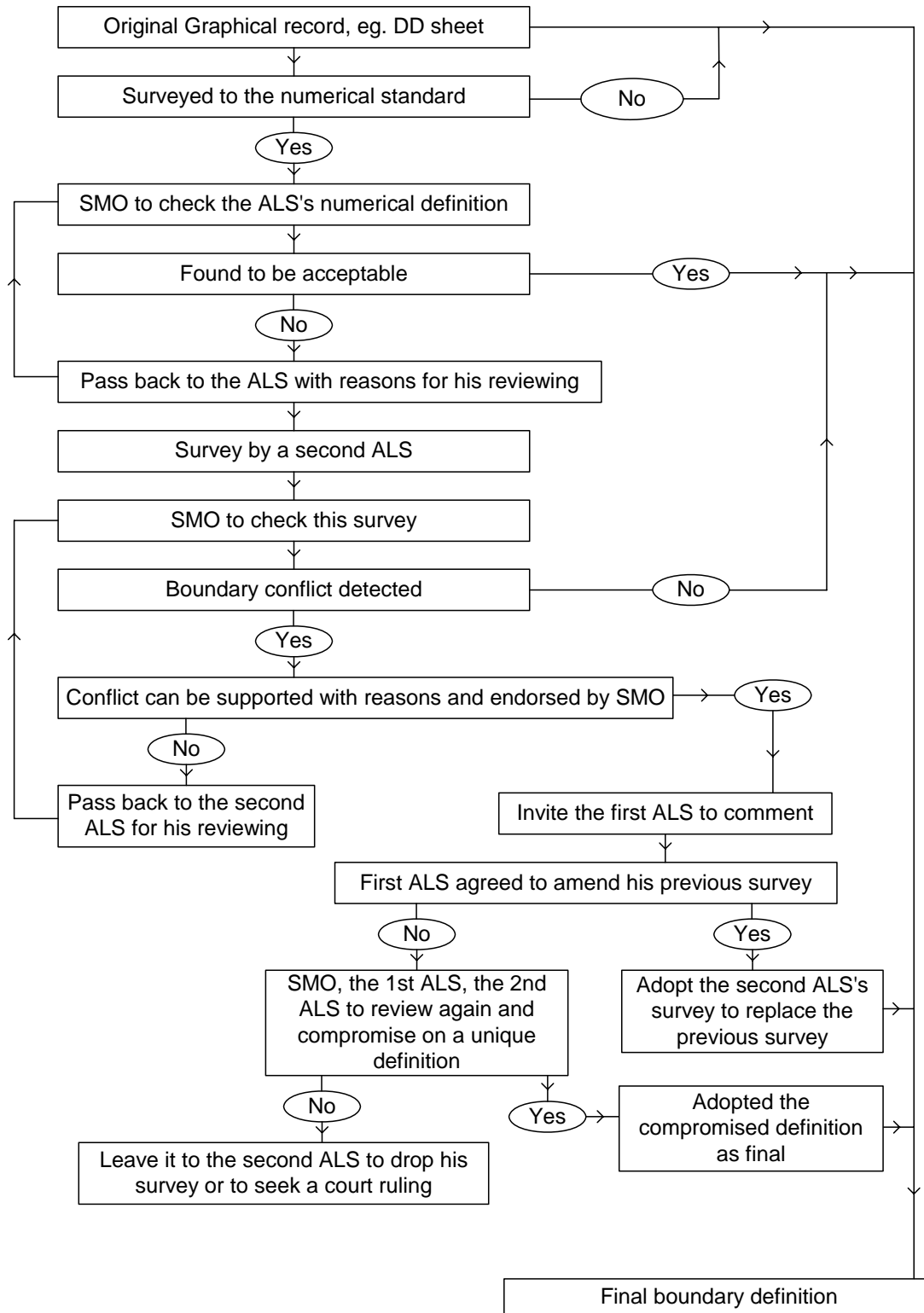
I learnt that SMO is proposing actions to amend the Land Survey Ordinance with a view to empowering the Director of Lands to rectify land boundary plans if found necessary. This will certainly represent a move in the right direction. However, all law amendment usually takes a long time to accomplish. Pending the outcome of such an ordinance amendment, SMO can still exercise more of its authority as an intermediate improvement such as (a) to agree with the ALS's the hierarchy of their submitted plan and the existing plans on record, (b) to re-word its reply to the ALS by stating in a more positive and unambiguous tune and (c) to strengthen its connection with other government departments so as to encourage others to refer to SMO for advice on land boundary matters.

Once the SMO may consider itself not only acting as the record holder but also representing the Government as the land grantor in respect of the boundary matters, it should be confident to adopt the role for agreeing with the ALS (on behalf of the grantee) on an up-graded boundary description. SMO can safely act in this way to finalize the boundary of an isolated land lot as this would not affect any third party's interest at all. As for cases of abutting land lots, SMO may be excused for feeling not so comfortable in agreeing with a land lot owner without inviting the adjoining owners to participate in the agreement. It is a pity that the recent suggestion of a systematic survey by the land surveyors had not been supported by the Central Administration otherwise this suggestion will precisely serve to relieve SMO from this worry. In the absence of such a systematic survey, the present system of recording the ALS's plan in the order of its their submission may still serve as the practical way to resolve the problem. This recording can still be regarded as finalizing the subject lot boundary until the adjacent lot is surveyed. By then, the second ALS (acting on behalf of the adjoining landowner) may have the chance to either adopt the common boundary or to challenge this boundary with reasons. The adoption, as is expected for 99% of the cases, may be considered as a belated endorsement of the previous boundary agreement and everything will become alright. In the rare case of that a challenge is indeed raised and the later survey is really found better, the first survey will have to be replaced by the second plan as the new final plan. The responsibility of the first surveyor towards his client can be worked out as a separate issue. This way of operation though not ideal can still maintain one and only one final boundary at any one time.

My above suggestion actually makes little change in the current form of boundary survey processing but only change in our perception of the value of our surveys. The SMO may continue to interpret the DD boundary and convey its result in the form of a Lot Index Plan. The ALS may continue to take the Lot Index Plan as the provisional boundary and verify it by a site survey and more in-depth documentary studies. On receiving the ALS's submitted plan, the SMO may continue to record the plan and release it for public use. However, the

difference is that actions should not be stopped right there. SMO must assume its role as the Government representative and invite the landowner (i.e. the client of the ALS) to sign on the new plan for registering in the Land Registry as an up-graded version of the original DD boundary. According to the Memorial Form Easy Guide of the Land Registry together with its Circular Memorandum nos. 102 and 108 (Reference 6), the rectification of a registered plan should be possible as long as the parties to the instrument (i.e. the plan in this case) are taking parts. The best way to illustrate my suggestion is to resort to a flow chart of action as follows.

Flow Chart of the hierarchy of boundary plan



8. CONCLUSION

The DD sheet and certain old grant plans need to be up-graded before they are suitable for supporting the present day development. Many new boundary plans had indeed been produced for this purpose. However, if the DD sheet and the new plans are to stay in co-existence with the DD sheet still be regarded as gospel due to their nature as the original contractual document, no improvement can actually be made and all the survey effort will become wasted. Worst still is that conflicting boundary records will pile up causing confusion and disputes. A system of hierarchy of the plans must be introduced so that there will always be one and only one final plan for a land lot at any one time.

The objection to replacing the DD sheet, albeit progressively, is the belief that a change of the boundary is in violation with the spirit of contract. My opinion is that this fear is unfounded. The surveyors are not really changing the boundary, but merely up-grading the boundary description. This change effectively represent a step of social advancement and is inevitable. Moreover, the quality of the DD sheet and the processing of using this sheet as the contractual record may be debatable. I see no reason to stop SMO as the government representative in land boundary matters to agree with the ALS as the representative of the grantee on an up-graded boundary plan. While an amendment to the relevant ordinances will be the best way to achieve this up-grading process, interim improvement measures should still be available. The present way of producing a Survey Record Plan without any official recognition is not good enough. We must aim at establishing a final plan for a land lot at any one time. We must not treat the ALS's plan only as a Survey Record Plan but must cause it to become a Survey Result Plan.

REFERENCES

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- Survey and Mapping Office, Technical Instruction No. 4/87, Appendix 1.
- Misrepresentation Ordinance (Cap. 284)
- Memorial Form Easy Guide of the Land Registry and LR Circular Memorandum Nos. 102 and 108.

BIOGRAPHICAL NOTES

Shou-chun Leung started his land surveying career in 1956 as a technician. He obtained a Government scholarship to study in the Army Survey Course in United Kingdom and became a full member of the Royal Institution of the Chartered Surveyor (RICS) in 1966. He was appointed as the professional land surveyor in the Survey and Mapping Office (SMO) of the Hong Kong Government in the same year. Through subsequent promotions within the land surveying grade, he reached the rank as the Principal Government Land Surveyor (i.e. Head

of SMO) in 1995 and retired from Government in 1996. Since then, he established a land surveying firm of his own up until now.

Shou-chun Leung was awarded as a MBE in the year of his retirement from the Government. He is currently a Fellow of HKIS, a Fellow of RICS, an Authorized Land Surveyor, a Registered Professional Surveyor (Land Surveying). He was appointed as an Adjunct Professor in the Hong Kong Polytechnic University in 2005 and 2006.

Throughout his career, Shou-chun Leung has acted as the President of the Hong Kong Institute of Land Surveyor (which was subsequently amalgamated with the Hong Kong Institute of Surveyors), the President of the HKIS, the President of the Hong Kong Association for the Advancement of Science and Technology. He has been a regular writer in various professional journals, seminar publications and local newspapers.

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